OceanStor
6.1.5

REST Interface Reference

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Preface

Purpose

This document describes the concept, architecture, development preparation, and interface reference of Huawei DeviceManager RESTful APIs and provides some code examples. Users can follow instructions in this document to develop applications for Huawei unified storage systems based on DeviceManager RESTful APIs.

Intended Audience

This document is intended for:

- Software engineers of independent software vendors (ISVs)
- Huawei technical support engineers
- Technical support engineers of channel partners

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

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Symbol	Description
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

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1 Quick Start

This chapter describes basic knowledge of DeviceManager RESTful APIs to help you quickly familiarize yourself with API usage.

1.1 Overview

1.2 Interface Specifications

1.3 Preparations

1.4 Constraint

1.1 Overview

Introduction to REST APIs

Representational State Transfer (REST) APIs are APIs provided by Huawei DeviceManager based on REST. Third-party developers can use the APIs to access DeviceManager resources, such as alarms, performance data, and resource allocation information.

Characteristics of REST APIs

- As standard integration solutions, REST APIs facilitate the rapid integration of third-party systems.
- Only authorized users can use the APIs. The APIs support only Hypertext Transfer Protocol over Secure Socket Layer (HTTPS)-based access to ensure security.
- The APIs use the JavaScript object notation (JSON) data format for data interaction. The data format is simple and easy to read and write, generating less network traffic than extensible markup language (XML).

Introduction to REST

REST is a coordinated set of constraints applied to network application design and development. It reduces development complexity and improves system scalability.

Resources are a core of REST. The resources are uniquely identified by uniform resource identifier (URI), for example, **/rest/${deviceId}/disk/${deviceId}**.

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REST employs the following standard operations to access resources:

- POST: creates resources.
- GET: queries resources.
- PUT: modify resources.
- DELETE: deletes resources.

DeviceManager RESTful APIs provide resources using URIs. Users obtain storage device resources and storage services using the URIs accordingly.

Introduction to JSON

JSON is a lightweight data-interchange format.

The structures of the JSON are as follows:

- Object: Objects are delimited with curly brackets, for example, **{key1: value1, key2: value2, ...}**. You can access data using **Object.key**.
- Array: Arrays are delimited with brackets, for example, **[element1, element2, ...]**. You can access data using **Object[index]**. The index starts from 0.

JSON strings are more concise compared with XML, which decreases network traffic.

The following code shows how to access JSON string data:

```
<script type="text/javascript">
 var resultInfo = {"data":{"total":7,"key_2":2,"key_1":5},
                   "code":0,
                   "description":"Success to get alarmcount." };
 //Access the value of key_1.
 var key_1 = resultInfo.data.key_1;
</script>
```

Introduction to HTTP

Hypertext Transfer Protocol (HTTP) is the most widely applied Internet protocol.

It is a protocol for releasing and receiving Hypertext Markup Language (HTML) pages.

Resources requested using HTTP or HTTPS are identified by URI.

HTTPS is a secure version of HTTP. It encrypts data using Secure Sockets Layer (SSL) to ensure data security.

HTTP Request Message

An HTTP request message contains:

- Request line, for example, **GET /images/logo.gif**, which requests the **logo.gif** file from the **/images** directory.
- Request header, for example, **Accept-Language: en**.
- Empty line.
- Optional request body.

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HTTP Request Methods

HTTP 1.1 defines eight methods (also called verbs) to indicate the desired action to be performed on the identified resource:

- OPTIONS: returns the HTTP methods that the server supports. This method can be used to check the functionality of a web server by requesting **'*'** instead of a specific resource.
- HEAD: asks for the response identical to the one that corresponds to a GET request but without the response body. This method is useful for retrieving meta-information written in response headers, without having to transport the entire content.
- GET: requests a representation of the specified resource. Requests using GET should only retrieve data and should have no other effect, for example, web applications.
- POST: requests that the server accept the data enclosed in the request message. It is often used when you submit a form or upload a file. The request may create a resource or modify an existing resource, or both.
- PUT: requests that the enclosed entity be stored under the supplied URI.
- DELETE: requests that the server delete the resource identified by **Request-URI**.
- TRACE: echoes back the request received by the server. This method is used for tests or diagnosis.
- CONNECT: converts the request connection to a transparent tunnel. This method is used to facilitate SSL-encrypted communication through an unencrypted HTTP proxy.

The method names are case insensitive. When the resource to be requested does not support the request method, the server returns status code 405 (Method Not Allowed). When the server cannot recognize or support the request method, the server returns status code 501 (Not Implemented).

HTTP Status Codes

The first line of all HTTP responses is called the status line. It includes the HTTP version, a 3-digit status code, and text description for the status code. The three parts are separated by space.

The first digit of a status code indicates the response type:

- 1*XX* Informational: The request was received by the server, and the processing continues.
- 2*XX* Success: The request was received, understood, and accepted successfully by the server.
- 3*XX* Redirection: The server must take additional actions to complete the request.
- 4*XX* Client Error: The request had syntax errors or could not be processed.
- 5*XX* Server Error: The server failed to fulfill an apparently valid request.

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HTTP Request Example

A session between an HTTP client and the server is running at **www.google.com**. Port 80 is used.

Client request:

```
GET / HTTP/1.1
Host:www.google.com
```

(The first line specifies the method, resource path, and protocol version. The second line contains a header mandatory for HTTP 1.1 and specifies the host.)

Server response:

```
HTTP/1.1 200 OK
Content-Length: 3059
Server: GWS/2.0
Date: Sat, 11 Jan 2003 02:44:04 GMT
Content-Type: text/html
Cache-control: private
Set-Cookie: PREF=ID=73d4aef52e57bae9:TM=1042253044:LM=1042253044:S=SMCc_HRPCQiqy  X9j;
expires=Sun, 17-Jan-2038 19:14:07 GMT; path=/; domain=.google.com
Connection: keep-alive
```

1.2 Interface Specifications

1.2.1 URI Specifications

Resources are a core of REST. The resources are uniquely identified by URI, for example, **https://{ip}:${port}/deviceManager/rest/resourceName/${id}**.

Huawei DeviceManager RESTful APIs have the following URI requirements:

The following shows a complete resource URI:

https://${ip}:${port}/deviceManager/rest/${deviceId}/resourceName[/${id}][?(parameterName=value)+]

NOTE

$ indicates that the following parameter is changeable.

- All path and parameter information except domain names and resource names of request URIs are case sensitive.
- **https://${ip}:${port}/deviceManager/rest/** is a fixed prefix of all REST URIs defined in this document.
- **${ip}** indicates the IP address of the storage array to be accessed.
- **${port}** indicates the DeviceManager port that provides services. The port number is 8088.
- **${deviceId}** indicates an ID that uniquely identifies a device. After a user successfully logs in to the client and is authenticated, the system returns this value. This value will be a part of URI paths in all subsequent requests.

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NOTE

Huawei DeviceManager APIs extend the resource concept. A resource name (**resourceName**) can consist of the resource and operation commands for the resource or be a combination of multiple resource names. For example, in **https://{ip}:${port}/deviceManager/rest/${deviceId}/alarm/currentalarm**, the resource name is **alarm/currentalarm**.

- **{id}** indicates the ID of an instance of a managed object type. This parameter is optional and used to query the instances of a managed object type. For example, in **GET https://{ip}:${port}/deviceManager/rest/${deviceId}/disk/12345**, disk **12345** is queried.

  If you want to batch query managed objects of a specified type, use the object name instead of the object ID, for example, **GET https://{ip}:${port}/deviceManager/rest/${deviceId}/disk**.

- **[?(parameterName=value)+]** is an additional parameter for querying resource URIs. This parameter is optional. Clients can specify the parameter (supported by the interface) behind the resource URI to filter and query resource objects.

  For example, **https://{ip}:${port}/deviceManager/rest/1016964156/disk?filter=name:DISK001&range=[0-100]** indicates that first 100 disks whose names fuzzily match **DISK001** on a storage device are queried.

  DeviceManager RESTful APIs support the following resource URI parameters:

- **filter** specifies search criteria for a specified resource object. The parameter value consists of the property name and property value of the resource object. The property name is separated from the property value by one (**:** indicates fuzzy query) or two colons (**::** indicates exact match). If multiple properties are queried, use and/or to separate each pair of the property name and property value and leave one space before and after and/or:

  value = [propertyName(:|::) propertyValue and propertyName1(:|::)propertyValue and …]

  Notes:A batch query request may time out if a large volume of data is returned. You are advised to specify the search criteria or scope.

- **range** specifies the search scope of a specified resource object. Client users can specify the start index and end index of the resource object list to define the search scope. The queried result does not contain the end index. The parameter value is as follows:

  value = [startNumber-endNumber]

  Note: if the query scope is too broad, request timeout will occur. Querying a maximum of 150 data at a time is recommended.

NOTE

Not all DeviceManager RESTful APIs support these parameters. For details, see the API description.

If this parameter is not specified, the number of queried messages ranges from 0 to 10,000 by default.

If you want to query all messages, you need to confirm the number of messages first and then set this parameter.

1.2.2 Message Headers

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1.2.2.1 Request Headers

The following table describes API request headers.

Header	Description	Example
Accept	Specifies the content type that can be accepted by a client.	Accept: text/plain, text/html
Accept-Encoding	Specifies the data encoding type.	Accept-Encoding: gzip, deflate, sdch
Accept-Language	Specifies the list of acceptable human languages for response.	Accept-Language: zh_CN,en
Cache-Control	Specifies directives that must be obeyed by all caching mechanisms along the request-response chain.	Cache-Control: no-cache
Connection	Specifies whether a permalink is required (HTTP 1.1 employs a permalink by default).	Connection: keep-alive
Host	Specifies the domain name of the server and the port ID for requested service.	Host: 10.169.66.112:${port}
User-Agent	Specifies the user agent that sends a request.	User-Agent: Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/38.0.2125.111 Safari/537.36
Date	Specifies the date and time that a message is sent.	Date: Tue, 15 Nov 2010 08:12:31 GMT
Content-Type	Specifies Multipurpose Internet Mail Extension (MIME) type of the body of a request.	Content-Type: application/json; charset=utf-8
Content-Length	Specifies the length of the request body.	Content-Length: 348

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Header	Description	Example
Cookie	Specifies an HTTP cookie that is sent to the web server.	Clients must use cookies to report session IDs. **NOTE** The session timeout period of servers is 20 minutes.
X-Requested-With	Identifies whether a request is a form submission or Ajax request.	X-Requested-With: XMLHttpRequest
iBaseToken	Specifies a random code for preventing cross-site request forgery (CSRF). A random code is generated after each successful authentication. All REST requests except the authentication request must carry this parameter.	

1.2.2.2 Response Headers

The following table describes HTTP response headers supported by the APIs.

Header	Description	Example
Cache-Control	Tells all caching mechanisms from the server to the client whether they may cache an object and the type.	Cache-Control: no-cache
Content-Language	Specifies the content language.	Content-Language: en,zh
Allow	Specifies valid actions for a network resource. If an action is not allowed, **405** is returned.	Allow: GET HEAD
Content-Encoding	Specifies the data encoding type.	Content-Encoding: gzip
Content-Length	Specifies the length of a response body.	Content-Length: 348

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Header	Description	Example
Content-Type	Specifies the MIME type of returned content.	Content-Type: application/json; charset=utf-8
Date	Specifies the date and time that a message is sent.	Date: Tue, 15 Nov 2010 08:12:31 GMT
Expires	Specifies the date and time after which the response is considered expired.	Expires: Thu, 01 Dec 2010 16:00:00 GMT
ETag	Specifies an identifier for a specific version of a resource.	ETag: "xxx"
Server	Specifies the name of a web server.	Server: Apache/1.3.27 (Unix) (Red-Hat/Linux)
Set-Cookie	Specifies an HTTP cookie.	session=ismsession=xxx;path=/;httponly;secure;
Transfer-Encoding	Specifies file transfer encoding.	Transfer-Encoding:chunked
Location	Redirects the location or identifies a new resource.	Location: http://www.huawei.com

1.2.3 Message Body

1.2.3.1 Request Body

A request body is a standard JSON object. All properties of the object map to the properties of the managed object in a storage device. All the property names are case sensitive, and property values are of specified data types. Request bodies are used to create and modify managed objects.

NOTE

For details about data types supported by the APIs, see the appendix.

A standard request body must be a standard JSON object. The structure is as follows:

```
{
propertyName0: propertyValue,
propertyName1: propertyValue,
propertyName2: propertyValue,
```

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…

}

1.2.3.2 Response Body

A response body is a predefined JSON object. The property names of objects in the response body are case sensitive and used to query managed objects. The structure of a response body is as follows:

- A request is correctly responded:

{

"data":{

"propertyName" : value1,

"propertyName" : value2

…..

},

"erro":{

"code": 0,

"description":"……"

}

}

- A request is incorrectly responded:

{

"error": {

"code": xxx,

"description":"xxx"

}

}

NOTE

error: response status of the service operation

1. code: status code (0 indicates that the request is correctly processed. Any other value indicates that the request is incorrectly processed).

2. description: error description. The parameter is left empty if the request is correctly responded. The error information is returned if the request is incorrectly responded.

3. suggestion: error suggestion. The parameter is left empty if the request is correctly responded. The suggestion about handling the error is returned if the request is incorrectly responded.

data: returned data. It maps to the status response body of the managed object to be queried. The parameter value is returned only when the request is correctly responded. To prevent cross-site scripting attacks, all returned values of **String** have been escaped. Therefore, escape returned values back before using them. For details, see "List of escape characters" in Appendix.

In some cases, returned JSON objects contain the fields that are not described in the returned results. Do not use these fields.

1.2.4 REST Request Methods

DeviceManager APIs support the following methods:

1. GET: queries managed objects.

2. POST: creates managed objects.

3. PUT: modifies the properties of or performs special operations on managed objects.

4. DELETE: deletes managed objects.

1.2.4.1 GET

The GET method is used to query managed objects, including single query and batch query. The parameters to be delivered are defined in the URI.

- Querying a managed object using the ID:
  Example: Use IP address **192.168.1.10** to query user **0** on device **abcd**:

URI: https://192.168.1.10:${port}/deviceManager/rest/abcd/user/0

METHOD : GET

Normal response:

{

"data": {

"TYPE" : 202,

"ID" : "0",

"NAME" : "testAdmin",

"DESCRIPTION" : "A test user",

"LEVEL" : "1",

"SCOPE" : "0",

"ACCOUNTSTATE" : "1024",

….

},

"error": {

"code": 0,

"description" : ""

}

}

- Batch querying managed objects:
  Example: Use IP address **192.168.1.10** to query users on device **abcd**:

URI: https://192.168.1.10:${port}/deviceManager/rest/abcd/user

METHOD:GET

Normal response:

{

"data" : [{

"TYPE" : 202,

"ID" : "0",

"NAME" : "testAdmin",

"DESCRIPTION" : "A test user",

"LEVEL" : "1",

"SCOPE" : "0",

"ACCOUNTSTATE" : "1024",

"CREATETIME" : "1324633232",

….}, {

"TYPE" : 202,

"ID" : "0",

"NAME" : "testAdmin2",

"DESCRIPTION" : "A test user2",

"LEVEL" : "1",

"SCOPE" : "0",

"ACCOUNTSTATE" : "1024",

"CREATETIME" : "1324735231",

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….},…..

}],

"error": {

"code": 0,

"description" : ""

}

}

1.2.4.2 POST

The POST method is used to create managed objects. The parameters to be delivered are defined in the request body.

- Creating a managed object:

Example: Use IP address **192.168.1.10** to create user **test** on device **abcd**:

URI: https://192.168.1.10:${port}/deviceManager/rest/abcd/user

METHOD:POST

Request body:

{

"TYPE":202,

"NAME":"test",

"SCOPE":0,

"LEVEL":2,

"PASSWORD":"Admin@storage1",

"DESCRIPTION":""

}

Normal response:

{

"error":{"code":0,"description":"0"}

}

1.2.4.3 PUT

The PUT method is used to modify the properties of managed objects. The parameters to be delivered are defined in the request body.

Example: Use IP address **192.168.1.10** to change the description and password of user **test** (ID = 1) on device **abcd**:

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URI: https://192.168.1.10:${port}/deviceManager/rest/abcd/user/1

METHOD:PUT

Request body:

{

"DESCRIPTION":"yyyyyyyyyyy",

"PASSWORD":"Admin@storage1",

"OLDPASSWORD":"Admin@storage2"

}

Normal response:

{

"error":{"code":0,"description":"0"}

}

1.2.4.4 DELETE

The DELETE method is used to delete managed objects. The parameters to be delivered are defined in the URI.

Example: Use IP address **192.168.1.10** to delete user **test** (ID = 1) from device **abcd**:

URI: https://192.168.1.10:${port}/deviceManager/rest/abcd/user/1

METHOD: DELETE

Request body:

None

Normal response:

{

"error":{"code":0,"description":"0"}

}

1.3 Preparations

Configuring a Server Security Certificate

Since DeviceManager RESTful APIs are invoked in HTTPS mode, client application programs must access RESTful APIs using HTTPS.

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CAUTION

By default, DeviceManager RESTful APIs provide a temporary self-signed certificate. Enterprise users can use their own certificates for replacement. For details, see the related management guide of storage devices.

Setting User Permission

NOTE

When a user logs in to or exits DeviceManager, the user permission will be used.

Since RESTful APIs require user authentication, contact the DeviceManager administrator and perform the following steps to set user permissions for a client that needs to invoke RESTful APIs:

1. Log in to DeviceManager control of a specific device.

2.On the main menu, choose **Settings** > **Permission Settings** > **User Management**.

3.On the user list page, click **Add**.

4.On the page that is displayed, set basic user information.

4.1.In **Username,** enter a name for the user.

4.2.Enter a password in **Password** and **Confirm Password**.

4.3.Select a role level for the user and click **OK**.

NOTE

System presets three role levels: super administrator, administrator, and read-only user. There is one built-in super administrator and one more can be created. Administrators and read-only users can be created based on site requirements. Administrators can perform query and configuration, whereas read-only users can perform query only.

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1.4 Constraint

NOTICE

You must follow instructions in this interface document for development. Fields not mentioned in this document are invalid. Do not use these fields.

If meaningless fields (including case inconsistency) are used, the disk array does not process them and the interface fields are processed by default.

For interfaces used for batch queries, if configurations and queries are performed concurrently, the query results may be incorrect.

It is recommended that the number of concurrent requests to RESTful APIs be less than or equal to 100. If the number of concurrent requests exceeds 100, a request timeout may occur.

The recommended number of values for a batch query is 100 at most. Currently, only four configuration management threads receive configuration query requests. The specific response speed depends on the service type and service pressure.

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2 RESTful APIs

2.1 Storage setting
2.2 Alarm management
2.3 Security management
2.4 License management
2.5 Performance management
2.6 System information management
2.7 Block storage service management
2.8 Storage pool
2.9 Data protection management
2.10 Performance optimization
2.11 File system storage service
2.12 vStore management
2.13 Import and export management
2.14 Others
2.15 AntiRansomware

2.1 Storage setting

2.1.1 system

2.1.1.1 Add

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2.1.1.2 Delete

2.1.1.3 Modify

2.1.1.3.1 Interface for Changing the LLDP Working Mode

Function

Change the LLDP working mode.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LLDP_WORKING_MODE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
lldpWorkingMode	Mandatory	enum	Indicates the LLDP working mode. **The value is described as follows:** 0: lldp_mode_disable 1: lldp_mode_tx 2: lldp_mode_rx 3: lldp_mode_txrx **Note:** 1:"lldp_mode_disable": indicates that LLDP packets cannot be sent or received. 2:"lldp_mode_tx": Only packets can be sent. 3:"lldp_mode_rx": Only packets can be received. 4:"lldp_mode_txrx": indicates that LLDP packets can be sent and received.

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Result

N/A

Example

- Change the LLDP working mode to send only packets.

```
Request: PUT /deviceManager/rest/210235843910E6000009/LLDP_WORKING_MODE
{
    "lldpWorkingMode":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.3.2 Interface for Modifying Basic System Information

Function

This interface is used to modify basic system information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	System name. **The value is described as follows:** Contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~127
LOCATION	Optional	string	Location. **Length:**1~511
DESCRIPTION	Optional	string	System description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
WRITETHROUGHSW	Optional	bool	Write through switch. **The value is described as follows:** true:write through when single controller false:wiite cache when single controller
WRITETHROUGHTIME	Optional	uint32	Write through timeout period. **The value is described as follows:** The value ranges from 0 to 2160. 0 indicates that write through never times out.

Result

N/A

Usage Guidelines

Do not miss the last slash (/) at the end of the URL.

Example

- Modifying the name and location of a system.

```
Request: PUT /deviceManager/rest/210235843910E6000009/system
{
   "NAME": "RESTful_test",
   "LOCATION": "chengdu"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.1.3.3 Interface for Modifying SmartGUI Service Status

Function

This interface is used to modify SmartGUI service status.

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URL

https://${ip}:${port}/api/v2/smartgui/switchstate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
status	Mandatory	string	SmartGUI service status. **The value is described as follows:** 0: disables the service. 1: enables the service.

Result

N/A

Example

- Modifying SmartGUI service status.

```
Request: PUT/api/v2/smartgui/switchstate
{
   "status": "1"
}

Response:
{
   "data":{},
   "result":
   {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

2.1.1.3.4 Interface for Modifying the Equipment Time Zone

Function

This interface is used to modify the equipment time zone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system_timezone

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYS_TIME_ZONE_NAME	Mandatory	string	Time zone name. **Note:**When an interface is used to modify the device time zone, the delivered parameter is one of the returned values when an interface is used to query device time zone information.

Result

N/A

Example

- Modifying the equipment time zone.

```
Request: PUT /deviceManager/rest/210235843710E7000007/system_timezone
{
    "CMO_SYS_TIME_ZONE_NAME": "Asia/Beijing"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.3.5 Interface for Modifying the Equipment UTC Time

Function

This interface is used to modify the equipment UTC time.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system_utc_time

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYS_UTC_TIME	Mandatory	uint64	Equipment UTC time. **The value is described as follows:** 946656000~3000000000

Result

N/A

Example

- Modifying the equipment UTC time.

```
Request: PUT /deviceManager/rest/210235843710E7000007/system_utc_time
{
    "CMO_SYS_UTC_TIME": 1478179247
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.4 Query

2.1.1.4.1 Interface for Querying Basic System Information

Function

This interface is used to query basic information about a system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system/

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 201: system
ID	Mandatory	string	System ID.
NAME	Mandatory	string	System name.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	System health status. **The value is described as follows:** 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	System running status. **The value is described as follows:** 1: Normal 3: Not running 12: Powering on 47: Powering off 51: Upgrading
DESCRIPTION	Mandatory	string	System description.

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Parameter	Mandatory/ Conditional	Type	Description
PRODUCTMODE	Mandatory	string(enum)	Product model. **The value is described as follows:** 806: Dorado6000 V3 811: Dorado 5000 V6 (SAS) 812: Dorado 5000 V6 (NVMe) 813: Dorado 6000 V6 (SAS) 814: Dorado 6000 V6 (NVMe) 815: Dorado 8000 V6 (SAS) 816: Dorado 8000 V6 (NVMe) 817: Dorado 18000 V6 (SAS) 818: Dorado 18000 V6 (NVMe) 819: Dorado 3000 V6 (SAS) 821: Dorado 5000 V6 (IP SAS) 822: Dorado 6000 V6 (IP SAS) 823: Dorado 8000 V6 (IP SAS) 824: Dorado 18000 V6 (IP SAS) 825: Dorado 3000 V6 826: Dorado 5000 V6 827: Dorado 6000 V6 828: Dorado 6000 V6 829: Dorado 8000 V6 830: Dorado 18000 V6 831: Dorado 18000 V6 833: OceanStor 5310 834: OceanStor 5510 835: OceanStor 5610 836: OceanStor 6810

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Parameter	Mandatory/ Conditional	Type	Description
			837: OceanStor 18510 838: OceanStor 18810 851: OceanStor Dorado 2000
PRODUCTVERSION	Mandatory	string	Product version.
DOMAINNAME	Mandatory	string	Home domain.
CACHEWRITEQUOTA	Mandatory	string(uint64)	Cache write quota.
MEMBERDISKSCAPAC-ITY	Mandatory	string(uint64)	Total raw capacity of all member disks in a disk domain. **Unit:**Sectors
HOTSPAREDISKSCA-PACITY	Mandatory	string(uint64)	Total raw capacity of all hot spare disks (If no hot spare disks exist in the system, the value is 0. The value is fixed to 0 for systems built based on the XVE architecture.). **Unit:**Sectors
FREEDISKSCAPACITY	Mandatory	string(uint64)	Total raw capacity of all free disks (If no free disks exist in the system, the value is 0.). **Unit:**Sectors
UNAVAILABLEDISKS-CAPACITY	Mandatory	string(uint64)	Total raw capacity of all unavailable disks (If no unavailable disks exist in the system, the value is 0. An unavailable disk is a malfunctioning member disk or free disk.). **Unit:**Sectors
STORAGEPOOLRAWC APACITY	Mandatory	string(uint64)	Total raw capacity of disks in all storage pools. **Unit:**Sectors

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Parameter	Mandatory/ Conditional	Type	Description
STORAGEPOOLCAPACITY	Mandatory	string(uint64)	Available capacity after RAID groups are created in all storage pools. **Unit:**Sectors
STORAGEPOOLUSEDCAPACITY	Mandatory	string(uint64)	Total used capacity of all storage pools (after RAID groups are created). **Unit:**Sectors
STORAGEPOOLFREECAPACITY	Mandatory	string(uint64)	Total free capacity of all storage pools (after RAID groups are created). **Unit:**Sectors
STORAGEPOOLHOSTSPARECAPACITY	Mandatory	string(uint64)	Total hot spare capacity reserved of all storage pools (after RAID groups are created). **Unit:**Sectors
THICKLUNSALLOCATECAPACITY	Mandatory	string(uint64)	Total capacity allocated to all thick LUNs. **Unit:**Sectors
THICKLUNSUSEDCAPACITY	Mandatory	string(uint64)	Total used capacity of all thick LUNs. **Unit:**Sectors
THINLUNSMAXCAPACITY	Mandatory	string(uint64)	Total thin LUN capacity visible to the host. **Unit:**Sectors
THINLUNSALLOCATECAPACITY	Mandatory	string(uint64)	Total capacity allocated to all thin LUNs. **Unit:**Sectors
THINLUNSUSEDCAPACITY	Mandatory	string(uint64)	Total used capacity of all thin LUNs. **Unit:**Sectors

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Parameter	Mandatory/ Conditional	Type	Description
SECTORSIZE	Mandatory	string(uint64)	Sector size. **Unit:**bytes
VASA_SUPPORT_BLOCK	Mandatory	string	Type of the block-based access interface. If multiple types exist, separate them from each other using a comma (,). **The value is described as follows:** FC FCOE ISCSI Others
VASA_SUPPORT_FILESYSTEM	Mandatory	string	Type of the supported file system interface.
VASA_ALTERNATE_NAME	Mandatory	string	Disk array alias.
VASA_SUPPORT_PROFILE	Mandatory	string	Type of the supported configuration file.
wwn	Mandatory	string	WWN.
WRITETHROUGHSW	Mandatory	string	Write through switch. **The value is described as follows:** 0: off false: off 1: on true: on
WRITETHROUGHTIME	Mandatory	string(uint64)	Write through timeout period. **The value is described as follows:** The value ranges from 0 to 2160. 0 indicates that write through never times out. The default value for entry-level and mid-range storage systems is 72. **Unit:**hours

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Parameter	Mandatory/ Conditional	Type	Description
TOTALCAPACITY	Mandatory	string(uint64)	Total system capacity. **Unit:**Sectors
USEDCAPACITY	Mandatory	string(uint64)	Used system capacity. **Unit:**Sectors
CONFIGMODEL	Mandatory	string(enum)	Single controller or multiple controllers. **The value is described as follows:** 0: single controller 1: multiple controllers
mappedLunsCountCapacity	Mandatory	string(uint64)	Total capacity of mapped LUNs. **Unit:**Sectors
unMappedLunsCountCapacity	Mandatory	string(uint64)	Total capacity of unmapped LUNs. **Unit:**Sectors
userFreeCapacity	Mandatory	string(uint64)	Available system capacity. **Unit:**Sectors
patchVersion	Conditional	string	Patch version. **Note:**This field is returned when it is a patch version.
pointRelease	Mandatory	string	Point release.
productModeString	Mandatory	string	Product model name.
apolloVersion	Mandatory	string	Kernel version.

Usage Guidelines

Do not miss the last slash (/) at the end of the URL.

Example

- Querying basic information about a system.

```
Request: GET /deviceManager/rest/210235843910E6000009/system/

Response: {
   "data": {
      "CACHEWRITEQUOTA": "333",
      "CONFIGMODEL": "1",
      "DESCRIPTION": "",
```

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```
        "DOMAINNAME": "",
        "FREEDISKSCAPACITY": "0",
        "HEALTHSTATUS": "1",
        "HOTSPAREDISKSCAPACITY": "0",
        "ID": "2102351PDW10HC000002",
        "LOCATION": "",
        "MEMBERDISKSCAPACITY": "43593750000",
        "NAME": "Huawei.Storage",
        "PRODUCTMODE": "805",
        "PRODUCTVERSION": "V600R005C01",
        "RUNNINGSTATUS": "1",
        "SECTORSIZE": "512",
        "STORAGEPOOLCAPACITY": "19546791701",
        "STORAGEPOOLFREECAPACITY": "19546791700",
        "STORAGEPOOLHOSTSPARECAPACITY": "6515597233",
        "STORAGEPOOLRAWCAPACITY": "39093583402",
        "STORAGEPOOLUSEDCAPACITY": "1",
        "THICKLUNSALLOCATECAPACITY": "0",
        "THICKLUNSUSEDCAPACITY": "-1",
        "THINLUNSALLOCATECAPACITY": "0",
        "THINLUNSMAXCAPACITY": "4201472",
        "THINLUNSUSEDCAPACITY": "-1",
        "TOTALCAPACITY": "43593750000",
        "TYPE": 201,
        "UNAVAILABLEDISKSCAPACITY": "0",
        "USEDCAPACITY": "1",
        "VASA_ALTERNATE_NAME": "Huawei.Storage",
        "VASA_SUPPORT_BLOCK": "FC,FCOE,ISCSI,Others",
        "VASA_SUPPORT_FILESYSTEM": "",
        "VASA_SUPPORT_PROFILE": "BlockDeviceProfile,CapabilityProfile,VirtualVolumeProfile",
        "WRITETHROUGHSW": "1",
        "WRITETHROUGHTIME": "192",
        "mappedLunsCountCapacity": "6144",
        "patchVersion": "",
        "pointRelease": "6.1.RC2",
        "productModeString": "Dorado5000 V3",
        "unMappedLunsCountCapacity": "4195328",
        "userFreeCapacity": "52124776935",
        "wwn": "2100602e2028e30f",
        "apolloVersion": "1.1.5.0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.1.1.4.2 Interface for Querying Intelligent Alarm Handling Suggestions and Procedures

Function

Query intelligent alarm handling suggestions and procedures.

URL

https://${ip}:${port}/api/v2/smartgui/fixmethod/${alarm_id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
startTime	Optional	string	Time when an alarm is generated.
location	Optional	string	Location field in the alarm information. **The value is described as follows:** The value is the same as that of the location field in the alarm information returned by the alarm information query interface on the OMRP platform. **Note:**The value of the location parameter in the request must be URL-encoded.
alarm_id	Mandatory	string	Decimal alarm ID.

Result

Parameter	Mandatory/Conditional	Type	Description
SmartFixType	Mandatory	integer	Intelligent alarm handling type. **The value is described as follows:** 0: alarm handling suggestion 1: alarm handling procedure
localTime	Mandatory	string	Time when the intelligent alarm handling parsing is complete.

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Parameter	Mandatory/ Conditional	Type	Description
suggestions	Mandatory	array	Alarm handling suggestions and associated alarm information. **Note:**This field contains the following subfields: data, status, type, and suggestion.
type	Mandatory	string	Scenario type of the intelligent handling suggestion or procedure for the current alarm. **Note:**This field is a sub-field of the suggestions field.
status	Mandatory		Parsing status of a handling suggestion or a handling procedure of the current alarm. **The value is described as follows:** 0: parsing complete -1: parsing failed **Note:**This field is a sub-field of the suggestions field.
suggestion	Conditional	string	Suggestion for handling associated alarms. **Note:** This field is a sub-field of the suggestions field. This field is returned only in the intelligent repair step scenario.

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Parameter	Mandatory/ Conditional	Type	Description
data	Mandatory	json	Associated information about a handling suggestion or a handling procedure of the current alarm. **Note:** This field is a sub-field of the suggestions field. This field contains the following subfields: capacity, poolID, openAutoDelPoolID and value.
poolID	Conditional	integer	ID of the storage pool whose capacity is to be expanded. **The value is described as follows:** -1: effective capacity in the capacity expansion scenario ≥ 0: storage pool ID **Note:** This field is a subfield of data. This field is returned in the capacity expansion alarm scenario.
capacity	Conditional	float	Recommended size for capacity expansion. **Unit:**MB **Note:** This field is a subfield of data. This field is returned in the capacity expansion alarm scenario.

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Parameter	Mandatory/ Conditional	Type	Description
value	Conditional	integer	You are advised to enable the function of automatically deleting protection data. **The value is described as follows:** 1: You are advised to enable the function of automatically deleting protection data. **Note:** This field is a subfield of data. This field is returned in the capacity expansion alarm scenario.
openAutoDelPoolID	Conditional	integer	ID of the storage pool where automatic deletion of protection data is not enabled. **Note:** This field is a subfield of data. This field is returned in the capacity expansion alarm scenario.

Example

- Query the capacity expansion suggestion for alarm 0xF00D80143 indicating that the effective capacity of the system is about to be used up.

```
Request: GET /api/v2/smartgui/fixmethod/64438665539?startTime=1622784250&location=capacity-threshold%3D0.9

Response:
{
    "data": {
        "SmartFixType": 0,
        "localTime": "2021-07-08 18:30:46",
        "suggestions": [
            {
                "data": {
                    "capacity": {
                        "12M": 22614646.4,
                        "3M": 400630.4000000004,
                        "6M": 7670672.4
                    },
                    "poolID": -1
```

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```
            },
            "status": 0,
            "type": "system_capacity"
        },
        {
            "data": {
                "openAutoDelPoolID": "0",
                "value": 1
            },
            "status": 0,
            "type": "cdp"
        }
    ]
  },
  "result": {
     "code": 0,
     "description": "",
     "suggestion": ""
  }
}
```


2.1.1.4.3 Interface for Querying NTP Server Information

Function

This interface is used to query NTP server configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ntp_client_config

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SYS_NTP_CLNT_CONF_SWITCH	Mandatory	uint32	NTP switch. **The value is described as follows:** 0: disabled 1: enabled
CMO_SYS_NTP_CLNT_CONF_SERVER_IP	Mandatory	string	NTP server address.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_SYS_NTP_SYNC_PERIOD	Mandatory	uint32	NTP synchronization period. **Note:**This parameter has been deprecated, NTP synchronizes the time automatically.
CMO_SYS_NTP_CLNT_CONF_AUTH_SWITCH	Mandatory	enum	NTP authentication status. **The value is described as follows:** 0: disabled 1: enabled

Example

- Querying NTP server configurations.

```
Request: GET /deviceManager/rest/210235843910E6000009/ntp_client_config

Response: {
   "data": [
      {
         "CMO_SYS_NTP_CLNT_CONF_SERVER_IP": "10.169.2.1,10.169.60.22",
         "CMO_SYS_NTP_CLNT_CONF_SWITCH": "1",
         "CMO_SYS_NTP_SYNC_PERIOD": "7200",
         "CMO_SYS_NTP_CLNT_CONF_AUTH_SWITCH": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.1.4.4 Interface for Querying NTP Status

Function

The show ntp status command is used to query the NTP status.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ntp_client_config/get_ntp_status

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SYS_NTP_CLNT_CONF_SERVER_IP	Mandatory	string	NTP server address.
currentConnectedNTP-Server	Mandatory	string	Current connected NTP server.
offset	Mandatory	string	Time difference between the disk array and the current connected NTP server. If "+xxx.xxx second (s)" is displayed, it indicates that the time of the disk array is xxx.xxx second (s) slower than that of the NTP server. If "-xxx.xxx second (s)" is displayed, it indicates that the time of the disk array is xxx.xxx second (s) faster than that of the NTP server.
status	Mandatory	enum	NTP status. **The value is described as follows:** 0: Normal 1: Abnormal 2: --

Usage Guidelines

If the NTP configuration is modified, query the NTP status one minute later.

Example

- Query the NTP status.

```
Request: GET /deviceManager/rest/2102350BSJ1057233051/ntp_client_config/get_ntp_status

Response: {
   "data": {
```

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```
        "CMO_SYS_NTP_CLNT_CONF_SERVER_IP": "192.168.0.1",
        "currentConnectedNTPServer": "192.168.0.1",
        "offset": "+0.001856 second&#40;s&#41;",
        "status": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.1.1.4.5 Interface for Querying Power Information in Real Time

Function

View the system power information in real time.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_realtime_power_consumption

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
powerConsumption-Value	Mandatory	uint32	Indicates the system power. **Unit:**W

Example

- Querying system power information in real time.


```
Request: GET /deviceManager/rest/210235843710E7000007/get_realtime_power_consumption

Response: {
    "data": {
        powerConsumptionValue: "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


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2.1.1.4.6 Interface for Querying Recommended Information on CIFS Share Creation

Function

This interface is used to query recommended information on CIFS share creation.

URL

https://${ip}:${port}/api/v2/smartgui/cifsshare/${vstoreId}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
filesystem	Mandatory	string	File system.
NAME	Mandatory	array	Recommended share name.
domaintype	Mandatory	string	Domain type. **The value is described as follows:** 0: AD domain user or user group. 1: LDAP domain user or user group. 2: Local user or user group. 3: NIS domain user or user group.

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Parameter	Mandatory/ Conditional	Type	Description
permission	Mandatory	string	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read/write
ABEENABLE	Mandatory	bool	After this function is enabled, users can only access folders for which the users have access permission. **The value is described as follows:** true: enabled. false: disabled.
ENABLECA	Mandatory	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled. false: disabled.
ENABLENOTIFY	Mandatory	bool	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled. false: disabled.
smb3encryptionenable	Mandatory	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: on. false: off.

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Parameter	Mandatory/ Conditional	Type	Description
unencryptedaccess	Mandatory	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: on. false: off.
authname	Mandatory	string	User or user group that has the permission to access the CIFS share. **The value is described as follows:** 0: Windows local authentication user group Everyone. 1: Shared user. 2: Shared user group.
ENABLESHOWSNAPSHOT	Mandatory	bool	Whether to enable the snapshot function. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWPREVIOUSVERSIONS	Mandatory	bool	Indicates whether to enable the function of displaying earlier versions. **The value is described as follows:** true: enabled false: disabled

Example

- Querying recommended information on CIFS share creation.

```
Request: GET /api/v2/smartgui/cifsshare/0

Response: {
    'data': {
        "ENABLESHOWSNAPSHOT": "true",
        "ENABLESHOWPREVIOUSVERSIONS": "true",
        'ABEENABLE': 'false',
        'ENABLECA': 'false',
        'ENABLENOTIFY': 'true',
        'NAME': [
```

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```
            'CIFSShare001',
            'CIFSShare_001',
            'CIFS_Share_001'
        ],
        'authname': '0',
        'domaintype': '2',
        'filesystem': '',
        'permission': '0',
        'smb3encryptionenable': 'false',
        'unencryptedaccess': 'false'
    },
    'result': {
        'code': 0,
        'description': '',
        'suggestion': ''
    }
}
```

2.1.1.4.7 Interface for Querying Recommended Information on File System Creation

Function

This interface is used to query recommended information on file system creation.

URL

https://${ip}:${port}/api/v2/smartgui/filesystem

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	array	List of recommended file system names.
atimeupdatemode	Mandatory	string	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day

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Parameter	Mandatory/ Conditional	Type	Description
atime	Mandatory	string	Indicates whether the access time is updated after a control file is read. **The value is described as follows:** true: on false: off
workloadtypeid	Mandatory	string	ID of the application type. **The value is described as follows:** 0-2048.
capacity	Mandatory	string	Configured capacity. **Unit:**sectors
capacitythreshold	Mandatory	string	Alarm threshold of the total space capacity. **The value is described as follows:** The value ranges from 50 to 95 and the default value is 90%.
isshowsnapdir	Mandatory	string	Whether the snapshot directory is visible. **The value is described as follows:** true: visible false: invisible
parentid	Mandatory	string	Storage pool ID.
securitystyle	Mandatory	string	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 0: Mixed 1: Native 2: NTFS 3: UNIX

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Parameter	Mandatory/ Conditional	Type	Description
naslockingpolicy	Mandatory	string	NAS lock policy in native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy.
snapshotreserveper	Mandatory	string	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%.
vaaiswitch	Mandatory	string	Whether to enable the VAAI feature. **The value is described as follows:** 0: no; 1: yes

Example

- Querying recommended information on file system creation.

```
Request: GET /api/v2/smartgui/filesystem

Response: {
   "data": {
      "NAME": [
         "FileSystem001",
         "FileSystem001",
         "FileSystem001"
      ],
      "atimeupdatemode": "3600",
      "atime": "true",
      "capacity": "1212",
      "capacitythreshold": "80",
      "isshowsnapdir": "true",
      "naslockingpolicy": "",
      "parentid": "0",
      "securitystyle": "1",
      "snapshotreserveper": "45",
      "vaaiswitch": "0",
      "workloadtypeid": "0"
   },
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
```

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```
  }
}
```

2.1.1.4.8 Interface for Querying Recommended Information on LUN Creation

Function

Query recommended LUN creation information.

URL

https://${ip}:${port}/api/v2/smartgui/lun

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	array	List of recommended LUN names.
capacity	Mandatory	string	Recommended capacity.
count	Mandatory	integer	Recommended quantity.
mapview	Mandatory	string	Recommended host ID.

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Parameter	Mandatory/ Conditional	Type	Description
workloadtypeid	Mandatory	string	Recommended application type. **The value is described as follows:** 0: Default 1: Oracle_OLAP 2: Oracle_OLTP 3: Oracle_OLAP&OLTP 4: SQL_Server_OLAP 5: SQL_Server_OLTP 6: SQL_Server_OLAP&OLTP 7: SAP_HANA 8: Vmware_VDI 9: Hyper-V_VDI 10: FusionAccess_VDI
portgroupid	Mandatory	string	Recommended port group ID.
storagepoolid	Mandatory	string	Recommended storage pool ID.

Example

- Query recommended LUN creation information.

```
Request: GET /api/v2/smartgui/lun

Response: {
   "data": {
      "NAME": [
         "LUNGroup_025_003",
         "LUN_Group",
         "b_Group"
      ],
      "capacity": "209715200",
      "count": 1,
      "mapview": "4",
      "portgroupid": "",
      "storagepoolid": "3",
      "workloadtypeid": "0"
   },
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

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2.1.1.4.9 Interface for Querying Recommended Information on LUN Creation in a LUN Group

Function

This interface is used to query recommended information on LUN creation in a LUN group.

URL

https://${ip}:${port}/api/v2/smartgui/lunfromlg/${lg_name}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
lg_name	Mandatory	string	LUN group name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory	array	List of recommended LUN names.
capacity	Mandatory	string	Recommended capacity.
count	Mandatory	integer	Recommended quantity.
mapview	Mandatory	string	Recommended mapping.

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Parameter	Mandatory/ Conditional	Type	Description
workloadtypeid	Mandatory	string	Recommended application type. **The value is described as follows:** 0: Default 1: Oracle_OLAP 2: Oracle_OLTP 3: Oracle_OLAP&OLTP 4: SQL_Server_OLAP 5: SQL_Server_OLTP 6: SQL_Server_OLAP&OLTP 7: SAP_HANA 8: Vmware_VDI 9: Hyper-V_VDI 10: FusionAccess_VDI
portgroupid	Mandatory	string	Recommended port group ID.
storagepoolid	Mandatory	string	Recommended storage pool ID.

Example

- Querying recommended information on LUN creation in a LUN group.

```
Request: GET /api/v2/smartgui/lunfromlg/LunGroup002

Response:
{
   "data": {
      "NAME": [
         "LUNGroup_002_003",
         "LUN_Group",
         "LUNGroup_002_0002"
      ],
      "capacity": "20971520",
      "count": 1,
      "mapview": "4",
      "portgroupid": "",
      "storagepoolid": "3",
      "workloadtypeid": "0"
   },
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

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2.1.1.4.10 Interface for Querying Recommended Information on LUN Group Creation

Function

This interface is used to query recommended information on LUN group creation.

URL

https://${ip}:${port}/api/v2/smartgui/lungroup

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	array	List of recommended LUN group names.
hostgroupid	Mandatory	string	Recommended host group ID.
hostid	Mandatory	string	Recommended host ID.
luns_info	Mandatory	array	Recommended information on LUN creation.
portgroupid	Mandatory	string	Recommended port group ID.
storagepoolid	Mandatory	string	Recommended storage pool ID.

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Parameter	Mandatory/ Conditional	Type	Description
workloadtype	Mandatory	string	Recommended application type. **The value is described as follows:** 0: Default 1: Oracle_OLAP 2: Oracle_OLTP 3: Oracle_OLAP&OLTP 4: SQL_Server_OLAP 5: SQL_Server_OLTP 6: SQL_Server_OLAP&OLTP 7: SAP_HANA 8: Vmware_VDI 9: Hyper-V_VDI 10: FusionAccess_VDI

Example

- Querying recommended information on LUN group creation.

```
Request: GET /api/v2/smartgui/lungroup

Response: {
   "data": {
      "NAME": [
         "LunGroup026",
         "Lun_Group",
         "nsm_Group"
      ],
      "hostgroupid": "",
      "hostid": "",
      "luns_info": [
         {
            "capacity": "20971520",
            "count": "1",
            "name": "LUNGroup_026_001"
         }
      ],
      "portgroupid": "",
      "storagepoolid": "3",
      "workloadtype": "0"
   },
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

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2.1.1.4.11 Interface for Querying Recommended Information on NFS Share Creation

Function

This interface is used to query recommended information on NFS share creation.

URL

https://${ip}:${port}/api/v2/smartgui/nfsshare/${vstoreId}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
filesystem	Mandatory	string	File system.
accessval	Mandatory	string	Permission. **The value is described as follows:** 0: read-only 1: read/write
type	Mandatory	string	Client type. **The value is described as follows:** 0: host 1: network group
ENABLESHOWSNAPSHOT	Mandatory	bool	Whether to enable the snapshot function. **The value is described as follows:** true: enabled false: disabled

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Example

- Querying recommended information on NFS share creation.

```
Request: GET /api/v2/smartgui/nfsshare/0

Response: {
   "data": {
      "ENABLESHOWSNAPSHOT": "true",
      "accessval": "0",
      "filesystem": "/fs",
      "type": "0"
   },
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

2.1.1.4.12 Interface for Querying SmartGUI Service Status

Function

This interface is used to query SmartGUI service status.

URL

https://${ip}:${port}/api/v2/smartgui/switchstate

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
status	Mandatory	string	SmartGUI service status. **The value is described as follows:** 0: disabled. 1: enabled.

Example

- Querying SmartGUI service status.

```
Request: GET /api/v2/smartgui/switchstate
Response:
{
```

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```
  "data": {
     "status": "0"
  },
  "result": {
     "code": 0,
     "description": "",
     "suggestion": ""
  }
}
```

2.1.1.4.13 Interface for Querying the Equipment Status

Function

This interface is used to query the equipment status.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/server/status

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
status	Mandatory	enum	Equipment status. **The value is described as follows:** 0: Normal 1: Abnormal 2: Powering on 3: Powering off 4: Security Mode 5: Upgrading 6: Power supply failing 7: Offline
description	Mandatory	string	description.

Example

- Querying the equipment status.

```
Request: GET /deviceManager/rest/210235843710E7000007/server/status
```

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```
Response:
    "data": {
        "description": "",
        "status": 0
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.4.14 Interface for Querying the Equipment Time Zone

Function

This interface is used to query the equipment time zone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system_timezone

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SYS_TIME_ZONE	Mandatory	string	Time zone.
CMO_SYS_TIME_ZONE_NAME	Mandatory	string	Time zone name.
CMO_SYS_TIME_ZONE_NAME_STYLE	Mandatory	string(uint32)	Display style of the time zone name. **The value is described as follows:** 0: short name (three letters) 1: long name
CMO_SYS_TIME_ZONE_USE_DST	Mandatory	string(uint32)	Whether the time zone uses the DST. **The value is described as follows:** 0: not used 1: used

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Example

- Querying the equipment time zone.

```
Request: GET /deviceManager/rest/210235843710E7000007/system_timezone

Response:
{
   "data": {
      "CMO_SYS_TIME_ZONE": "+08:00",
      "CMO_SYS_TIME_ZONE_NAME": "Asia/Shanghai",
      "CMO_SYS_TIME_ZONE_NAME_STYLE": "1",
      "CMO_SYS_TIME_ZONE_USE_DST": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.1.4.15 Interface for Querying the Equipment UTC Time

Function

This interface is used to query the equipment UTC time.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/system_utc_time

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SYS_UTC_TIME	Mandatory	string	Equipment UTC time. **The value is described as follows:** 946656000 to 3000000000.

Example

- Querying the equipment UTC time.

```
Request: GET /deviceManager/rest/210235843710E7000007/system_utc_time

Response:
{
   "data": {
```

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```
        "CMO_SYS_UTC_TIME": "1478179247"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.4.16 Interface for Querying the LLDP Working Mode

Function

Query the LLDP working mode.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LLDP_WORKING_MODE

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
lldpWorkingMode	Mandatory	enum	LLDP working mode. **The value is described as follows:** 0: neither sending nor receiving packets; 1: only sending packets; 2: only receiving packets; 3: both sending and receiving packets;

Example

- Querying the LLDP working mode.

```
Request: GET /deviceManager/rest/210235020020041400001/LLDP_WORKING_MODE

Response: {
    "data": {
        "lldpWorkingMode": "3"
    },
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.1.1.4.17 Interface for Querying the SmartFix Alarm Object List

Function

Query the SmartFix alarm object list.

URL

https://${ip}:${port}/api/v2/smartgui/smartfixalarm

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
data	Mandatory	array	List of SmartFix alarm objects. **The value is described as follows:** Decimal ID of the parsed alarm.

Example

- Query the SmartFix alarm object list.

```
Request: GET /api/v2/smartgui/smartfixalarm

Response:
{
  "data": [
    "64438665539",
    "64438665540",
    "64438665538",
    "64438665497",
    "64438665504",
    "64438665553",
    "4040687618",
    "4040687617",
    "64438075513",
    "64438075528",
    "64438075514",
    "64462524423",
    "64425230609",
```

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```
        "64425165063",
        "64425165089",
        "17432578",
        "64441942118"
    ],
    "result": {
        "code": 0,
        "description": "",
        "suggestion": ""
    }
}
```

2.1.1.5 Others

2.1.1.5.1 Interface for Collecting Requests Forwarded by Nginx

Function

This interface is used to collect requests forwarded by Nginx.

URL

https://${ip}:${port}/api/v2/smartgui/forwardinfo

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
url	Mandatory	string	URL for Nginx to forward requests.
method	Mandatory	string	Method used by Nginx to forward requests. **The value is described as follows:** "POST": POST request. "GET": GET request. "PUT": PUT request. "DELETE": DELETE request.
body	Mandatory	json	Body of the request forwarded by Nginx.
header	Mandatory	json	Header of the request forwarded by Nginx.

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Result

N/A

Example

- Collecting requests forwarded by Nginx.

```
Request：POST/api/v2/smartgui/forwardinfo
{
   'url': '/deviceManager/rest/1234567890SNCDE12345/lun?t=1590567841104',
   'method': 'POST',
   'body': '
   {
      "ALLOCTYPE": 1,
      "PARENTID": "2",
      "PARENTTYPE": 216,
      "DESCRIPTION": "",
      "WRITEPOLICY": 1,
      "CAPACITY": 209715200,
      "WORKLOADTYPEID": "0",
      "NAME": "a"
   }',
   'header': {
      'ibasetoken': '6045748930E073E291D1664A331DA4C73EE977664F5927424BFAF5F0372AEFEA',
      'accept': 'application/json,
      text/plain,
      */*',
      'need-backend-auth': 'true',
      'host': '127.0.0.1: 8088',
      'sec-fetch-dest': 'empty',
      'sec-fetch-site': 'same-origin',
      'accept-language': 'zh',
      'content-type': 'application/json;charset=UTF-8',
      'connection': 'keep-alive',
      'content-length': '133',
      'cache-control': 'no-cache',
      'pragma': 'no-cache',
      'origin': 'https: //127.0.0.1: 8088',
      'cookie':
'session=ismsession=601F602AA6D0BC89FF01CA818342F299194A87780A105840ABB24E50D0F2F183;_
_IBASE_TOKEN__=6045748930E073E291D1664A331DA4C73EE977664F5927424BFAF5F0372AEFEA;__D
EVICE_ID__=1234567890SNCDE12345;userIdleTime=5000',
      'accept-encoding': 'gzip,
      deflate,
      br',
      'sec-fetch-mode': 'cors',
      'user-agent': 'Mozilla/5.0(WindowsNT10.0;Win64;x64)AppleWebKit/537.36(KHTML,
      likeGecko)Chrome/81.0.4044.138Safari/537.36'
   }
}

Response:
{
   'data': {},
   'result': {
      'code': 0,
      'description': ''
   }
}
```

2.1.1.5.2 Interface for Powering Off Equipment

Function

Power off the device.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SYSTEM/POWEROFF

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
IMPORTANTPSW	Mandatory	string	Super administrator password. **Note:**When this parameter is delivered and the command is executed successfully, the system changes the current session ID. If a RESTful request is delivered using the old session ID, error code 1073793621 is returned, indicating that the session is invalid.

Result

N/A

Example

- Power off the device.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SYSTEM/POWEROFF
{
   "IMPORTANTPSW": "Admin@123"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.1.5.3 Interface for Restarting Equipment

Function

Restart the device.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SYSTEM/REBOOT

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
IMPORTANTPSW	Mandatory	string	Password of the login user. **Note:**When this parameter is delivered and the command is executed successfully, the system changes the current session ID. If a RESTful request is delivered using the old session ID, error code 1073793621 is returned, indicating that the session is invalid.

Result

N/A

Example

- Restart the device.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SYSTEM/REBOOT
{
    "IMPORTANTPSW": "Admin@123"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.5.4 Interface for Setting NTP Server

Function

This interface is used to set automatic NTP synchronization.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ntp_client_config

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYS_NTP_CLNT_CONF_SWITCH	Mandatory	uint32	NTP service status. **The value is described as follows:** 0: Disabled 1: Enabled
CMO_SYS_NTP_CLNT_CONF_SERVER_IP	Conditional	string	NTP server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~511 **Note:**A maximum of two addresses can be configured for an NTP server. The addresses are separated by commas (,). Each address contains a maximum of 255 characters.When the NTP service is set as enabled, this parameter must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYS_NTP_SYNC_PERIOD	Optional	uint32	Synchronization period. **The value is described as follows:** 60~864000 **Default:**60 **Note:**This parameter has been deprecated, NTP synchronizes the time automatically.
CMO_SYS_NTP_CLNT_CONF_AUTH_SWITCH	Optional	enum	NTP authentication status. **The value is described as follows:** 0: Disabled 1: Enabled **Note:**The NTP version needs to be NTPv4 (included) or later.

Result

N/A

Example

- Setting automatic NTP synchronization.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ntp_client_config
{
    "CMO_SYS_NTP_CLNT_CONF_SERVER_IP": "10.169.2.1,10.169.60.22",
    "CMO_SYS_NTP_CLNT_CONF_SWITCH": "1",
    "CMO_SYS_NTP_SYNC_PERIOD": "7200"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.1.5.5 Interface for Testing NTP Server Address

Function

This interface is used to Testing NTP server address.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/check_ntp_server_address_connective

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYS_NTP_CLNT_CONF_SERVER_IP	Mandatory	string	NTP Server Address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~255

Result

N/A

Example

- Testing NTP server address.

```
Request: PUT /deviceManager/rest/210235843910E6000009/check_ntp_server_address_connective
{
    "CMO_SYS_NTP_CLNT_CONF_SERVER_IP": "10.169.2.1"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.1.2 dns_server

2.1.2.1 Add

2.1.2.2 Delete

2.1.2.3 Modify

2.1.2.3.1 Interface for Modifying DNS Services

Function

This interface is used to modify DNS services.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_server

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ADDRESS	Mandatory	string(array)	DNS server address list. **The value is described as follows:** Three IPv4 or IPv6 addresses are supported.

Result

N/A

Example

- Modifying DNS services.

```
Request: PUT /deviceManager/rest/210235843710E7000007/dns_server
{
   "ADDRESS": "[\"129.0.0.11\",\"129.0.0.12\"]"
```

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```
}

Response:
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.2.4 Query

2.1.2.4.1 Interface for Querying DNS Services

Function

This interface is used to query DNS services.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DNS_Server

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TENANCYID	Mandatory	string	vStore ID. **Note:**This field has been discarded.
ADDRESS	Mandatory	string(array)	DNS server address list. **The value is described as follows:** Three IPv4 or IPv6 addresses are supported.
TYPE	Mandatory	enum	Type number of the object. **The value is described as follows:** 260: DNS server

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Example

- Querying DNS services.

```
Request: GET /deviceManager/rest/210235843710E7000007/DNS_Server

Response:
{
   "data": {
      "ADDRESS": "[\"6.6.6.6\"]",
      "TENANCYID": "0",
      "TYPE": 260
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.2.5 Others

2.1.2.5.1 Interface for Testing the DNS Server Address

Function

This interface is used to test the DNS server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/check_basicdns_server_address_connective

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ADDRESS	Mandatory	string(array)	DNS server address. **Note:**Only one IP address is supported at a time.

Result

N/A

Example

- Testing the DNS server address.

```
Request: PUT /deviceManager/rest/210235843710E7000007/check_basicdns_server_address_connective
{
```

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```
    "ADDRESS":"[\"129.0.0.11\"]"
}

Response:
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.3 base

2.1.3.1 Add

2.1.3.2 Delete

2.1.3.3 Modify

2.1.3.4 Query

2.1.3.4.1 Interface for Batch Querying vStore Information

Function

This interface is used to batch query vStore information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, and RUNNINGSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16442: vStore.
ID	Mandatory	string	vStore ID. **The value is described as follows:** The value ranges from 0 to 1023.
NAME	Mandatory	string	vStore name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal. 53: initializing.
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value consists of a maximum of 255 characters.
fileSystemCount	Mandatory	uint32	File system quantity.
lunCount	Mandatory	uint32	LUN quantity.
mappedLunCount	Mandatory	uint32	Quantity of mapped LUNs.
unmappedLunCount	Mandatory	uint32	Quantity of unmapped LUNs.
auditLogStrategyEnabled	Mandatory	bool	Whether the audit log policy is configured. **The value is described as follows:** false: No true: Yes
metroCount	Mandatory	uint32	Number of vStore pairs to which the current vStore is added. **The value is described as follows:** 0 or 1.
RMCOUNT	Mandatory	uint32	Number of remote replication vStore pairs to which the current vStore is added. **The value is described as follows:** 0..65536

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Parameter	Mandatory/ Conditional	Type	Description
nasCapacityQuota	Mandatory	uint64	Capacity quota of the NAS. **The value is described as follows:** 1: The value ranges from 2097152 to 1844674407370955161 4. 2: The value 0 indicates that there is no quota limit. **Unit:**Sector
nasFreeCapacityQuota	Mandatory	uint64	Remaining capacity quota of the NAS. **The value is described as follows:** The value ranges from 0 to 1844674407370955161 4. **Unit:**Sector **Note:**-1 indicates an invalid value.

Example

- Batch querying vStore information.

```
Request: GET /deviceManager/rest/210235843710E7000007/vstore?range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "0",
         "RUNNINGSTATUS": "1",
         "auditLogStrategyEnabled": false,
         "fileSystemCount": "0",
         "lunCount": "0",
         "mappedLunCount": "0",
         "unmappedLunCount": "0",
         "NAME": "System_vStore",
         "TYPE": 16442,
         "metroCount": "0",
         "RMCOUNT": "1",
         "nasCapacityQuota": "419430400",
         "nasFreeCapacityQuota": "419430400"
      },
      {
         "DESCRIPTION": "",
         "ID": "1",
         "RUNNINGSTATUS": "1",
         "auditLogStrategyEnabled": false,
```

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```
            "fileSystemCount": "0",
            "lunCount": "0",
            "mappedLunCount": "0",
            "unmappedLunCount": "0",
            "NAME": "ppp",
            "TYPE": 16442,
            "metroCount": "0",
            "RMCOUNT": "1",
            "nasCapacityQuota": "419430400",
            "nasFreeCapacityQuota": "419430400"
        },
        {
            "DESCRIPTION": "",
            "ID": "2",
            "RUNNINGSTATUS": "1",
            "auditLogStrategyEnabled": false,
            "fileSystemCount": "0",
            "lunCount": "0",
            "mappedLunCount": "0",
            "unmappedLunCount": "0",
            "NAME": "wangshuo",
            "TYPE": 16442,
            "metroCount": "0",
            "RMCOUNT": "1",
            "nasCapacityQuota": "419430400",
            "nasFreeCapacityQuota": "419430400"
        },
        {
            "DESCRIPTION": "",
            "ID": "3",
            "RUNNINGSTATUS": "1",
            "auditLogStrategyEnabled": false,
            "fileSystemCount": "0",
            "lunCount": "0",
            "mappedLunCount": "0",
            "unmappedLunCount": "0",
            "NAME": "wangshuo1",
            "TYPE": 16442,
            "metroCount": "0",
            "RMCOUNT": "1",
            "nasCapacityQuota": "419430400",
            "nasFreeCapacityQuota": "419430400"
        },
        {
            "DESCRIPTION": "",
            "ID": "4",
            "RUNNINGSTATUS": "1",
            "auditLogStrategyEnabled": false,
            "fileSystemCount": "0",
            "lunCount": "0",
            "mappedLunCount": "0",
            "unmappedLunCount": "0",
            "NAME": "lll",
            "TYPE": 16442,
            "metroCount": "0",
            "RMCOUNT": "1",
            "nasCapacityQuota": "419430400",
            "nasFreeCapacityQuota": "419430400"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.3.4.2 Interface for Querying Effective Capacity Information

Function

This interface is used to query basic information about effective capacity.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/effective_capacity_info/{id}

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
totalEffectiveCapacity	Mandatory	uint64	Total effective capacity. **Unit:**sectors
usedEffectiveCapacity	Mandatory	uint64	Used effective capacity. **Unit:**sectors
freeEffectiveCapacity	Mandatory	uint64	Remaining effective capacity. **Unit:**sectors
insufficientThreshold	Mandatory	uint32	Insufficient capacity threshold. **The value is described as follows:** 1..95
usedUpThreshold	Mandatory	uint32	Capacity used up threshold. **The value is described as follows:** 2..99
leftDays	Mandatory	uint32	Number of remaining days. **The value is described as follows:** 0..999

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Parameter	Mandatory/ Conditional	Type	Description
lunUsedEffectiveCapacity	Mandatory	uint64	Used effective capacity of the LUN.
fsUsedEffectiveCapacity	Mandatory	uint64	Used effective capacity of the file system.
usedCapPercentage	Mandatory	uint32	Percentage of used effective capacity. **The value is described as follows:** 0..100

Example

- Querying basic information about effective capacity.

```
Request: GET/deviceManager/rest/210235843710E7000007/effective_capacity_info

Response: {
   "data": {
      "totalEffectiveCapacity": "5552603136",
      "usedEffectiveCapacity": "0",
      "lunUsedEffectiveCapacity": "0",
      "fsUsedEffectiveCapacity": "0",
      "freeEffectiveCapacity": "5552603136",
      "insufficientThreshold": "4294967295",
      "usedUpThreshold": "4294967295",
      "leftDays": "4294967295",
      "usedCapPercentage": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.3.4.3 Interface for Querying Information About Global Search Objects in Batches

Function

This interface is used to query information about global search objects in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/global_search

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Optional	string	LUN name, host name, LUN group name, host group name, port group name, file system name, recycle bin object name, and logical port name. **The value is described as follows:** The value can contain any characters.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string(uint32)	ID

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Parameter	Mandatory/ Conditional	Type	Description
precisionType	Mandatory	string	Precise object type. **The value is described as follows:** Lower camel case name, which contains uppercase letters, lowercase letters, and underscores (_). The value can be "lun", "vvolLun", and "lunGroup".
name	Mandatory	string	Name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023.
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-).

Example

- Querying information about global search objects in batches.

```
Request: GET /deviceManager/rest/ST000000000000000109/global_search?name=004

Response: {
   "data": [
      {
         "id": "3",
         "name": "004filetest",
         "precisionType": "fileSystems",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
```

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```
            "id": "102",
            "name": "004LUN1030000",
            "precisionType": "lun",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "id": "0",
            "name": "004LUN1030001",
            "precisionType": "recycleBin",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "id": "104",
            "name": "004LUN1030002",
            "precisionType": "lun",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "id": "2",
            "name": "file004",
            "precisionType": "fileSystems",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.1.3.4.4 Interface for Querying the List of Features that Are Not Supported by the System

Function

This interface is used to query the list of features that are not supported by the system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_disable_feature_list/0

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
DISABLESUPPORTFEATURELIST	Mandatory	string(array)	List of features that are not supported by the system. **The value is described as follows:** 624: back-end SAS port 625: PCIe back-end port 626: PCIe scale-out 627: driver queue depth

Example

- Query the list of features that are not supported by the system.

```
Request: GET /deviceManager/rest/210235843710E7000007/get_disable_feature_list/0

Response: {
   "data": [
      {
         "DISABLESUPPORTFEATURELIST": "[624]"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.3.4.5 Interface for Querying User Login Information

Function

This interface is used to query user login information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/server/loginInfo

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
roleId	Mandatory	string	Role ID.
deviceid	Mandatory	string	Device ID.
levelgrouptype	Mandatory	enum	Level group type. **The value is described as follows:** 0: all groups 1: system group
usergroup	Mandatory	string	User group.
userid	Mandatory	string	User ID.
username	Mandatory	string	User name.
userscope	Mandatory	enum	User type. **The value is described as follows:** 0: local user 1: LDAP user 2: LDAP user group 7: SSO user 8: RADIUS user
commandauthmode	Mandatory	enum	Indicates the command authentication mode of the current device. **The value is described as follows:** 0: compatibility mode 1: security mode
vstoreId	Conditional	string	vStore ID. **Note:**This parameter is included in the command output if the login user is a vStore user.
vstoreName	Conditional	string	vStore name. **Note:**This parameter is included in the command output if the login user is a vStore user.

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Example

- Querying user login information.

```
Request: GET /deviceManager/rest/1016964156/server/loginInfo

Response: {
   "data": {
      "commandauthmode": 0,
      "deviceid": "1016964156",
      "levelgrouptype": 1,
      "roleId": "1",
      "usergroup": "",
      "userid": "admin",
      "username": "admin",
      "userscope": 0,
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.3.5 Others

2.1.3.5.1 get system first poweron time

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SYSTEM/get_system_first_poweron_time

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
firstPoweronTime	Mandatory	int64	Time when the system is powered on for the first time. **The value is described as follows:** An integer of 64 digits
id	Mandatory	string	Object ID of the system information. **The value is described as follows:** 0

Application Scope

For internal use by R&D engineers.

Example

- Query the time when the system is powered on for the first time.

```
Request: GET /deviceManager/rest/xxxx/system/get_system_first_poweron_time

Response:
{
    "data": {
        "ID": "0",
        "firstPoweronTime": "1612403916"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.4 storage_engine

2.1.4.1 Add

2.1.4.2 Delete

2.1.4.3 Modify

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2.1.4.4 Query

2.1.4.5 Others

2.1.4.5.1 Interface for Obtaining Container Node Information

Function

This interface is used to obtain node information of the container service.

URL

https://${ip}:${port}/api/v2/task/containerNode

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	Node ID.
node	Mandatory	string	Node name.
serviceStatus	Mandatory	string	Status of the container service on the node.
cpuCount	Mandatory	string	Number of CPU cores.
memory	Mandatory	int	Memory size.
frontEndModuleIdList	Mandatory	array	Front-end interface module.
backEndModuleIdList	Mandatory	array	Back-end interface module.
localImageRepository-LUNName	Mandatory	string	LUN name of the local image repository.
localImageRepository-LUNId	Mandatory	string	LUN ID of the local image repository.
localImageRepository-TotalCapacity	Mandatory	string	Total capacity of the local image repository.

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Parameter	Mandatory/ Conditional	Type	Description
localImageRepository-yUsedCapacity	Mandatory	string	Used capacity of the local image repository.

Example

- Obtaining node information of the container service.

```
Request: GET /api/v2/task/containerNode

Response:
{
   "data": [
      {
         "id": "0A",
         "node": "0A",
         "serviceStatus": "Running",
         "localImageRepositoryLUNName": "localImageLun",
         "localImageRepositoryLUNId: "01",
         "localImageRepositoryTotalCapacity": "1024",
         "localImageRepositoryUsedCapacity": "1024"
         "cpuCount": "4",
         "memory": 3355432,
         "frontEndModuleIdList": [],
         "backEndModuleIdList": []
      }
   ],
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   }
}
```

2.1.4.5.2 Interface for Obtaining Container Service Information

Function

This interface is used to obtain container service information.

URL

https://${ip}:${port}/api/v2/task/containerService

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
Enabled	Mandatory	bool	Whether the container service is activated. **The value is described as follows:** True: activated False: not activated
GlobalImageRepositoryLUNId	Mandatory	string	LUN ID of the global image repository.
GlobalImageRepositoryLUNName	Mandatory	string	Name of the global image repository.
GlobalImageRepositoryTotalCapacity	Mandatory	string	Total capacity of the global image repository.
GlobalImageRepositoryUsedCapacity	Mandatory	string	Used capacity of the global image repository.
DeployedNodeList	Mandatory	array	List of IDs of deployed nodes.
UndeployedNodeList	Mandatory	array	ID list of nodes that are not deployed.
StoragePool	Mandatory	array	Storage pool list.

Example

- Obtaining container service information.

```
Request: GET /api/v2/task/containerService

Response:
{
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "Enabled": True,
      "GlobalImageRepositoryLUNId": "0",
      "GlobalImageRepositoryLUNName": "globalImageLunIwKPMz94",
      "GlobalImageRepositoryTotalCapacity": "419430400",
      "GlobalImageRepositoryUsedCapacity": "13648",
      "DeployedNodeList": ["0A", "0B"],
      "UndeployedNodeList": [],
      "StoragePool": []
   }
}
```

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2.1.4.5.3 Interface for Obtaining Information About Nodes to Be Added to the Container Service

Function

This interface is used to obtain information about nodes to be added to the container service.

URL

https://${ip}:${port}/api/v2/task/containerNode/expandableNodes

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	Node ID.
node	Mandatory	string	Node name.
serviceStatus	Mandatory	string	Status of the container service on the node.
cpuCount	Mandatory	string	Number of CPU cores.
memory	Mandatory	int	Memory size.
frontEndModuleIdList	Mandatory	array	Front-end interface module.
backEndModuleIdList	Mandatory	array	Back-end interface module.
parentID	Mandatory	string	Enclosure ID.
parentType	Mandatory	int	Type number of the parent object. **The value is described as follows:** 206: enclosure

Example

- Obtaining information about nodes to be added to the container service.

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```
Request: GET /api/v2/task/containerNode/expandableNodes

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": [
      {
         "id": "0A",
         "node": "A",
         "parentID": "0",
         "parentType": 206,
         "frontEndModuleIdList": [

         ],
         "backEndModuleIdList": [

         ],
         "cpuCount": "4",
         "memory": 33554432,
         "serviceStatus": "NotDeployed"
      }
   ]
}
```

2.1.4.5.4 Interface for Obtaining Information About Nodes Where the Container Service Can Be Deployed

Function

This interface is used to obtain information about nodes where the container service can be deployed.

URL

https://${ip}:${port}/api/v2/task/containerNode/deployableNodes

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	Node ID.
node	Mandatory	string	Node name.
serviceStatus	Mandatory	string	Status of the container service on the node.

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Parameter	Mandatory/ Conditional	Type	Description
cpuCount	Mandatory	string	Number of CPU cores.
memory	Mandatory	int	Memory size.
frontEndModuleIdList	Mandatory	array	Front-end interface module.
backEndModuleIdList	Mandatory	array	Back-end interface module.
parentID	Mandatory	string	Enclosure ID.
parentType	Mandatory	int	Type number of the parent object. **The value is described as follows:** 206: enclosure

Example

- Obtaining information about nodes where the container service can be deployed.

```
Request: GET /api/v2/task/containerNode/deployableNodes

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": [
      {
         "id": "0A",
         "node": "A",
         "parentID": "0",
         "parentType": 206,
         "frontEndModuleIdList": [

         ],
         "backEndModuleIdList": [

         ],
         "cpuCount": "8",
         "memory": 33554432,
         "serviceStatus": "NotDeployed"
      }
   ]
}
```

2.1.5 domain

2.1.5.1 Add

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2.1.5.2 Delete

2.1.5.2.1 Interface for Deleting NAS DNS Service Settings

Function

This interface is used to delete NAS DNS service settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nas_dns_config

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Deleting NAS DNS service settings.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/nas_dns_config
{

}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.3 Modify

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2.1.5.3.1 Interface for Modifying AD Domain Settings

Function

This interface is used to modify AD domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AD_CONFIG

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DOMAINSTATUS	Conditional	enum	Domain status. **The value is described as follows:** 0: exits the domain. 1: joins in the domain. **Note:**N/A.
ADMINNAME	Conditional	string	User name used to log in to the domain. **Length:**1~63 **Note:**When the user joins or exits the domain, fields ADMINNAME, ADMINPWD, and DOMAINSTATUS must be delivered concurrently.
ADMINPWD	Conditional	string	Password used to log in to the domain. **Length:**1~127 **Note:**N/A.
FULLDOMAINNAME	Optional	string	Full domain name. **Length:**1~127
OU	Optional	string	Organization unit. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYSTEMNAME	Optional	string	Name of the storage array added to the domain. **The value is described as follows:** The name contains 1 to 15 characters, and cannot contain @#*()=+[]|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. **Length:**1~15
SITENAME	Optional	string	Name of the site added to the domain. **The value is described as follows:** The name can contain case-sensitive letters, digits, and hyphens (-). Spaces, periods (.), and Chinese characters are not recommended. The name cannot be digits only. **Length:**1~255
ISENABLEOVERWRITE-SAMEACCOUNT	Optional	bool	Whether to overwrite the machine-machine account. **The value is described as follows:** true: overwrite false: not to overwrite **Note:**The default value is "false".

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEREFRESHDNS	Optional	bool	Whether to dynamically update the storage service IP address on the DNS server. **The value is described as follows:** true: enables the function. false: disables the function. **Note:**The default value is "true".
REFRESHDNSPERIOD	Optional	uint32	Interval for updating the storage service IP address of the DNS server. **Note:**The value ranges from 0 to 2592000 and the default value is 86400.
CONSISTENTSWITCH	Optional	uint32	Protocol consistency option switch. **The value is described as follows:** The value is an integer ranging from 0 to 4294967295.
SESSIONWITHTHRES-HOLD	Optional	uint32	If the delay of a session exceeds the value of this parameter, the session is switched. **The value is described as follows:** 1-10000.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

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Example

- Modifying AD domain settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/AD_CONFIG
{
   "DOMAINSTATUS": 1,
   "ADMINNAME": "admin",
   "ADMINPWD": "admin@123",
   "FULLDOMAINNAME": "auth2k12.com",
   "OU": "",
   "SYSTEMNAME": "LINUX",
   "SITENAME": "sitename",
   "ISENABLEOVERWRITESAMEACCOUNT": false,
   "ENABLEREFRESHDNS": true,
   "REFRESHDNSPERIOD": 86400
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.3.2 Interface for Modifying Advanced Settings of the LDAP Domain

Function

This interface is used to modify advanced settings of the LDAP domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAS_LDAP_SCHEMA_CONFIG

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
POSIXACCOUNTOBJECTCLASS	Optional	string	RFC2307 user object. **Default:**posixAccount **Length:**0~1024
POSIXGROUPOBJECT-CLASS	Optional	string	RFC2307 user group object. **Default:**posixGroup **Length:**0~1024

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Parameter	Mandatory/Optional/Conditional	Type	Description
NISNETGROUPOBJECTCLASS	Optional	string	RFC2307 netgroup object. **Default:**nisNetgroup **Length:**0~1024
UIDATTRIBUTE	Optional	string	RFC2307 uid attribute. **Default:**uid **Length:**0~1024
UIDNUMBERATTRIBUTE	Optional	string	RFC2307 uidNumber attribute. **Default:**gidNumber **Length:**0~1024
GIDNUMBERATTRIBUTE	Optional	string	RFC2307 gidNumber attribute. **Default:**gidNumber **Length:**0~1024
CNFORGROUPSATTRI-BUTE	Optional	string	RFC2307 CN attribute for the user group. **Default:**cn **Length:**0~1024
CNFORNETGROUPSATTRIBUTE	Optional	string	RFC2307 CN attribute for the netgroup. **Default:**cn **Length:**0~1024
MEMBERUIDATTRIBUTE	Optional	string	RFC2307 memberUid attribute. **Default:**memberUid **Length:**0~1024
MEMBERNISNETGROUPATTRIBUTE	Optional	string	RFC2307 memberNisNetgroup attribute. **Default:**memberNisNetgroup **Length:**0~1024

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Parameter	Mandatory/Optional/Conditional	Type	Description
NISNETGROUPTRIPLEATTRIBUTE	Optional	string	RFC2307 nisNetgroupTriple attribute. **Default:**nisNetgroupTriple **Length:**0~1024
ENABLERFC2307BIS	Optional	bool	Whether RFC2307bis is supported. **The value is described as follows:** false: not supported true: supported **Default:**false
GROUPOFUNIQUENAMESOBJECTCLASS	Optional	string	RFC2307 groupOfUniqueNames object. **Default:**groupOfUniqueNames **Length:**0~1024
UNIQUEMEMBERATTRIBUTE	Optional	string	RFC2307 uniqueMember object. **Default:**uniqueMember **Length:**0~1024
SCHEMATYPE	Optional	enum	LDAP schema template. **The value is described as follows:** The value can be "RFC2307" or "AD_IDMU", where: 1:"RFC2307":The schema template of LDAP is RFC2307. 2:"AD_IDMU":The schema template of LDAP is AD_IDMU.

Result

N/A

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Example

- Modifying advanced settings of the LDAP domain.

```
Request: PUT /deviceManager/rest/2102350BSE10G4000057/SNAS_LDAP_SCHEMA_CONFIG
{
 "CNFORGROUPSATTRIBUTE": "cn1",
 "CNFORNETGROUPSATTRIBUTE": "name1",
 "GIDNUMBERATTRIBUTE": "gidNumber1",
 "MEMBERNISNETGROUPATTRIBUTE": "memberNisNetgroup1",
 "MEMBERUIDATTRIBUTE": "memberUid1",
 "NISNETGROUPOBJECTCLASS": "nisNetgroup1",
 "NISNETGROUPTRIPLEATTRIBUTE": "nisNetgroupTriple1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.3.3 Interface for Modifying LDAP Domain Settings

Function

This interface is used to modify LDAP domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAP_CONFIG

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LDAPSERVER	Mandatory	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses are separated by commas (,). A maximum of three IP addresses are supported. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
PORTNUM	Mandatory	uint32	LDAP listening port number. **Note:**The default value is 389 for LDAP and 636 for LDAPS.
TRANSFERTYPE	Mandatory	enum	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS **Default:**2: LDAPS
BASEDN	Mandatory	string	Base DN. **Length:**1~1024
USERNAME	Optional	string	User name for logging in to the domain. **Length:**1~1024 **Note:**If no user is selected, the anonymous user is bound by default.
GROUPSUFFIX	Optional	string	Search criteria of the group. **Length:**0~1024 **Note:**If the search criteria are not configured, the search starts from the root directory.
PASSWORD	Conditional	string	Password for logging in to the domain. **Length:**1~63 **Note:**If the user name has been configured, the password must be configured.

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Parameter	Mandatory/Optional/Conditional	Type	Description
USERSUFFIX	Optional	string	Search criteria of users. **Length:**0~1024 **Note:**If the search criteria are not configured, the search starts from the root directory.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.
IDLETIMELIMIT	Optional	uint32	Timeout length that the client is disconnected when the LDAP connection is free. **Length:**0~2147483647 **Note:**If the timeout length is not configured, the length is 30 seconds by default.
BINDTIMELIMIT	Optional	uint32	Timeout length that the client establishes a connection with a service end. **Length:**1~2147483647 **Note:**If the timeout length is not configured, the length is 3 seconds by default.
TIMELIMIT	Optional	uint32	Timeout length that the client waits for the service end to return the query result. **Length:**0~2147483647 **Note:**If the timeout length is not configured, the length is 3 seconds by default.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BINDLEVEL	Optional	enum	Minimum level of binding between the client and server. **The value is described as follows:** 1: SIMPLE 2: SASL **Default:**1: SIMPLE
GROUPSCOPE	Optional	enum	Range of group query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE **Default:**1: SUBTREE
BINDUSINGADCRED	Optional	bool	Whether to use the AD domain account binding server. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled
USERSCOPE	Optional	enum	Range of user query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE **Default:**1: SUBTREE
NETGROUPDN	Optional	string	Netgroup DN. **Length:**0~1024 **Note:**If the search criteria are not configured, the search starts from the root directory.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NETGROUPSCOPE	Optional	enum	Range of netgroup query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE **Default:**1: SUBTREE
PASSWORDHASH	Optional	string(enum)	Password encryption mode. **The value is described as follows:** 1: clear 2: md5 3: crypt
SHADOWSUFFIX	Optional	string	Search criteria of passwords. **Note:**If the search criteria are not configured, the search starts from the root directory.
CLIENTSESSIONSE-CURITY	Optional	string(enum)	Security level of LDAP client signing. **The value is described as follows:** 0: none 1: sign 2: seal

Result

N/A

Example

- Modifying LDAP domain settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/LDAP_CONFIG
{
 "LDAPSERVER": "192.168.1.100",
 "PORTNUM": 636,
 "TRANSFERTYPE": "2",
 "USERNAME": "as=as",
 "PASSWORD": "Admin@123",
 "USERSUFFIX": "a",
```

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```
 "GROUPSUFFIX": "b",
 "BASEDN": "ad=ad",
 "CLIENTSESSIONSECURITY": "2"
}

Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.3.4 Interface for Modifying NAS DNS Service Settings

Function

Modify NAS DNS server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nas_dns_config

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ADDRESS	Mandatory	array	IP address of the DNS server. **The value is described as follows:** IPv4 or IPv6 addresses are supported. **Note:**A maximum of three IP addresses can be configured.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
domains	Optional	string	DNS domain name. **Note:** The value is a domain name list which contains a maximum of six domain names separated by commas (,), for example, "domain1,domain2,domain3,domain4,domain5,domain6". Each domain name contains 1 to 255 characters and must be unique. A domain name has the following rules: 1. The domain name is case-insensitive. 2. The domain name contains only letters, digits, periods (.), underscores (_), and hyphens (-). Each label separated by periods (.) must start or end with a letter or digit. 3. Each label separated by periods (.) contains a maximum of 63 characters.

Result

N/A

Example

- Modify NAS DNS server settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/nas_dns_config
{
    "ADDRESS": "[\"10.10.10.4\",\"10.10.10.5\",\"10.10.10.6\"]",
    "domains":"domain1,domain2"
}

Response: {
    "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modify NAS DNS server settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/nas_dns_config
{
    "ADDRESS": "[\"10.10.10.4\",\"10.10.10.5\",\"10.10.10.6\"]"
    "domains": "domain1,domain2"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.3.5 Interface for Modifying NIS Domain Settings

Function

This interface is used to modify NIS domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NIS_CONFIG

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NISDOMAIN	Mandatory	string	Full domain name. **Length:**1~63
NISSERVERADDR	Mandatory	array	Server IP addresses. **The value is described as follows:** Server IP addresses are separated by commas (,). A maximum of three IP addresses are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore name. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Modifying NIS domain settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/NIS_CONFIG
{
   "NISDOMAIN": "testNIS",
   "NISSERVERADDR": "[\"1.2.3.3\",\"\",\"\"]"
}

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.4 Query

2.1.5.4.1 Interface for Querying AD Domain Settings

Function

This interface is used to query AD domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AD_CONFIG

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
DOMAINSTATUS	Mandatory	string(enum)	Domain status. **The value is described as follows:** 0: exited the domain. 1: joined in the domain. 2: exiting the domain. 3: joining the domain. 4: failed to join in the domain.
FULLDOMAINNAME	Conditional	string	Full domain name. **Note:**The value is returned in scenarios other than the initialization scenario.
OU	Mandatory	string	Organization unit.

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Parameter	Mandatory/ Conditional	Type	Description
SYSTEMNAME	Conditional	string	Name of the storage array added to the domain. **The value is described as follows:** The name contains 1 to 15 characters, and cannot contain @#*()= +[]|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. **Note:**The value is returned in scenarios other than the initialization scenario.
SITENAME	Mandatory	string	Name of the site added to the domain. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
JOINDOMAINERROR-CODE	Mandatory	string(enum)	Domain join failure. **The value is described as follows:** 0: success 1: The domain FQDN is invalid. 2: The domain administrator account is not configured. 3: The domain management password is not configured. 4: The system name is invalid. 5: The time gap between the node and domain controller is too large. 6: The domain controller cannot be located. 7: The domain administrator account or password is incorrect. 8: The protocol module has an internal error. 9: The machine account name is not unique. 10: The KDC service cannot be connected. 11: The domain account has no permission to add the domain. 12: The organization unit does not exist. 13: The administrator information is incorrect or the administrator has

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Parameter	Mandatory/ Conditional	Type	Description
			been added to too many domain groups. 14: Failed to update the machine account. 15: The machine account name is duplicate. 16: The original system name remains in the AD domain. You are advised to log in to the AD domain controller to manually clear the name.
ENABLEREFRESHDNS	Mandatory	bool	Whether to dynamically update the storage service IP address on the DNS server. **Note:**The default value is "true".
REFRESHDNSPERIOD	Mandatory	uint32	Interval for updating the storage service IP address of the DNS server. **Note:**The value ranges from 0 to 2592000 and the default value is 86400.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
CONSISTENTSWITCH	Mandatory	uint32	Protocol consistency option switch. **The value is described as follows:** The value is an integer ranging from 0 to 4294967295.
SESSIONWITHTHRES-HOLD	Mandatory	uint32	If the delay of a session exceeds the value of this parameter, the session is switched. **The value is described as follows:** 1-10000. **Unit:**ms

Example

- Querying AD domain settings.

```
Request: GET /deviceManager/rest/210235843710E7000007/AD_CONFIG

Response: {
   "data": {
      "DOMAINSTATUS": 1,
      "FULLDOMAINNAME": "auth2k12.com",
      "OU": "",
      "SYSTEMNAME": "LINUX",
      "SITENAME": "",
      "JOINDOMAINERRORCODE": "",
      "vstoreId": "0",
      "ENABLEREFRESHDNS": true,
      "REFRESHDNSPERIOD": "86400",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.4.2 Interface for Querying Advanced Settings of the LDAP Domain

Function

This interface is used to query advanced settings of the LDAP domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAS_LDAP_SCHEMA_CONFIG

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
SCHEMATYPE	Optional	enum	LDAP schema template. **The value is described as follows:** The value can be "RFC2307" or "AD_IDMU", where: 1:"RFC2307":The schema template of LDAP is RFC2307. 2:"AD_IDMU":The schema template of LDAP is AD_IDMU.

Result

Parameter	Mandatory/Conditional	Type	Description
POSIXACCOUNTOBJECTCLASS	Mandatory	string	RFC2307 user object.
POSIXGROUPOBJECT-CLASS	Mandatory	string	RFC2307 user group object.
NISNETGROUPOBJECTCLASS	Mandatory	string	RFC2307 netgroup object.
UIDATTRIBUTE	Mandatory	string	RFC2307 uid attribute.
UIDNUMBERATTRIBUTE	Mandatory	string	RFC2307 uidNumber attribute.
GIDNUMBERATTRIBUTE	Mandatory	string	RFC2307 gidNumber attribute.
CNFORGROUPSATTRI-BUTE	Mandatory	string	RFC2307 CN attribute for the user group.

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Parameter	Mandatory/ Conditional	Type	Description
CNFORNETGROUPSATTRIBUTE	Mandatory	string	RFC2307 CN attribute for the netgroup.
MEMBERUIDATTRIBUTE	Mandatory	string	RFC2307 memberUid attribute.
MEMBERNISNETGROUPATTRIBUTE	Mandatory	string	RFC2307 memberNisNetgroup attribute.
NISNETGROUPTRIPLEATTRIBUTE	Mandatory	string	RFC2307 nisNetgroupTriple attribute.
ENABLERFC2307BIS	Mandatory	string(bool)	Whether RFC2307bis is supported. **The value is described as follows:** false: not supported true: supported
GROUPOFUNIQUENA-MESOBJECTCLASS	Mandatory	string	RFC2307 groupOfUniqueNames object.
UNIQUEMEMBERATTRIBUTE	Mandatory	string	RFC2307 uniqueMember object.

Example

- This interface is used to query advanced settings of the LDAP domain.

```
Request: GET /deviceManager/rest/210235843710E7000007/SNAS_LDAP_SCHEMA_CONFIG

Response:
{
   "data": {
       "CNFORGROUPSATTRIBUTE": "cn",
       "CNFORNETGROUPSATTRIBUTE": "cn",
       "ENABLERFC2307BIS": "false",
       "GIDNUMBERATTRIBUTE": "gidNumber",
       "GROUPOFUNIQUENAMESOBJECTCLASS": "groupOfUniqueNames",
       "MEMBERNISNETGROUPATTRIBUTE": "memberNisNetgroup",
       "MEMBERUIDATTRIBUTE": "memberUid",
       "NISNETGROUPOBJECTCLASS": "nisNetgroup",
       "NISNETGROUPTRIPLEATTRIBUTE": "memNisNetgroupTriple",
       "POSIXACCOUNTOBJECTCLASS": "posixAccount",
       "POSIXGROUPOBJECTCLASS": "posixGroup",
       "UIDATTRIBUTE": "uid",
       "UIDNUMBERATTRIBUTE": "uidNumber",
       "UNIQUEMEMBERATTRIBUTE": "uniqueMember"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.1.5.4.3 Interface for Querying an AD Domain User

Function

This interface is used to query an AD domain user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AD_SOURCE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	AD domain user ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	AD domain user ID.
NAME	Mandatory	string	AD domain user name.
accountType	Mandatory	uint32	AD domain user type. **The value is described as follows:** 0: user 1: user group
accountId	Mandatory	string	UID or GID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

Example

- Querying an AD domain user.

```
Request: GET /deviceManager/rest/210235843910E6000009/AD_SOURCE/
S-1-5-21-958976781-1401430433-314257735-1140

Response:
{
   "data": {
      "COMPRESSVALID": "false",
      "accountType": "0",
      "accountId": "60001140",
      "NAME": "AUTH2K8\gaoshanqin",
      "ID": "S-1-5-21-958976781-1401430433-314257735-1140"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.4.4 Interface for Querying an IP Address by Host Name

Function

This interface is used to query an IP address by host name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUERY_IP_BY_HOSTNAME

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
vstoreId		string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
HOSTNAME	Mandatory	string	Host name. **Length:**1-256

Result

Parameter	Mandatory/Conditional	Type	Description
HOSTNAME	Mandatory		Host name.
IP	Mandatory		Returns the IP address under specified conditions.

Example

- Querying an IP address by host name.

```
Request: GET /deviceManager/rest/${deviceId}/QUERY_IP_BY_HOSTNAME?HOSTNAME=test.com

Response: {
    "data": {
        "HOSTNAME": "test.com",
        "IP": "127.0.0.1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.4.5 Interface for Querying LDAP Domain Settings

Function

This interface is used to query LDAP domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAP_CONFIG

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
BASEDN	Mandatory	string	Base DN.
BINDTIMELIMIT	Mandatory	string(uint32)	Timeout length that the client establishes a connection with a service end. **Note:**If the timeout length is not configured, the length is three seconds by default.
USERSCOPE	Mandatory	string(enum)	Range of user query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE
BINDUSINGADCRED	Mandatory	string(bool)	Whether to use the AD domain account binding server. **The value is described as follows:** true: enabled false: disabled **Note:**If this parameter is not set, the default value false is used.

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Parameter	Mandatory/ Conditional	Type	Description
BINDLEVEL	Mandatory	string(enum)	Minimum level of binding between the client and server. **The value is described as follows:** 1: SIMPLE 2: SASL
GROUPSUFFIX	Mandatory	string	Group search criteria. **Note:**If the search criteria are not configured, the search starts from the root directory.
IDLETIMELIMIT	Mandatory	string(uint32)	Timeout length that the client is disconnected when the LDAP connection is free. **Note:**If the timeout length is not configured, the length is 30 seconds by default.
LDAPSERVER	Mandatory	string	Server IP addresses. **The value is described as follows:** A maximum of three IP addresses can be entered and they are separated by commas (,).
PORTNUM	Mandatory	string(uint32)	LDAP listening port number.
SHADOWSUFFIX	Mandatory	string	Search criteria of passwords. **Note:**If the search criteria are not configured, the search starts from the root directory.

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Parameter	Mandatory/ Conditional	Type	Description
TIMELIMIT	Mandatory	string(uint32)	Timeout length that the client waits for the service end to return the query result. **Note:**If the timeout length is not configured, the length is three seconds by default.
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
USERNAME	Mandatory	string	Username used to log in to the domain.
USERSUFFIX	Mandatory	string	Search criteria of users. **Note:**If the search criteria are not configured, the search starts from the root directory.
PASSWORDHASH	Mandatory	string(enum)	Password encryption mode. **The value is described as follows:** 0: The current system is not added to the LDAP domain. 1: clear 2: md5 3: crypt
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.
GROUPSCOPE	Mandatory		Range of group query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE
NETGROUPDN	Mandatory	string	Netgroup DN. **Note:**If the search criteria are not configured, the search starts from the root directory.
NETGROUPSCOPE	Mandatory	string(enum)	Range of netgroup query. **The value is described as follows:** 1: SUBTREE 2: ONELEVEL 3: BASE
CLIENTSESSIONSE-CURITY	Mandatory	string(enum)	Security level of LDAP client signing. **The value is described as follows:** 0: none 1: sign 2: seal

Example

- Querying LDAP domain settings.

```
Request: GET /deviceManager/rest/210235843710E7000007/LDAP_CONFIG

Response:
 {
    "data": {
        "BASEDN": "",
        "BINDLEVEL": "1",
        "BINDTIMELIMIT": "3",
        "BINDUSINGADCRED": "false",
        "GROUPSCOPE": "1",
        "GROUPSUFFIX": "",
```

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```
        "IDLETIMELIMIT": "30",
        "LDAPSERVER": "",
        “NETGROUPDN": "",
        ”NETGROUPSCOPE": "1",
        “PASSWORDHASH": "",
        ”PORTNUM": "",
        “SHADOWSUFFIX": "",
        ”TIMELIMIT": "3",
        “TRANSFERTYPE": "",
        "USERNAME": "",
        "USERSCOPE": "1",
        "USERSUFFIX": "",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "CLIENTSESSIONSECURITY": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.1.5.4.6 Interface for Querying LDAP/NIS Group Information

Function

This interface is used to query basic information about a LDAP/NIS group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DOMAIN_RESGROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	ID of the domain user group. **Note:**ID of the domain user group. Either "name" or "id" must be specified.
name	Conditional	string	Name of the domain user group. **Note:**Domain user group name. Either "name" or "id" must be specified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
domainType	Mandatory	string(enum)	Domain controller type. **The value is described as follows:** 0: LDAP 1: NIS

Result

Parameter	Mandatory/Conditional	Type	Description
domainType	Conditional	string(enum)	Domain controller type. **The value is described as follows:** 0: LDAP 1: NIS
groupName	Conditional	string	Name of the domain user group.
groupId	Conditional	string	ID of the domain user group.

Example

- Querying basic information about an LDAP group by name.

```
Request: GET /deviceManager/rest/210235843910E6000009/DOMAIN_RESGROUP?
domainType=0&name=test

Response: {
   "data": {
      "domainType": "LDAP",
      "groupName": "test",
      "groupId": "9999"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.4.7 Interface for Querying LDAP/NIS User Information

Function

This interface is used to query basic information about an LDAP/NIS user.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DOMAIN_RESUSER

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	Domain user ID. **Note:**Domain user ID. Either "name" or "id" must be specified.
name	Conditional	string	Domain user name. **Note:**Domain user name. Either "name" or "id" must be specified.
domainType	Mandatory	string(enum)	Domain controller type. **The value is described as follows:** 0: LDAP 1: NIS
isNeedQueryGroup	Optional	bool	Whether to query the user group corresponding to the user. **The value is described as follows:** 1: queries the user group. 0: does not query the user group. **Default:**1: queries the user group.

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Result

Parameter	Mandatory/ Conditional	Type	Description
domainType	Conditional	string(enum)	Domain controller type. **The value is described as follows:** 0: LDAP 1: NIS
userName	Conditional	string	Domain user name.
userId	Conditional	string	Domain user ID.
groupName	Conditional	string	Name of the domain user group.
groupId	Conditional	string	ID of the domain user group.
otherGroupId	Conditional	string	List of domain user group IDs.

Example

- Querying basic information about an LDAP domain user by name.

```
Request: GET /deviceManager/rest/210235843910E6000009/DOMAIN_RESUSER?
domainType=0&name=user1

Response: {
    "data": {
        "domainType": "LDAP",
        "userName": "user1",
        "userId": "100006",
        "groupName": "Administrators(primary)",
        "groupId": "9999",
        "otherGroupId": "[\"10000\",\"10001\"]"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.4.8 Interface for Querying NAS DNS Service Settings

Function

This interface is used to query NAS DNS server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nas_dns_config

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ADDRESS	Mandatory	string(array)	IP address of the DNS server.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.
domains	Mandatory	string	DNS domain name. **Note:**This parameter must be returned in vStore scenarios.

Example

- Querying NAS DNS server settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/nas_dns_config?vstoreId=1

Response:
{
   "data": {
      "ADDRESS": "[\"10.169.99.174\",\"10.10.10.10\",\"10.10.10.11\"]",
      "vstoreId": "1",
      "vstoreName": "vStore001",
      "domains": "domain1,domain2"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.1.5.4.9 Interface for Querying NIS Domain Settings

Function

This interface is used to query NIS domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NIS_CONFIG

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
NISDOMAIN	Mandatory	string	Full domain name.
NISSERVERADDR	Mandatory	string(array)	Server IP addresses. **The value is described as follows:** Server IP addresses are separated by commas (,). A maximum of three IP addresses are supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

Example

- Querying NIS domain settings.

```
Request: GET /deviceManager/rest/210235843710E7000007/NIS_CONFIG

Response: {
    "data": {
        "NISDOMAIN": "testNIS",
        "NISSERVERADDR": "[\"1.2.3.3\",\"\",\"\"]",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.5 Others

2.1.5.5.1 Interface for Initializing Advanced Settings of the LDAP Domain

Function

This interface is used to initialize advanced settings of the LDAP domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAS_LDAP_SCHEMA_CONFIG

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Initializing advanced settings of the LDAP domain.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/SNAS_LDAP_SCHEMA_CONFIG

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.5.2 Interface for Initializing LDAP Domain Settings

Function

This interface is used to initialize LDAP domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAP_CONFIG

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

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Result

N/A

Example

- Initializing LDAP domain settings.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/LDAP_CONFIG

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.5.5.3 Interface for Initializing NIS Domain Settings

Function

This interface is used to initialize NIS domain settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NIS_CONFIG

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Initializing NIS domain settings.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/NIS_CONFIG

Response:
{
   "data": { },
   "error": {
```

```
    "code": 0,
    "description": "0"
  }
}
```

2.1.5.5.4 Interface for Testing the conectivity to the NAS DNS Server

Function

This interface is used to test the connectivity to the NAS DNS server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/check_nas_dns_address_connective

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ADDRESS	Mandatory	array	IP address of the DNS server.
controller	Optional	string	Controller ID. **The value is described as follows:** The value format is XA, XB, XC, or XD, where X is an integer ranging from 0 to 15. You can run the "show controller general" command to obtain the value. **Length:**2-3
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

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Example

- Testing the connectivity to the DNS server.

```
Request: PUT /deviceManager/rest/210235843910E6000009/check_nas_dns_address_connective
{
    "ADDRESS": "[\"10.3.6.5\"]",
    "vstoreId": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.5.5 Interface for Testing the Connectivity to the NAS DNS Server

Function

This interface is used to test the connectivity to the NAS DNS server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/check_nas_dns_address_connective

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ADDRESS	Mandatory	array	IP address of the DNS server.
controller	Optional	string	Controller ID. **The value is described as follows:** The value format is XA, XB, XC, or XD, where X is an integer ranging from 0 to 15. You can run the "show controller general" command to obtain the value. **Length:**2-3

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Testing the connectivity to the NAS DNS server.

```
Request: PUT /deviceManager/rest/210235843910E6000009/check_nas_dns_address_connective
{
    "ADDRESS": "[\"10.3.6.5\"]",
    "vstoreId": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.5.6 Interface for Testing the Full Domain Name of the AD Domain

Function

This interface is used to test the full domain name of the AD domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/testadserver

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
FULLDOMAINNAME	Conditional	string	Full domain name. **Length:**1~127 **Note:**N/A.

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Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Optional	string	Controller ID. **The value is described as follows:** The value format is XA, XB, XC, or XD, where X is an integer ranging from 0 to 15. You can run the "show controller general" command to obtain the value. **Length:**2-3
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Testing the full domain name of the AD domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/testadserver
{
    "FULLDOMAINNAME": "mo.com"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.5.5.7 Interface for Testing the IP Address of the LDAP Domain Server

Function

This interface is used to test the IP address of the LDAP domain server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/testldapserver

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LDAPSERVER	Mandatory	string	Client IP address or host name. **The value is described as follows:** The host name must meet the following requirements: 1. The value contains 1 to 255 letters, digits, hyphens (-), periods (.), and underscores (_). 2. The value must start with a letter or digit and cannot end with an underscore (_) or hyphen (-). 3. The value cannot contain consecutive periods (.), pure digits, or a period (.) before or after an underscore (_), for example, '_.' or '._'. The IP address must meet the following requirements: 1. You can enter a single client IP address. 2. You can enter IPv4, IPv6, or their mixed IP addresses. For example, 192.168.0.10. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
PORTNUM	Optional	uint32	Listening port number of the LDAP service. **The value is described as follows:** The value is an integer ranging from 1 to 65535. The default LDAP port number is 389, and the default LDAPS port number is 636. **Length:**1~65535
controller	Optional	string	Controller ID. **The value is described as follows:** The value format is XA, XB, XC, or XD, where X is an integer ranging from 0 to 15. You can run the "show controller general" command to obtain the value. **Length:**2-3
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

N/A

Example

- Testing the IP address of the LDAP domain server.

```
Request: PUT /deviceManager/rest/210235843910E6000009/testldapserver
{
    "LDAPSERVER": "10.169.20.12"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.1.5.5.8 Interface for Testing the IP Address of the NIS Domain Server

Function

This interface is used to test the IP address of the NIS domain server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/testnisserver

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NISSERVERADDR	Mandatory	array	Host name or client IP address. **The value is described as follows:** The host name must meet the following requirements: 1. The value contains 1 to 255 letters, digits, hyphens (-), periods (.), and underscores (_). 2. The value must start with a letter or digit and cannot end with an underscore (_) or hyphen (-). 3. The value cannot contain consecutive periods (.), pure digits, or a period (.) before or after an underscore (_), for example, '_.' or '._'. The IP address must meet the following requirements: 1. You can enter a single client IP address. 2. You can enter IPv4 addresses. For example, 192.168.0.10. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Optional	string	Controller ID. **The value is described as follows:** The value format is XA, XB, XC, or XD, where X is an integer ranging from 0 to 15. You can run the "show controller general" command to obtain the value. **Length:**2-3
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Testing the IP address of the NIS domain server.

```
Request: PUT /deviceManager/rest/210235843910E6000009/testnisserver
{
    "NISSERVERADDR": "[\"10.169.20.12\"]"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.6 cifs_service

2.1.6.1 Add

2.1.6.2 Delete

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2.1.6.3 Modify

2.1.6.3.1 Interface for Modifying CIFS Service Settings

Function

This interface is used to modify CIFS service settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsservice

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEABSE	Optional	bool	Whether to enable the ABSE. **The value is described as follows:** true: enabled false: disabled
ENABLENOTIFY	Optional	bool	Whether to enable the Notify. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEOPLOCK	Optional	bool	Whether to enable the oplock. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
GUESTENABLE	Optional	bool	Whether to enable the guest access. **The value is described as follows:** true: enabled false: disabled
RUNNINGSTATUS	Optional	enum	Running status. **The value is described as follows:** 2: running 3: stopped **Note:**This field is not supported temporarily.
SECURITYMODEL	Optional	enum	Authentication mode. **The value is described as follows:** 1: local authentication 2: domain authentication 3: local authentication + domain authentication
SIGNINGENABLE	Optional	bool	Whether to enable the signature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
SIGNINGREQUIRED	Optional	bool	Whether to enable the enforcing signature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.
OPLOCKTIMEOUT	Optional	uint32	Optimized lock timeout interval. **The value is described as follows:** 5 to 60 **Note:**This field is not supported temporarily.
RC4HMACENABLE	Optional	bool	Whether to support the RC4-HMAC algorithm. **The value is described as follows:** true: enabled false: disabled
enableSMB2ForDCConnections	Optional	bool	Whether to enable the connection between SMB2 and the domain controller. **The value is described as follows:** true: enabled false: disabled
SMBGLOBALCAENABLE	Optional	bool	Whether to enable SMB service continuity. **The value is described as follows:** true: enabled false: disabled **Default:**Close
smb3EncryptionEnable	Optional	bool	Whether to enable SMB3 encryption. **The value is described as follows:** true: on false: off

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Parameter	Mandatory/Optional/Conditional	Type	Description
unencryptedAccess	Optional	bool	Whether to allow non-encrypted clients to access the server. **The value is described as follows:** true: on false: off
smbEaSwitch	Optional	string(bool)	Whether to enable the SMB EA extended attribute function. **The value is described as follows:** true: on false: off
signingFailCloseConnectionEnable	Optional	string(bool)	Whether to disable the connection function when the signature fails. **The value is described as follows:** true: on false: off
smbSparseFileEnable	Optional	bool	Whether sparse files are supported. **The value is described as follows:** The value can be "true" or "false", where: 1:"true": Sparse files are supported. 2:"false": Sparse files are not supported. The default value is "false". **Default:**No
shortnameEnable	Optional	bool	Whether to enable the short name. **The value is described as follows:** Value range: true and false. **Default:**no

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Parameter	Mandatory/Optional/Conditional	Type	Description
enableSMBSelfHealing	Optional	bool	Indicates whether to set self-healing upon resource exceptions. **The value is described as follows:** The value can be true or false. **Default:**No
smbAdsLockOnAdsEnable	Optional	bool	Indicates whether to add the ADS lock to the ADS file. **The value is described as follows:** The value can be yes or no. **Default:**Yes

Result

N/A

Example

- Modifying CIFS service settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/cifsservice
{
   "RUNNINGSTATUS": 3,
   "ENABLEABSE": false,
   "SECURITYMODEL": "2",
   "GUESTENABLE": false,
   "SIGNINGREQUIRED": true,
   "SIGNINGENABLE": false,
   "ENABLEOPLOCK": false,
   "OPLOCKTIMEOUT": "35",
   "ENABLENOTIFY": false,
   "enableSMB2ForDCConnections": false,
   "RC4HMACENABLE": true,
   "SMBGLOBALCAENABLE":true,
   "smb3EncryptionEnable":"0",
   "unencryptedAccess":"0",
   "smbEaEnable":true,
   "signingFailCloseConnectionEnable":false,
   "smbSparseFileEnable":false,
   "shortnameEnable":false,
   "enableSMBSelfHealing":false,
   "smbAdsLockOnAdsEnable":true
}

Response: {
   "data": {

   },
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.1.6.4 Query

2.1.6.4.1 Interface for Querying CIFS Service Settings

Function

This interface is used to query CIFS service settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsservice

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ENABLEABSE	Mandatory	string(bool)	Whether to enable the ABSE. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ENABLENOTIFY	Mandatory	string(bool)	Whether to enable the Notify. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEOPLOCK	Mandatory	string(bool)	Whether to enable the oplock. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
GUESTENABLE	Mandatory	string(bool)	Whether to enable the guest access. **The value is described as follows:** true: enabled false: disabled
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 2: running 3: stopped **Note:**This field is not supported temporarily.
SECURITYMODEL	Mandatory	string(enum)	Authentication mode. **The value is described as follows:** 1: local authentication 2: domain authentication 3: local authentication + domain authentication

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Parameter	Mandatory/ Conditional	Type	Description
SIGNINGENABLE	Mandatory	string(bool)	Whether to enable the signature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
SIGNINGREQUIRED	Mandatory	string(bool)	Whether to enable the enforcing signature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
vstoreId	Conditional	string(int)	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.
USETCPONLY	Mandatory	string(bool)	Using TCP only. **Note:**This field is not supported temporarily.
CHARSET	Mandatory	string(enum)	Character set encoding. **Note:**This field is not supported temporarily.
ANONYMOUSENABLE	Mandatory	string(bool)	Enabling anonymous access. **Note:**This field is not supported temporarily.
OPLOCKTIMEOUT	Mandatory	string(uint32)	Optimized lock timeout interval. **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
RC4HMACENABLE	Mandatory	string(bool)	Whether to support the RC4-HMAC algorithm. **The value is described as follows:** true: enabled false: disabled
enableSMB2ForDCConnections	Mandatory	bool	Whether to enable the connection between SMB2 and the domain controller. **The value is described as follows:** true: enabled false: disabled
SMBGLOBALCAENABLE	Mandatory	bool	Whether to enable SMB service continuity. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Mandatory	bool	Specifies whether to enable SMB3 encryption. **The value is described as follows:** true: on false: off
unencryptedAccess	Mandatory	bool	Whether to allow non-encrypted clients to access the server. **The value is described as follows:** true: on false: off

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Parameter	Mandatory/ Conditional	Type	Description
smbEaEnable	Mandatory	string(bool)	Whether to enable the SMB EA extended attribute function. **The value is described as follows:** true: on false: off
signingFailCloseConnectionEnable	Mandatory	string(bool)	Whether to disable the connection function when the signature fails. **The value is described as follows:** true: on false: off
smbSparseFileEnable	Mandatory	bool	Whether sparse files are supported. **The value is described as follows:** The value can be "true" or "false", where: 1:"true": Sparse files are supported. 2:"false": Sparse files are not supported. The default value is "false".
shortnameEnable	Mandatory	bool	Whether to enable the short name. **The value is described as follows:** Value range: true and false.
enableSMBSelfHealing	Mandatory	bool	Indicates whether to set self-healing upon resource exceptions. **The value is described as follows:** The value can be true or false.

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Parameter	Mandatory/ Conditional	Type	Description
smbAdsLockOnAdsEnable	Mandatory	bool	Indicates whether to add the ADS lock to the ADS file. **The value is described as follows:** The value can be yes or no.

Example

- Querying CIFS service settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/cifsservice

Response: {
   "data": {
      "RUNNINGSTATUS": "2",
      "SECURITYMODEL": "3",
      "GUESTENABLE": "false",
      "SIGNINGREQUIRED": "true",
      "SIGNINGENABLE": "false",
      "ENABLEOPLOCK": "false",
      "OPLOCKTIMEOUT": "35",
      "ANONYMOUSENABLE": "false",
      "ENABLENOTIFY": "false",
      "enableDH": "false",
      "DHTimeout": "60",
      "smb1Enable": "false",
      "smb2Enable": "true",
      "ENABLEABSE": "false",
      "CHARSET": "1",
      "USETCPONLY": "true",
      "defaultDirMode": "755",
      "defaultFileMode": "744",
      "shortnameEnable": "false",
      "NotifyResponseQPS": "0",
      "gnsFsSize": "17179869184",
      "gnsForward": "false",
      "enableSMB2ForDCConnections": "false",
      "leasev2Enable": "false",
      "enableSMB1ForLinux": "false",
      "maxSessionDisplay": "0",
      "maxOpenFilesDisplay": "0",
      "symlinkEnable": "false",
      "domainNameConfigurableEnable": "false",
      "IOTraceEnable": "false",
      "sessionSecurityForADLDAP": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore",
      "RC4HMACENABLE": "false",
      "SMBGLOBALCAENABLE": true,
      "smb3EncryptionEnable": "0",
      "unencryptedAccess": "0",
      "smbEaEnable": "true",
      "signingFailCloseConnectionEnable": "false",
      "smbSparseFileEnable": "false",
      "enableSMBSelfHealing": "false",
      "smbAdsLockOnAdsEnable": "true"
   },
   "error": {
      "code": 0,
```

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```
        "description": "0"
    }
}
```

2.1.6.5 Others

2.1.7 nfs_service

2.1.7.1 Add

2.1.7.2 Delete

2.1.7.3 Modify

2.1.7.3.1 Interface for Modifying NFS Service Settings

Function

This interface is used to modify NFS service settings.

HighRisk

You are about to disable the NFSv3/NFSv4/NFSv4.1 service. This operation causes the NFSv3/NFSv4/NFSv4.1 sharing service provided by the storage device unavailable.

Suggestion: Before performing this operation, ensure that the NFSv3/NFSv4/NFSv4.1 sharing service is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nfsservice

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SUPPORTV3	Optional	bool	Whether to enable the NFSv3 service. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
SUPPORTV4	Optional	bool	Whether to enable the NFSv4 service. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled
SUPPORTV41	Optional	bool	Whether to enable the NFSv4.1 service. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled
NFSV4DOMAIN	Optional	string	NFSv4 service domain name. **The value is described as follows:** The value cannot be empty and can contain a maximum of 255 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). **Default:**localdomain **Length:**1~255 **Range:**^[0-9a-zA-Z-_.]{1,255}

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Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Optional	enum	Type number of the managed object. **The value is described as follows:** 16452: NFSSERVICE **Default:**16452
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Modifying NFS service settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/nfsservice
{
   "SUPPORTV3": false
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.7.3.2 Interface for Modifying NFS Showmount Switch

Function

This interface is used to modify the NFS showmount switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nfs_showmount_switch

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
showMountSwitch	Optional	bool	NFS showmount switch. **The value is described as follows:** true. false. **Default:**true

Result

N/A

Example

- Modifying the NFS showmount switch.

```
Request: PUT /deviceManager/rest/210235843910E6000009/nfs_showmount_switch
{
    "showMountSwitch": false
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.7.4 Query

2.1.7.4.1 Interface for Querying NFS Service Settings

Function

This interface is used to query NFS service settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nfsservice

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
SUPPORTV3	Mandatory	string(bool)	Whether to enable the NFSv3 service. **The value is described as follows:** true: enabled false: disabled
SUPPORTV4	Mandatory	string(bool)	Whether to enable the NFSv4 service. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
SUPPORTV41	Mandatory	string(bool)	Whether to enable the NFSv4.1 service. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
NFSV4DOMAIN	Mandatory	string	NFSv4 service domain name. **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in vStore scenarios. 2. This field is not supported temporarily.
CHARACTERENCODINGLIST	Mandatory	string(array)	Character encoding list that is supported. **Note:**This field is not supported temporarily.
CHARSET	Mandatory	string(enum)	Character set encoding. **Note:**This field is not supported temporarily.
ONLYROOTCHOWN	Mandatory	string(bool)	Whether only user root is allowed to run the "chown" command. **Note:**This field is not supported temporarily.
PORT	Mandatory	string(uint32)	Listening port for mounting NFS. **Note:**This field is not supported temporarily.
RUNNINGSTATUS	Mandatory	string(enum)	Running status.
USERESERVEDPORTS	Mandatory	string(bool)	Whether only ports whose number is less than or equal to 1024 are allowed to mount clients. **Note:**This field is not supported temporarily.

Example

- Querying NFS service settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/nfsservice

Response: {
   "data": {
      "SUPPORTV3": "true",
      "SUPPORTV4": "false",
      "SUPPORTV41": "false",
```

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```
        "NFSV4DOMAIN": "test",
        "vstoreId": "0",
        "vstoreName": "user",
        "CHARACTERENCODINGLIST": [
            "0"
        ],
        "CHARSET": "0",
        "ONLYROOTCHOWN": "true",
        "PORT": "6589",
        "RUNNINGSTATUS": "0",
        "USERESERVEDPORTS": "true"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.7.4.2 Interface for Querying the NFS Showmount Switch

Function

This interface is used to query information about the NFS showmount switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nfs_showmount_switch

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
showMountSwitch	Mandatory	bool	NFS showmount switch. **The value is described as follows:** true. false.

Example

- Querying the NFS showmount switch.

```
Request: GET /deviceManager/rest/210235843910E6000009/nfs_showmount_switch

Response:
{
    "data": {
```

```
        "showMountSwitch": true
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.7.5 Others

2.1.7.5.1 Interface for Clearing the NFS Export Cache

Function

This interface is used to clear the NFS export cache based on the vStore ID and client IP address entered by the user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_EXPORT_CACHE

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID.
clientIp	Optional	string	Client IP address. **The value is described as follows:** IP address, for example: 10.10.0.10. **Length:**63

Result

N/A

Example

- Clearing the NFS export cache based on the vStore ID and client IP address entered by the user.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/NFS_EXPORT_CACHE

Response: {
    "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.8 ndmp_service

2.1.8.1 Add

2.1.8.2 Delete

2.1.8.3 Modify

2.1.8.3.1 Interface for Modifying NDMP Service Settings

Function

This interface is used to modify the NDMP service.

HighRisk

You are about to disable the NDMP service. This operation causes the NDMP service provided by the storage device unavailable. Suggestion: Before performing this operation, ensure that the NDMP service is no longer needed.
You are about to modify the monitoring port. 1. This operation will automatically restart the NDMP service and interrupt the NDMP service of all tenants. 2. After the configuration takes effect, the NDMP service of some tenants will be unavailable.
If HyperMetro is used, ensure that the clock sources of the primary and secondary sites are the same.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ndmpservice

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
isEnabled	Optional	bool	Whether to enable the NDMP service. **The value is described as follows:** true: yes false: no
ip	Optional	string	IPv4 and IPv6 addresses. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** An IPv4 address consists of four 8-bit unsigned integers, each of which ranges from 0 to 255. An IPv6 address consists of eight 16-bit unsigned integers, each of which is represented by four hexadecimal digits. **Note:**This parameter is not delivered in vStore scenarios.
writeThreshold	Optional	uint32	Write threshold. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** 0~100 **Default:**95 **Note:**This parameter is not delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
username	Optional	string	User name. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** 1. The value contains 6 to 31 characters. 2. The value cannot contain spaces and \/\ \[]<>+:;,?*|=@, and cannot end with a period (.).
oldPasswd	Conditional	string	Old password. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** 1. The password contains 8 to 32 characters. 2. The password must contain at least two types of the following: uppercase letters, lowercase letters, and digits, and must contain a special character, including `~!@#$%^&*()-_=+|[{}];\:\"\'\<\,.\\\>\/? and spaces. **Note:**This parameter is mandatory when you change the user name or password.

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Parameter	Mandatory/Optional/Conditional	Type	Description
password	Conditional	string	New password. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** 1. The password contains 8 to 32 characters. 2. The password must contain at least two types of the following: uppercase letters, lowercase letters, and digits, and must contain a special character, including `~!@#$%^&*()-_=+|[{}];\:\'"\'\<\,.\\\>\/? and spaces. **Note:**This parameter is mandatory when you change the password.
port	Conditional	uint32	Listening port. **The value is described as follows:** 10000 to 10032. **Default:**10000 **Note:**This parameter is not delivered in vStore scenarios.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** The value is a positive integer. **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.

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Result

N/A

Example

- Modifying the NDMP service settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ndmpservice
{
    "isEnabled": true,
    "port": "10001"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.8.3.2 (Not Recommended)Interface for Modifying NDMP Service Settings

Function

Modify the NDMP service.

HighRisk

You are about to disable the NDMP service. This operation causes the NDMP service provided by the storage device unavailable. Suggestion: Before performing this operation, ensure that the NDMP service is no longer needed.
You are about to modify the monitoring port. 1. This operation will automatically restart the NDMP service and interrupt the NDMP service of all tenants. 2. After the configuration takes effect, the NDMP service of some tenants will be unavailable.
If HyperMetro is used, ensure that the clock sources of the primary and secondary sites are the same.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ndmpservice

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
isEnabled	Optional	bool	Whether to enable the NDMP service. **The value is described as follows:** true: yes false: no
ip	Optional	string	IPv4 and IPv6 addresses. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **Note:**This parameter is not delivered in vStore scenarios.
writeThrehold	Optional	uint32	Write threshold. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 0~100 **Default:**95 **Note:**This parameter is not delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
username	Optional	string	User name. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 1. The value contains 6 to 31 characters. 2. The value cannot contain spaces and \/\ \[]<>+:;,?*|=@, and cannot end with a period (.).
oldPasswd	Conditional	string	Old password. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 1. The password contains 8 to 32 characters. 2. The password must contain at least two types of the following: uppercase letters, lowercase letters, and digits, and must contain a special character, including `~!@#$%^&*()-_=+|[{}];\:\"\'\<\,.\\\>\/? and spaces. **Note:**This parameter is mandatory when you change the user name or password.

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Parameter	Mandatory/Optional/Conditional	Type	Description
password	Conditional	string	New password. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 1. The password contains 8 to 32 characters. 2. The password must contain at least two types of the following: uppercase letters, lowercase letters, and digits, and must contain a special character, including `~!@#$%^&*()-_=+|[{}];\:\"\'\<\,.\\\>\/? and spaces. **Note:**This parameter is mandatory when you change a password.
port	Conditional	uint32	Listening port. **The value is described as follows:** 10000 to 10032. **Default:**10000 **Note:**This parameter is not delivered in vStore scenarios.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

N/A

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Example

- Modifying the NDMP service settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ndmpservice
{
    "isEnabled": true,
    "port": "10001"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.8.4 Query

2.1.8.4.1 Interface for Querying NDMP Service Settings

Function

This interface is used to query the NDMP service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NDMPService

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** Positive integer. **Length:**16 **Note:**This parameter must be delivered in the vStore scenario.

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Result

Parameter	Mandatory/ Conditional	Type	Description
isEnabled	Mandatory	string(bool)	Whether to enable the NDMP service. **The value is described as follows:** true: yes false: no
ip	Conditional	string	IPv4 and IPv6 addresses. [NOTE:This parameter is not supported in this version, and the execution result is invalid.]
isPwdExpired	Conditional	string(bool)	Indicates whether the password expires. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** true: expired false: not expired
port	Conditional	string(int)	Listening port. **The value is described as follows:** 10000 to 10032.
username	Conditional	string	User name. [NOTE:This parameter is not supported in this version, and the execution result is invalid.]
version	Mandatory	string	Version number.

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Parameter	Mandatory/ Conditional	Type	Description
writeThreshold	Conditional	string(int)	Write threshold. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** 0~100
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This parameter must be returned in vStore scenarios.
ignoreCTime	Mandatory	string(bool)	Whether to ignore the modification time. **The value is described as follows:** true: yes false: no
isSupportSnapshot	Mandatory	string(bool)	Whether snapshots are supported. [NOTE:This parameter is not supported in this version, and the execution result is invalid.] **The value is described as follows:** true: yes false: no
logLevel	Mandatory	string(int)	Log level. **The value is described as follows:** 1: emergent 2: error 3: warning 4: info 5: debug

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Example

- Querying the NDMP service.

```
Request: GET /deviceManager/rest/2102358439l0E6000009/NDMPService

Response: {
   "data": {
      "ignoreCTime": "false",
      "ip": "--",
      "isEnabled": "true",
      "isPwdExpired": "false",
      "isSupportSnapshot": "false",
      "port": "10000",
      "username": "--",
      "version": "V4",
      "writeThreshold": "--",
      "logLevel": "4"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.8.4.2 (Not Recommended)Interface for Querying NDMP Service Settings

Function

Query the NDMP service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NDMPService

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID. **Note:**This parameter must be delivered in vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
isEnabled	Mandatory	string(bool)	Whether to enable the NDMP service. **The value is described as follows:** true: yes false: no
ip	Conditional	string	IPv4 and IPv6 addresses. [NOTE:This parameter is not supported by the current version. The execution result is invalid.]
isPwdExpired	Conditional	string(bool)	Whether the password has expired. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** true: expired false: not expired
port	Conditional	string(int)	Listening port. **The value is described as follows:** 10000 to 10032.
username	Conditional	string	User name. [NOTE:This parameter is not supported by the current version. The execution result is invalid.]
version	Mandatory	string	Version number.

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Parameter	Mandatory/ Conditional	Type	Description
writeThrehold	Conditional	string(int)	Write threshold. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 0~100
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This parameter must be returned in vStore scenarios.
ignoreCTime	Mandatory	string(bool)	Whether to ignore the modification time. **The value is described as follows:** true: yes false: no
isSupportSnapshot	Mandatory	string(bool)	Whether snapshots are supported. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** true: yes false: no
logLevel	Mandatory	string(int)	Log level. **The value is described as follows:** 1: fatal 2: error 3: warning 4: info 5: debug

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Example

- Query the NDMP service.

```
Request: GET /deviceManager/rest/210235843910E6000009/NDMPService

Response:
{
   "data": {
      "ignoreCTime": "false",
      "ip": "--",
      "isEnabled": "true",
      "isPwdExpired": "false",
      "isSupportSnapshot": "false",
      "port": "10000",
      "username": "--",
      "version": "V4",
      "writeThrehold": "--",
      "logLevel": "4"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.8.5 Others

2.1.9 iscsi

2.1.9.1 Add

2.1.9.2 Delete

2.1.9.3 Modify

2.1.9.3.1 Interface for Modifying a iSCSI Device Name

Function

This interface is used to modify a iSCSI device name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsidevicename

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ISCSI_DEVICE_NAME	Mandatory	string	iSCSI Device Name. **The value is described as follows:** Contains letters, digits, hyphens (-), and periods (.). **Length:**0~31

Result

N/A

Example

- Modifying a iSCSI device name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/iscsidevicename
{
   "CMO_ISCSI_DEVICE_NAME" : "name1"
}
Response:
{
   "data" : {},
   "error" : {
      "code" : 0,
      "description" : "0"
   }
}
```

2.1.9.4 Query

2.1.9.4.1 Interface for Querying a iSCSI Device Name

Function

This interface is used to query a iSCSI device name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsidevicename

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_ISCSI_DEVICE_NAME	Mandatory	string	iSCSI Device Name.

Example

- Querying a iSCSI device name.

```
Request: GET /deviceManager/rest/210235843710E7000007/iscsidevicename
Response:
{
   "data" : [
      {
         "CMO_ISCSI_DEVICE_NAME" : "iqn.2006-08.com.huawei:oceanstor:21001051720c8a61:222"
      }
   ],
   "error" : {
      "code" : 0,
      "description" : "0"
   }
}
```

2.1.9.5 Others

2.1.10 isns

2.1.10.1 Add

2.1.10.2 Delete

2.1.10.3 Modify

2.1.10.3.1 Interface for Modifying a iSNS Server IP Address

Function

This interface is used to modify a iSNS server IP address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsiserver

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ISNS_SERVER_IP	Mandatory	string	iSNS Server IP. **The value is described as follows:** IPV4 or IPV6 is supported.

Result

N/A

Example

- Modifying a iSNS Server IP Address.

```
Request: PUT /deviceManager/rest/210235843710E7000007/iscsiserver
{
   "CMO_ISNS_SERVER_IP" : "127.0.0.1"
}
Response:
{
   "data" : {},
   "error" : {
      "code" : 0,
      "description" : "0"
   }
}
```

2.1.10.4 Query

2.1.10.4.1 Interface for Querying a iSNS Server IP Address

Function

This interface is used to query a iSNS server IP address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsiserver

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_ISNS_SERVER_IP	Mandatory	string	iSNS Server IP.

Example

- Querying a iSNS Server IP Address.

```
Request: GET /deviceManager/rest/210235843710E7000007/iscsiserver

Response:
{
   "data": [
      {
         "CMO_ISNS_SERVER_IP": "127.0.0.1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.10.5 Others

2.1.11 kmc

2.1.11.1 Add

2.1.11.1.1 Interface for Adding a Key Server Address

Function

This interface is used to add a key server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SA_SERVER

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ip	Mandatory	string	Server IP address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name.
serverType	Mandatory	enum	Server type. **The value is described as follows:** Type: 0: Thales KMIP server 2: SafeNet KMIP server 3: Sansec KMIP server 4: Utimaco KMIP server 5: General KMIP server 6: HashiCorp Vault KMIP server The default value is the Thales KMIP server.
port	Mandatory	uint32	Server port number. **The value is described as follows:** The value ranges from 1 to 65535.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object.

Example

- Adding a key server address.

```
Request: POST /deviceManager/rest/210235843710E7000007/SA_SERVER
{
   "ip" : "6.3.3.3",
   "port" : 5696,
   "serverType" : 0
}
Response:
{
   "data" : {
      "TYPE" : 16507
   },
   "error" : {
      "code" : 0,
      "description" : "0"
   }
}
```

2.1.11.2 Delete

2.1.11.2.1 Interface for Deleting a Key Server Address

Function

This interface is used to delete a key server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SA_SERVER/${ID}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16507: SA_SERVER
ID	Mandatory	string	ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16507: SA_SERVER

Example

- Deleting a key server address.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/SA_SERVER/1?TYPE=16507

Response: {
    "data": {
        "TYPE": 16507
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.11.3 Modify

2.1.11.3.1 Interface for Modifying Key Service Configuration

Function

This interface is used to modify key service configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kmm_general_config/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the key management server. **The value is described as follows:** 0
keyServiceType	Optional	uint32	Key service type. **The value is described as follows:** 0: disabled 1: internal key management service 2: external key management service

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Modifying key service configuration.

```
Request: PUT /deviceManager/rest/210235843710E7000007/kmm_general_config/0
{
   "keyServiceType":"0"
}

Response:
{
   "data": {},
   "error": {
      "code":0,
      "description":"0"
   }
}
```

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2.1.11.3.2 Interface for Modifying the Key File Backup Server Configuration of the Internal Key Management Service

Function

This interface is used to modify the key file backup server configuration of the internal key management service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kmm_inner_key_backup/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	ID of the key file backup server. **The value is described as follows:** 0
enable	Optional	uint32	Switch of the key file backup server. **The value is described as follows:** 0: off 1: on

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Parameter	Mandatory/Optional/Conditional	Type	Description
address	Optional	string	Server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~255
path	Optional	string	Server storage path. **The value is described as follows:** The value contains 1 to 255 ASCII characters. The value cannot contain ':?"<>|* or start with a space or period (.). Path separators / and \ cannot be directly followed by a period (.). **Length:**1~255
username	Conditional	string	Server user name. **The value is described as follows:** The value contains 1 to 63 ASCII characters. **Length:**1~63 **Note:**When the user name or password parameter is empty, the parameters must be changed at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
password	Conditional	string	Server user password. **The value is described as follows:** The value contains 1 to 63 ASCII characters. **Length:**1~63 **Note:**When enable is set to 1, you must enter the password.
protocol	Optional	enum	Transfer protocol type. **The value is described as follows:** 0: FTP 1: SFTP **Note:**To ensure the security of data transfer, you are advised to use Secure File Transfer Protocol (SFTP).
port	Optional	uint32	Server port. **The value is described as follows:** The value is an integer ranging from 1 to 65535.

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Modifying the key file backup server configuration of the internal key management service.

```
Request: PUT /deviceManager/rest/210235843710E7000007/kmm_inner_key_backup/0
{
    "address":"192.168.18.1",
    "enable":1,
    "password":"Admin@storage1",
    "path":"/",
    "port":21,
```

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```
    "protocol":0,
    "username":"admin"
}

Response:
{
    "data": {},
    "error": {
        "code":0,
        "description":"0"
    }
}
```

2.1.11.4 Query

2.1.11.4.1 Interface for Batch Querying Key Server Addresses

Function

This interface is used to query key server addresses in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SA_SERVER

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Rule ID of the key management server.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16507: key management server

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Parameter	Mandatory/ Conditional	Type	Description
ip	Mandatory	string	IP address of the server. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name.
port	Mandatory	uint32	Port number of the server.
serverType	Mandatory	enum	Server type. **The value is described as follows:** Type: 0: Thales KMIP server 2: SafeNet KMIP server 3: Sansec KMIP server 4: Utimaco KMIP server 5: General KMIP server 6: HashiCorp Vault KMIP server The default value is the Thales KMIP server.

Example

- Querying key server addresses in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/SA_SERVER

Response:
{
   "data" : [
      {
```

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```
            "ID" : "1",
            "TYPE" : 16507,
            "ip" : "1.1.1.1",
            "port" : "5696",
            "serverType" : "2"
        }, {
            "ID" : "2",
            "TYPE" : 16507,
            "ip" : "2.2.2.2",
            "port" : "5696",
            "serverType" : "0"
        }
    ],
    "error" : {
        "code" : 0,
        "description" : "0"
    }
}
```


2.1.11.4.2 Interface for Querying Key Service Configuration

Function

This interface is used to query key service configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kmm_general_config/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the key management server. **The value is described as follows:** 0

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Object type. **The value is described as follows:** 635: key service configuration

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of the key management server. **The value is described as follows:** 0
keyServiceType	Mandatory	string(uint32)	Key service type. **The value is described as follows:** 0: disabled 1: internal key management service 2: external key management service

Application Scope

For internal use by R&D engineers.

Example

- Querying key service configuration.

```
Request: GET /deviceManager/rest/210235843710E7000007/kmm_general_config/0

Response:
{
   "data": {
      "ID":"0",
      "TYPE":635,
      "keyServiceType":"0"
   },
   "error": {
      "code":0,
      "description":"0"
   }
}
```

2.1.11.4.3 Interface for Querying the Key File Backup Server Configuration of the Internal Key Management Service

Function

This interface is used to query the key file backup server configuration of the internal key management service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kmm_inner_key_backup/${id}

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the key file backup server. **The value is described as follows:** 0

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the object. **The value is described as follows:** 633: key file backup server configuration
ID	Mandatory	string	ID of the key file backup server. **The value is described as follows:** 0
enable	Mandatory	string(uint32)	Switch of the key file backup server. **The value is described as follows:** 0: off 1: on

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Parameter	Mandatory/ Conditional	Type	Description
address	Mandatory	string	Server address. **The value is described as follows:** The value can be a domain name or IP address (IPv4 or IPv6 address). The domain name contains 1 to 255 case-insensitive letters, digits, and hyphens (-). Each level of the domain name contains a maximum of 63 characters. Domain names at various levels are separated by periods (.) and cannot start or end with a hyphen (-). The top-level domain name cannot contain digits only.
path	Mandatory	string	Server storage path. **The value is described as follows:** The value contains 1 to 255 ASCII characters. The value cannot contain ':?"<>|* or start with a space or period (.). Path separators / and \ cannot be directly followed by a period (.).
username	Mandatory	string	Server user name. **The value is described as follows:** The value contains 1 to 63 ASCII characters.

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Parameter	Mandatory/ Conditional	Type	Description
protocol	Mandatory	string(enum)	Transfer protocol type. **The value is described as follows:** 0: FTP 1: SFTP **Note:**To ensure the security of data transfer, you are advised to use Secure File Transfer Protocol (SFTP).
port	Mandatory	string(uint32)	Server port. **The value is described as follows:** The value is an integer ranging from 1 to 65535.

Application Scope

For internal use by R&D engineers.

Example

- Querying the key file backup server configuration of the internal key management service.

```
Request: GET /deviceManager/rest/210235843710E7000007/kmm_inner_key_backup/0

Response:
{
   "data": {
      "ID":"0",
      "TYPE": 633,
      "address":"192.168.18.1",
      "enable":"1",
      "path":"/",
      "port":"21",
      "protocol":"0",
      "username":"admin"
   },
   "error": {
      "code":0,
      "description":"0"
   }
}
```

2.1.11.5 Others

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2.1.11.5.1 Interface for Testing the Connectivity to the Key Server

Function

This interface is used to test the connectivity to the key server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/TEST_SA_SERVER

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ip	Mandatory	string	Server IP address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
serverType	Mandatory	enum	Server type. **The value is described as follows:** Type: 0: Thales KMIP server 2: SafeNet KMIP server 3: Sansec KMIP server 4: Utimaco KMIP server 5: General KMIP server 6: HashiCorp Vault KMIP server The default value is the Thales KMIP server.
port	Mandatory	uint32	Server port. **The value is described as follows:** 1~65535

Result

N/A

Example

- Testing the connectivity to the key server.

```
Request: PUT /deviceManager/rest/210235843710E7000007/TEST_SA_SERVER
{
    "ip" : "1.1.1.1",
    "port" : 5696,
    "serverType" : 0
}
Response:
{
    "data" : {},
    "error" : {
        "code" : 0,
        "description" : "0"
    }
}
```

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2.1.11.5.2 Interface for Testing the Key File Backup Server Configuration of the Internal Key Management Service

Function

This interface is used to test the key file backup server configuration of the internal key management service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/test_kmm_inner_key_backup

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the key file backup server. **The value is described as follows:** 0
address	Mandatory	string	Server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
path	Mandatory	string	Server storage path. **The value is described as follows:** The value contains 1 to 255 ASCII characters. The value cannot contain ':?"<>|* or start with a space or period (.). Path separators / and \ cannot be directly followed by a period (.). **Length:**1~255
username	Mandatory	string	Server user name. **The value is described as follows:** The value contains 1 to 63 ASCII characters. **Length:**1~63
password	Conditional	string	Server user password. **The value is described as follows:** The value contains 1 to 63 ASCII characters. **Length:**1~63 **Note:**If the server address, server storage path, server user name, transmission protocol type, or server port is different from that saved in the system, the user password field of the server is mandatory and must be delivered. If this field is not delivered, the password stored in the database is used.

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Parameter	Mandatory/Optional/Conditional	Type	Description
protocol	Mandatory	enum	Transfer protocol type. **The value is described as follows:** 0: FTP 1: SFTP **Note:**To ensure the security of data transfer, you are advised to use Secure File Transfer Protocol (SFTP).
port	Mandatory	uint32	Server port. **The value is described as follows:** The value is an integer ranging from 1 to 65535.

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Testing the key file backup server configuration of the internal key management service.

```
Request: PUT /deviceManager/rest/210235843710E7000007/test_kmm_inner_key_backup
{
   "address":"8.46.88.77",
   "path":"/",
   "username":"admin",
   "protocol":1,
   "port":22,
   "ID":"0",
   "password":"Admin@storage1"
}

Response:
{
   "data": {},
   "error": {
      "code":0,
      "description":"0"
   }
}
```

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2.1.12 call_home

2.1.12.1 Add

2.1.12.1.1 Interface for Adding an eService Data Recipient Address

Function

Add the eService data recipient address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_email_receiver

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
receiver	Mandatory	string	eService data recipient address. **The value is described as follows:** user@domain.com **Length:**256

Result

N/A

Example

- Add the eService data recipient address.

```
Request: POST /deviceManager/rest/2102350BSE10EA000006/chs_email_receiver
{
   "receiver": "user@domain.com"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.1.12.2 Delete

2.1.12.2.1 Interface for Deleting an eService Data Recipient Address

Function

Delete the eService data recipient address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_email_receiver

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
receiver	Mandatory	string	eService data recipient address. **The value is described as follows:** user@domain.com **Length:**256

Result

N/A

Example

- Delete the eService data recipient address.

```
Request: DELETE /deviceManager/rest/2102350BSE10EA000006/chs_email_receiver?
receiver=user@domain.com

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.12.3 Modify

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2.1.12.3.1 Interface for Modifying an eService Data Recipient Address

Function

Modify the eService data recipient address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_email_receiver

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
oldReceiver	Mandatory	string	Old eService data recipient address. **The value is described as follows:** old@domain.com **Length:**256
newReceiver	Mandatory	string	New eService data recipient address. **The value is described as follows:** new@domain.com **Length:**256

Result

N/A

Example

- Modify the eService data recipient address.

```
Request: PUT /deviceManager/rest/2102350BSE10EA000006/chs_email_receiver
{
   "oldReceiver" : "user1@domain.com",
   "newReceiver" : "user2@domain.com"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

2.1.12.4 Query

2.1.12.4.1 Interface for Querying eService Data Recipient Addresses

Function

Query eService data recipient addresses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_email_receiver

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
receiver	Mandatory	string	eService data recipient address. **The value is described as follows:** user@domain.com

Example

- Query eService data recipient addresses.

```
Request: GET /deviceManager/rest/2102350BSE10EA000006/chs_email_receiver

Response: {
   "data": [
      {
         "receiver": "user1@domain.com"
      },
      {
         "receiver": "user2@domain.com"
      },

   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.1.12.4.2 Interface for Querying the Protocol Used to Upload Data to eService

Function

Query the protocol used to upload data to eService.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_trans_type

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
chsTransType	Mandatory	enum	Protocol used to upload data to eService. **The value is described as follows:** 0: HTTPS; 1: SMTP

Example

- Query the protocol used to upload data to eService.

```
Request: GET /deviceManager/rest/2102350BSE10EA000006/chs_trans_type

Response: {
   "data": {
      "chsTransType": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.12.5 Others

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2.1.12.5.1 Interface for Activating the Public Key of the Email Channel for the eService Call Home Service

Function

This interface is used to activate the public key of the email channel for the eService Call Home service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_agent/save_chs_email_public_key

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
type	Optional	enum	Object type. **The value is described as follows:** 57435 **Note:**Deprecated.

Result

N/A

Usage Guidelines

1. The Content-Type field in the message header must be set to multipart/form-data.

2. The iBaseToken must be delivered in the message body.

Application Scope

For internal use by R&D engineers.

Example

- Activating the public key of the email channel for the eService Call Home service.

```
Request: PUT /deviceManager/rest/2102350BSE10EA000006/chs_agent/save_chs_email_public_key

Response: {
   "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.12.5.2 Interface for Setting the Protocol Used to Upload Data to eService

Function

Set the protocol used to upload data to eService.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/chs_trans_type

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
chsTransType	Mandatory	enum	Protocol used to upload data to eService. **The value is described as follows:** 0: HTTPS; 1: SMTP

Result

N/A

Example

- Set the protocol used to upload data to eService.

```
Request: PUT /deviceManager/rest/2102350BSE10EA000006/chs_trans_type
{
    "chsTransType":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.1.12.5.3 Interface for Testing eService Data Recipient Addresses

Function

Test eService data recipient addresses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/test_chs_email_receiver

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
receiverList	Mandatory	string	eService data recipient addresses. **The value is described as follows:** user1@domain.com;user2@domain.com **Length:**2048

Result

N/A

Example

- Test eService data recipient addresses.

```
Request: PUT /deviceManager/rest/2102350BSE10EA000006/test_chs_email_receiver
{
    "receiverList":"user1@domain.com;user2@domain.com"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.13 container

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2.1.13.1 Add

2.1.13.2 Delete

2.1.13.3 Modify

2.1.13.4 Query

2.1.13.4.1 Interface for Querying the Installed Application List

Function

This interface is used to query the installed application list.

URL

https://${ip}:${port}/api/v2/containerApplication

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Application name.
revision	Mandatory	string	Version name of an application.
namespace	Mandatory	string	Name of the application namespace.
updated	Mandatory	string	Latest update time of an application.
status	Mandatory	string	Deployment status of an application.

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Parameter	Mandatory/ Conditional	Type	Description
cpuPercent	Mandatory	string	CPU usage of an application.
memoryPercent	Mandatory	string	Memory usage of an application.
ipAddress	Mandatory	string	IP address.
netPlane	Mandatory	string	Network plane.

Usage Guidelines

1. You can run the "show container_service general" command to check whether the value of "Enabled" is "Off". If the value is "Off", the container is not activated and the interface cannot be used.

2. The interface cannot be used during container activation.

Example

- Querying the installed application list.

```
Request: GET/api/v2/containerApplication

Response:
{
   "data": [
      {
          "name":"pmm",
          "namespace":"test",
           "revision":"1",
          "updated":"2020-11-21 16:58:24",
          "status":"deployed",
          "cpuPercent":"",
          "memoryPercent":"",
          "ipAddress":"8.46.1.244",
          "netPlane":"controller"
      },
   ]
   "error":{
      "code": 0,
      "description":""
   }
}
```

2.1.13.5 Others

2.1.13.5.1 Interface for Displaying Details About a Single Installed Application

Function

This interface is used to display details about a single application.

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URL

https://${ip}:${port}/api/v2/containerApplication/detail

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
namespace	Optional	string	Namespace specified during application deployment. **Length:**1~255
name	Mandatory	string	Specifies the application alias specified by the user during application deployment. If an alias is specified during application deployment, this parameter is mandatory. If no alias is specified during application deployment, this parameter is optional. **Length:**1~255

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Application name.
revision	Mandatory	string	Version name of an application.
namespace	Mandatory	string	Name of the application namespace.
updated	Mandatory	string	Latest update time of an application.

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Parameter	Mandatory/ Conditional	Type	Description
status	Mandatory	string	Deployment status of an application.
chartName	Conditional	string	Name of a chart package.
appVersion	Mandatory	string	Application version.
chartVersion	Mandatory	string	Version of the chart package.
appImageNameList	Mandatory	object	Image list
netPlane	Mandatory	string	Network plane.
ipAddress	Mandatory	string	IP address.
description	Conditional	string	Description.

podList	Mandatory	object	Indicates the pod list.
			The value is described as follows:
			{
			"podName":"busybox-volume",
			"podStatus":"Running",
			"restartTimes":"2020-11-30 12:17:36",
			"podCpuPercent":"",
			"podMemoryPercent":"",
			"belongNode":"node-c720bf16",
			"podNamespace":"dpa",
			"isReady":false,
			}

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Parameter	Mandatory/ Conditional	Type	Description

nodeList	Mandatory	array	Indicates the node list.
			The value is described as follows:
			{
			"nodeName":"node-c720bf16",
			"nodeStatus":"Ready",
			"cpuUsed":"4",
			"memoryUsed":"14332708Ki",
			"cpuTotal":"4",
			"memoryTotal":"14332708Ki",
			"nodeCpuPercent":"100.00",
			"nodeMemoryPercent":"100.00",
			"role":"master",
			"storageVersion":"6.1.2",
			"storageImage":"OceanStor Dorado xxx.tgz",
			}

lunList	Mandatory	array	Indicates the LUN list.
			The value is described as follows:
			{
			"lunName":"pvc-volume",
			"lunStatus":1,
			"lunCapacity":"3333333",
			"lunSubscribeCapacity":"3333",
			"podList":[
			"busybox-volume"
			]
			}

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Usage Guidelines

1. You can run the "show container_service general" command to check whether the value of "Enabled" is "Off". If the value is "Off", the container is not activated and the interface cannot be used.

2. The interface cannot be used during container activation.

Example

- Displaying details about a single application.

```
Request: GET /api/v2/containerApplication/detail?name=100p-release-alias&namespace=test

Response: {
   "data": {
      "name": "100p-release-alias",
      "namespace": "test",
      "revision": "3",
      "updated": "2020-11-30 17:01:38",
      "status": "deployed",
      "chartName": "ProtectEngine-E",
      "chartVersion": "8.1.0",
      "appVersion": "8.1.0",
      "description": "dme install success",
      "appImageNameList": "busybox, busybox1",
      "ipAddress": "8.46.1.1",
      "netPlane": "controller",
      "podList": [
         {
            "podName": "busybox-volume",
            "podStatus": "Running",
            "restartTimes": "2020-11-30 12:17:36",
            "podCpuPercent": "",
            "podMemoryPercent": "",
            "belongNode": "node-c720bf16",
            "podNamespace": "dpa",
            "isReady": false
         }
      ],
      "lunList": [
         {
            "lunName": "pvc-volume",
            "lunStatus": 1,
            "lunCapacity": "3333333",
            "lunSubscribeCapacity": "3333",
            "podList": [
               "busybox-volume"
            ]
         }
      ],
      "nodeList": [
         {
            "nodeName": "node-c720bf16",
            "nodeStatus": "Ready",
            "cpuUsed": "4",
            "memoryUsed": "14332708Ki",
            "cpuTotal": "4",
            "memoryTotal": "14332708Ki",
            "nodeCpuPercent": "100.00",
            "nodeMemoryPercent": "100.00",
            "role": "master",
            "storageVersion": "6.1.2",
            "storageImage": "OceanStor Dorado xxx.tgz"
         }
      ]
   },
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.1.14 container_service

2.1.14.1 Add

2.1.14.2 Delete

2.1.14.3 Modify

2.1.14.4 Query

2.1.14.4.1 Interface for Querying Container Enabling Status

Function

This interface is used to query container enabling status.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DEVICE_GLOBAL_CONF/get_container_enable_info

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ctrlNodeId	Mandatory	string	Controller node. **The value is described as follows:** XY: X ranges from 0 to 7, and Y ranges from A to D. **Length:**2

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Result

Parameter	Mandatory/ Conditional	Type	Description
containerEnable	Mandatory	uint32	Querying container enabling status. **The value is described as follows:** 0: disabled 1: enabled

Example

- Querying container enabling status.

```
Request: PUT/deviceManager/rest/2102353JMM10KA000024/DEVICE_GLOBAL_CONF/
get_container_enable_info
{
    "ctrlNodeId":"0A"
}

Response: {
    "data": {
        "containerEnable": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.14.5 Others

2.1.14.5.1 Interface for Activating the Container Service

Function

This interface is used to activate the container service.

HighRisk

You are about to activate the container service. After this operation, all controllers will be upgraded and restarted in batches, and read/write performance may deteriorate. In addition, after the container service is activated, IP addresses in the 172.16.x.x network segment will be used for container management by default. As a result, services that use the 172.16.x.x network segment, such as the NTP service, will become invalid. Ensure that this network segment is not used by services.

Suggestion: Before performing this operation, ensure that the preceding risk is acceptable.

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URL

https://${ip}:${port}/api/v2/task/containerService/activate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
password	Mandatory	string	User password.

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
name	Mandatory	string	Task name.
target	Mandatory	string	Task operation object.

Example

- Activating the container service.

```
Request: POST /api/v2/task/containerService/activate
{
   "password": "123456"
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "activateSmartContainer",
      "displayName": "Activate Container Service"
   }
}
```

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2.1.14.5.2 Interface for Checking Whether the Container Service Is Activated

Function

This interface is used to check whether the container service is activated.

URL

https://${ip}:${port}/api/v2/task/containerService/enabled

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
enabled	Mandatory	bool	Check whether the container service is activated. **The value is described as follows:** True: activated False: not activated

Example

- Checking whether the container service is activated.

```
Request: GET /api/v2/task/containerService/enabled

Response: {
    "result": {
        "code": 0,
        "description": "",
        "suggestion": ""
    },
    "data": {
        "enabled": false
    }
}
```

2.1.14.5.3 Interface for Checking Whether the Container Service Is Deployed

Function

This interface is used to check whether the container service is deployed.

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URL

https://${ip}:${port}/api/v2/task/containerService/isDeployed

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
isDeployed	Mandatory	bool	Checks whether the container service is deployed. **The value is described as follows:** True: deployed False: not deployed

Example

- Checking whether the container service is deployed.

```
Request: GET /api/v2/task/containerService/isDeployed

Response:
{
   "data": {
      "isDeployed": False
    },
   "result": {
      "code": 0,
      "description": "",
   "suggestion": ""
   }
}
```

2.1.14.5.4 Interface for Deploying the Container Service

Function

This interface is used to deploy the container service.

URL

https://${ip}:${port}/api/v2/task/containerService/deploy

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
nodeList	Optional	array	List of container nodes. **Note:**If this parameter is not delivered, all nodes are deployed by default. If the configuration is not delivered to the primary controller node, a parameter error is reported.
applicationPoolIdList	Optional	array	List of application storage pool IDs. **Note:**Either applicationStorage-PoolID or applicationStorage-Name can be set.
applicationPool-NameList	Optional	array	List of application storage pool names. **Note:**Either applicationStorage-PoolID or applicationStorage-Name can be set.
imageRepositoryPoolId	Conditional	string	ID of the image storage pool. **Note:**Either imageRepositoryPoolId or imageRepository-PoolName must be specified.
imageRepositoryPool-Name	Conditional	string	Name of the image storage pool. **Note:**Either imageRepositoryPoolId or imageRepository-PoolName must be specified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
enableCompression	Optional	string	Whether to enable compression for mirror LUNs. **The value is described as follows:** "true": enabled "false": disabled
enableDedup	Optional	string	Whether to enable or disable deduplication for mirror LUNs. **The value is described as follows:** "true": enabled "false": disabled

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
name	Mandatory	string	Task name.
target	Mandatory	string	Task operation object.

Example

- Deploying the container service.

```
Request: POST /api/v2/task/containerService/deploy
{
   "imageRepositoryPoolId": "01",
   "applicationPoolIdList": ["01"],
   "nodeList": ["0A", "0B"]
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "deploySmartContainer",
      "displayName": "Deploy Container Service"
```

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```
    }
}
```

- Deploying the container service.

```
Request: POST /api/v2/task/containerService/deploy
{
    "imageRepositoryPoolName": "storage01",
    "applicationPoolNameList": ["storage01"],
    "nodeList": ["0A", "0B"]
}

Response: {
    "result": {
        "code": 0,
        "description": "",
        "suggestion": ""
    },
    "data": {
        "taskId": "10",
        "target": "--",
        "name": "deploySmartContainer",
        "displayName": "Deploy Container Service"
    }
}
```

2.1.14.5.5 Interface for Expanding the Container Service

Function

This interface is used to expand the capacity of the container service.

URL

https://${ip}:${port}/api/v2/task/containerService/expand

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
nodeList	Mandatory	array	List of nodes for the container service.

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Task name.
target	Mandatory	string	Task operation object.

Example

- Expanding the capacity of the container service.

```
Request: POST /api/v2/task/containerService/expand
{
   "nodeList":  ["0A", "0B"]
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "expandSmartContainer",
      "displayName": "Add Node to Container Service"
   }
}
```

2.1.14.5.6 Interface for Obtaining Container Service Status Information

Function

This interface is used to obtain container service status information.

URL

https://${ip}:${port}/api/v2/task/containerService/summary_status

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
serviceStatus	Mandatory	string	Container service status of a node. **The value is described as follows:** "Running": running. "Stopped": stopped.
enabled	Mandatory	bool	Whether the container service is activated. **The value is described as follows:** true: activated false: not activated
isDeployed	Mandatory	bool	Whether the container service is deployed. **The value is described as follows:** true: deployed false: not deployed
isUpgrading	Mandatory	bool	Whether the system is being upgraded. **The value is described as follows:** true: being upgraded false: not upgraded
isMirrorPoolDeployed	Mandatory	bool	Whether the image storage pool is registered. **The value is described as follows:** true: registered false: not registered
isNodeDeployed	Mandatory	bool	Whether the container service is deployed on the node. **The value is described as follows:** true: deployed false: not deployed

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Example

- Obtaining container service status information.

```
Request: GET /api/v2/task/containerService/summary_status

Response:
{
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "enabled": True,
      "isDeployed": True,
      "serviceStatus": "Running",
      "isUpgrading": False,
      "isMirrorPoolDeployed": True,
      "isNodeDeployed": True
   }
}
```

2.1.14.5.7 Interface for Obtaining Storage Pool Information of the Container Service

Function

This interface is used to obtain storage pool information of the container service.

URL

https://${ip}:${port}/api/v2/task/containerService/storagePool

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
imageRepositoryPool	Mandatory	json	Container image storage pool. **The value is described as follows:** JSON parameters candidates: Available storage pool. inuse: Used storage pool. id: Storage pool ID. name: Storage pool name. used_capacity: Used capacity. total_capacity: Total capacity.
applicationPool	Mandatory	json	Container application storage pool. **The value is described as follows:** JSON parameters candidates: Available storage pool. inuse: Used storage pool. id: Storage pool ID. name: Storage pool name. used_capacity: Used capacity. total_capacity: Total capacity. isDeployed: Whether the storage pool is used.

Example

- Obtaining storage pool information of the container service.

```
Request: GET /api/v2/task/containerService/storagePool

Response: {
```

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```
  "result": {
    "code": 0,
    "description": "",
    "suggestion": ""
  },
  "data": {
    "imageRepositoryPool": {
      "candidates": [

      ],
      "inuse": [
        {
          "id": "0",
          "name": "StoragePool001",
          "used_capacity": 2083454,
          "total_capacity": 15886247167
        }
      ]
    },
    "applicationPool": {
      "candidates": [
        {
          "id": "1",
          "name": "StoragePool002",
          "used_capacity": 2083454,
          "total_capacity": 15886247167
        }
      ],
      "inuse": [
        {
          "id": "0",
          "name": "StoragePool001",
          "used_capacity": 2083454,
          "total_capacity": 15886247167,
          "isDeployed": true
        }
      ]
    }
  }
}
```


2.1.14.5.8 Interface for Obtaining the Container Service Status

Function

This interface is used to obtain the container service status.

URL

https://${ip}:${port}/api/v2/task/containerService/serviceStatus

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
serviceStatus	Mandatory	string	Container service status. **The value is described as follows:** Running: running Stopped: stopped

Example

- Obtaining the container service status.

```
Request: GET /api/v2/task/containerService/serviceStatus

Response: {
    "result": {
        "code": 0,
        "description": "",
        "suggestion": ""
    },
    "data": {
        "serviceStatus": "Running"
    }
}
```

2.1.14.5.9 Interface for Reactivating the Container Service

Function

This interface is used to reactivate the container service.

HighRisk

You are about to reactivate the container service. After this operation, all controllers will be upgraded and restarted in batches, and read/write performance may deteriorate. In addition, after the container service is activated, IP addresses in the 172.16.x.x network segment will be used for container management by default. As a result, services that use the 172.16.x.x network segment, such as the NTP service, will become invalid. Ensure that this network segment is not used by services. In addition, this operation will stop the original container service and delete the original container network plane configurations. As a result, the original container network plane will be unavailable.

Suggestion: Before performing this operation, ensure that the preceding risk is acceptable.

URL

https://${ip}:${port}/api/v2/task/containerService/reActivate

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
password	Mandatory	string	User password.
mode	Mandatory	string	User type. **The value is described as follows:** The value must be cli.

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
name	Mandatory	string	Task name.
target	Mandatory	string	Task operation object.

Example

- Reactivating the container service.

```
Request: POST /api/v2/task/containerService/reActivate
{
   "password": "123456",
   "mode": "cli"
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "reActivateSmartContainer",
      "displayName": "Reactivate Container Service"
   }
}
```

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2.1.14.5.10 Interface for Starting the Container Service

Function

This interface is used to start the container service.

HighRisk

You are about to enable the container service. This operation takes about 10 minutes at most.

Suggestion: Before performing this operation, ensure that the license has been imported and the container service has been activated.

URL

https://${ip}:${port}/api/v2/task/containerService/start

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
nodeList	Mandatory	array	Container node information.

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
name	Mandatory	string	Task name.
target	Mandatory	string	Task operation object.

Example

- Starting the container service.

```
Request: POST /api/v2/task/containerService/start
{
   "nodeList":  ["0A", "0B"]
}
```

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```
Response: {
    "result": {
        "code": 0,
        "description": "",
        "suggestion": ""
    },
    "data": {
        "taskId": "10",
        "target": "--",
        "name": "startSmartContainer",
        "displayName": "Start Container Service"
    }
}
```

2.1.14.5.11 Interface for Stopping the Container Service

Function

This interface is used to stop the container service.

HighRisk

You are about to stop the container service. After this operation, the container service will be unavailable.

Suggestion: Before performing this operation, ensure that the containerized application has been stopped.

URL

https://${ip}:${port}/api/v2/task/containerService/stop

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
nodeList	Mandatory	array	List of container nodes.

Result

Parameter	Mandatory/Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
target	Mandatory	string	Task operation object.

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Task name.

Example

- Stopping the container service.

```
Request: POST /api/v2/task/containerService/stop
{
   "nodeList":  ["0A", "0B"]
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "stopSmartContainer",
      "displayName": "Stop Container Service"
   }
}
```

2.1.15 batch_configuration

2.1.15.1 Add

2.1.15.2 Delete

2.1.15.3 Modify

2.1.15.4 Query

2.1.15.5 Others

2.1.15.5.1 Interface for Continuing Batch Configuration

Function

Continue the batch configuration operation.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/buildrun

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
Operatortype	Mandatory	int	Operation type. **The value is described as follows:** 2: continue

Result

N/A

Example

- Continue the batch configuration operation.

```
Request: POST /deviceManager/rest/210235843910E6000009/buildrun
{
   "Operatortype": 2
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.15.5.2 Interface for Executing a Batch Configuration

Function

This interface is used to execute a batch configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/buildrun

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
Operatortype	Mandatory	int	Operation type. **The value is described as follows:** 0: starts execution.

Result

N/A

Example

- Executing a batch configuration.

```
Request: POST /deviceManager/rest/210235843910E6000009/buildrun
{
   "Operatortype": 0
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.1.15.5.3 Interface for Stopping Batch Configuration

Function

This interface is used to stop a batch configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/buildrun

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
Operatortype	Mandatory	int	Operation type. **The value is described as follows:** 1: stop

Result

N/A

Example

- Stopping a batch configuration.

```
Request: POST /deviceManager/rest/210235843910E6000009/buildrun
{
   "Operatortype": 1
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.1.15.5.4 Interface for Viewing Batch Configuration Progress

Function

This interface is used to view batch configuration progress.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/buildrun

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
isUser	Mandatory	bool	Whether the user is the current user. **Note:**The field is invalid if a user does not upload the configuration file.
state	Mandatory	string(enum)	Status. **The value is described as follows:** 0: Initial status. File import is allowed. 1: The file is being imported. 2: Failed to check the file. File import is allowed. 3: Unexecuted 4: Executing 7: The task is not complete and can be continued.
completed	Mandatory	uint32	Overall progress.
number	Mandatory	string(int)	Number of pieces of CLI command execution information.
user	Mandatory	string	User name for logging in to the device.
ip	Mandatory	string	Client IP address.

result	Mandatory	string(json)	CLI command list. cliecho indicates the execution information of each CLI command.
			The value is described as follows:
			[{cliecho:"xxxx"
			},{
			Command: "xxx",
			errorLine: xxx
			}, {
			}].

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Example

- Viewing the batch configuration progress.

```
Request: GET /deviceManager/rest/210235843710E7000007/buildrun

Response: {
   "data": {
      "completed": 0,
      "ip": "192.168.0.1",
      "isUser": true,
      "number": 0,
      "result": [

      ],
      "state": 3,
      "user": "admin"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2 Alarm management

2.2.1 snmp

2.2.1.1 Add

2.2.1.1.1 Interface for Adding a USM User

Function

This interface is used to add a USM user.

HighRisk

You are about to add a USM user.

Suggestion: Set the security authentication protocol SHA256 or a higher security level and data encryption protocol AES or a higher security level for the USM account.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_usm

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_USM_AUTH_PROT	Mandatory	enum	Authentication protocol type. **The value is described as follows:** 0: MD5 1: NONE 3: SHA 4: SHA224 5: SHA256 6: SHA384 7: SHA512
CMO_USM_PASSWD	Conditional	string	Authentication password. **Note:**This field must be delivered when the value of CMO_USM_AUTH_PROT is not "NONE".
CMO_USM_PRIV_PASSWD	Conditional	string	Data encryption password. **Note:**This field must be delivered when the value of CMO_USM_PRIV_PROT is not "NONE".
CMO_USM_PRIV_PROT	Mandatory	enum	Data encryption protocol type. **The value is described as follows:** 0: NONE 2: DES 3: 3DES 4: AES 20: AES192 21: AES256
CMO_USM_USER	Mandatory	string	Security user name. **Length:**4~32

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_USM_USER_LEVEL	Optional	uint16	User level. **The value is described as follows:** 0: read/write user 1: read-only user **Default:**0: read/write user
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 242: SNMP_USM

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 242: SNMP_USM
ID	Mandatory	string	USM user name.
CMO_USM_AUTH_PROT	Mandatory	string(enum)	Authentication protocol type. **The value is described as follows:** 0: MD5 1: NONE 3: SHA 4: SHA224 5: SHA256 6: SHA384 7: SHA512

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Parameter	Mandatory/ Conditional	Type	Description
CMO_USM_ISDEFAULT	Mandatory	string(bool)	Whether the USM user is a default user. **The value is described as follows:** true: yes false: no **Note:**Deprecated.
CMO_USM_PRIV_PROT	Mandatory	string(enum)	Data encryption protocol type. **The value is described as follows:** 0: NONE 2: DES 3: 3DES 4: AES 20: AES192 21: AES256
CMO_USM_USER	Mandatory	string	Security user name.
CMO_USM_USER_LEVEL	Mandatory	string(uint16)	User level. **The value is described as follows:** 0: read/write user 1: read-only user

Example

- Adding a USM user.

```
Request: POST /deviceManager/rest/210235843910E6000009/snmp_usm
{
 "CMO_USM_AUTH_PROT": "3",
 "CMO_USM_PASSWD": "Admin@storage",
 "CMO_USM_PRIV_PASSWD": "Admin@123456",
 "CMO_USM_PRIV_PROT": "4",
 "CMO_USM_USER": "dddddd",
 "CMO_USM_USER_LEVEL": "0",
 "TYPE": 242
}

Response: {
   "data": {
      "CMO_USM_AUTH_PROT": "3",
      "CMO_USM_ISDEFAULT": "false",
      "CMO_USM_PRIV_PROT": "4",
      "CMO_USM_USER": "dddddd",
      "CMO_USM_USER_LEVEL": "0",
      "ID": "dddddd",
      "TYPE": 242
   },
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.2.1.1.2 Interface for Adding an SNMP Trap Server Address

Function

This interface is used to add an SNMP Trap server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name.
CMO_TRAP_SERVER_PORT	Mandatory	uint32	Trap server port. **The value is described as follows:** 1 to 65535.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TRAP_SERVER_USER	Conditional	string	USM username. **Length:**4~32 **Note:**This field is delivered only when the Trap server type is SNMPv3.
CMO_TRAP_SERVER_TYPE	Optional	enum	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string **Default:**3: All
CMO_TRAP_VERSION	Optional	enum	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3 **Default:**1: SNMPv1

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Indicates the ID of the SNMP trap server.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 240: SNMP_TRAP_ADDR

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Parameter	Mandatory/ Conditional	Type	Description
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address.
CMO_TRAP_SERVER_PORT	Mandatory	string(uint32)	Trap server port. **The value is described as follows:** 1 to 65535.
CMO_TRAP_SERVER_USER	Mandatory	string	USM username.
CMO_TRAP_SERVER_TYPE	Mandatory	string(enum)	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string
CMO_TRAP_VERSION	Mandatory	string(enum)	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3

Example

- Adding an SNMP Trap server address.

```
Request: POST /deviceManager/rest/210235843910E6000009/snmp_trap_addr
{
   "CMO_TRAP_SERVER_IP": "192.168.2.2",
   "CMO_TRAP_SERVER_PORT": "162",
   "CMO_TRAP_SERVER_TYPE": "3",
   "CMO_TRAP_SERVER_USER": "test",
   "CMO_TRAP_VERSION": "3"
}

Response: {
   "data": {
      "CMO_TRAP_SERVER_IP": "192.168.2.2",
      "CMO_TRAP_SERVER_PORT": "162",
      "CMO_TRAP_SERVER_TYPE": "3",
      "CMO_TRAP_SERVER_USER": "test",
      "CMO_TRAP_VERSION": "3",
```

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```
        "ID": "2",
        "TYPE": 240
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.2.1.2 Delete

2.2.1.2.1 Interface for Deleting a USM User

Function

This interface is used to delete a USM user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_usm/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	USM user name. **The value is described as follows:** The USM user name can be obtained through Interface for Batch Querying USM User Information. **Length:**4-32

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 242: SNMP_USM

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Example

- Deleting a USM user.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/snmp_usm/dddddd

Response:
{
   "data": {
      "TYPE": 242
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.2.2 Interface for Deleting an SNMP Trap Server Address

Function

This interface is used to delete an SNMP Trap server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	SNMP trap server ID. **The value is described as follows:** The SNMP trap server ID can be obtained through Interface for Batch Querying SNMP Trap Settings. **Length:**1

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 240: SNMP Trap address

Example

- Deleting an SNMP Trap server address.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/snmp_trap_addr/2

Response: {
   "data": {
      "TYPE": 240
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.3 Modify

2.2.1.3.1 Interface for Modifying an SNMP Trap Server Address

Function

This interface is used to modify an SNMP Trap server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr/${id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address.
CMO_TRAP_SERVER_TYPE	Optional	enum	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string **Default:**3: All
CMO_TRAP_SERVER_USER	Conditional	string	USM username. **Length:**4~32 **Note:**This field is delivered only when the Trap server type is SNMPv3.
ID	Mandatory	string	SNMP trap server ID. **The value is described as follows:** The SNMP trap server ID can be obtained through Interface for Batch Querying SNMP Trap Settings. **Length:**1
CMO_TRAP_SERVER_PORT	Mandatory	uint32	Trap server port. **The value is described as follows:** 1 to 65535.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TRAP_VERSION	Optional	enum	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3 **Default:**1: SNMPv1

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	SNMP trap server ID.
TYPE	Mandatory	string	Type number of the managed object. **The value is described as follows:** 240: SNMP trap address

Example

- Modifying an SNMP Trap server address.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snmp_trap_addr/2
{
    "CMO_TRAP_SERVER_IP": "192.168.0.1",
    "CMO_TRAP_SERVER_PORT": "162",
    "CMO_TRAP_SERVER_TYPE": "3",
    "CMO_TRAP_SERVER_USER": "dddddd",
    "CMO_TRAP_VERSION": "3",
    "ID": "2"
}

Response: {
    "data": {
        "ID": "2",
        "TYPE": 240
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.2.1.3.2 Interface for Modifying SNMP Community Information

Function

This interface is used to modify the SNMP community.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNMP_COMMUNITY

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SNMP_RDCOMMUNITY	Optional	string	Read-only community string that is used for reading device information. To obtain the security policy of the password, run "show snmp safe_strategy".
CMO_SNMP_WRCOMMUNITY	Optional	string	Read-write community string that is used for reading or writing device information. To obtain the security policy of the password, run "show snmp safe_strategy".

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	Object ID.
type	Mandatory	enum	Managed object type ID. **The value is described as follows:** 241: SNMP_COMMUNITY

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Example

- Modifying the community.

```
Request: PUT /deviceManager/rest/2102353JMM10KA000013/SNMP_COMMUNITY
{
    "CMO_SNMP_RDCOMMUNITY": "Admin@123",
    "CMO_SNMP_WRCOMMUNITY": "Admin@1234"
}

Response: {
    "data": {
        "id": "1",
        "type": 241
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.1.3.3 Interface for Modifying SNMP Configuration Information

Function

This interface is used to modify SNMP configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/common/snmp_protocol

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SNMP_SNMPV1V2C_STATUS	Optional	snmpv1v2c_status_e	Sets the protocol switch status. **The value is described as follows:** The value can be "On" or "Off", where: 1:"On": The switch is turned on. 2:"Off": The switch is turned off.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SNMP_PORT	Optional	uint32	Port. **The value is described as follows:** The value is 161 or an integer from 20000 to 20100.

Result

N/A

Example

- Modifying the SNMPV1V2C Switch.

```
Request: PUT /deviceManager/rest/2102353JMM10KA000013/common/snmp_protocol
{
   "SNMP_SNMPV1V2C_STATUS": "1"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.3.4 Interface for Modifying SNMP Security Policy Information

Function

This interface is used to modify SNMP security policy information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/common/snmp_security_policies

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SAFE_STRATEGY_MIN_LENGTH	Optional	uint32	Minimum length of the community and USM user password. **The value is described as follows:** The value is an integer from 8 to 32.
SAFE_STRATEGY_MAX_LENGTH	Optional	uint32	Maximum length of the community and USM user password. **The value is described as follows:** The value is an integer from 8 to 32.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SAFE_STRATEGY_PWD_COMPLEX	Optional	uint32	Requirement on the community and USM user password. **The value is described as follows:** The value can be "Normal", "Low", or "High", where: 1:"Normal": The password must contain special characters and at least two types of the following characters: uppercase letters, lowercase letters, and digits. 2:"High": The password must contain special characters, uppercase letters, lowercase letters, and digits. 3:"Low": The password can contain any combination of the following four types: special characters, uppercase letters, lowercase letters, and digits. [NOTE:Special characters include ` ~ ! @ # $ % ^ & * ( ) - _ = + \ | [{ }] ; : ' " , < . > / ? and spaces.
SAFE_STRATEGY_DIFF_COMMUNITY	Optional	uint32	Whether the read-only community is different from the read-write community. **The value is described as follows:** The value can be "0" or "1".

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Parameter	Mandatory/Optional/Conditional	Type	Description
SAFE_STRATEGY_DIFF_USM_PWD	Optional	uint32	Whether the USM user authentication password is different from the encryption password. **The value is described as follows:** The value can be "0" or "1".
SAFE_STRATEGY_DIFF_USM_NAME	Optional	uint32	Whether the USM user password is different from the user name or reversed user name. **The value is described as follows:** The value can be "0" or "1".
SAFE_STRATEGY_LOCK_TIME	Optional	uint32	Lockout time for the IP address of the network management software. **The value is described as follows:** The value is an integer from 10 to 3600, expressed in seconds. **Unit:**s
SAFE_STRATEGY_CHECK_TIME	Optional	uint32	Interval for checking consecutive authentication failures. **The value is described as follows:** The value is an integer from 1 to 600, expressed in seconds. **Unit:**s

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Parameter	Mandatory/Optional/Conditional	Type	Description
SAFE_STRATEGY_RETRY_TIMES	Optional	uint32	Consecutive authentication failure times. **The value is described as follows:** The value is an integer from 3 to 100. **Unit:**times

Result

N/A

Example

- Modifying the minimum length of the community and USM user password.

```
Request: PUT /deviceManager/rest/2102353JMM10KA000013/common/snmp_security_policies
{
   "SAFE_STRATEGY_MIN_LENGTH": 10
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.3.5 Interface for Modifying USM User Information

Function

This interface is used to modify USM user information.

HighRisk

You are about to modify the USM user. If the security authentication protocol and data encryption protocol are at a low security level, security risks may exist.

Suggestion: You are advised to set the security authentication protocol SHA256 or a higher security level and the data encryption protocol AES or a higher security level for the USM user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_usm

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_USM_AUTH_PROT	Optional	enum	Authentication protocol type. **The value is described as follows:** 0: MD5 1: NONE 3: SHA 4: SHA224 5: SHA256 6: SHA384 7: SHA512
CMO_USM_PASSWD	Conditional	string	Authentication password. **Note:** 1. For the user to be modified that has configured CMO_USM_PASSWD (no matter whether the protocol is NONE), if CMO_USM_PASSWD is not modified, the latest delivered password will be used. 2. For the user to be modified that does not configure CMO_USM_PASSWD, if the value of CMO_USM_AUTH_PROT changes from NONE to MD5 or SHA, delivering the field is mandatory; if the value changes to NONE, delivering the field is optional.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_USM_PRIV_PASSWD	Conditional	string	Data encryption password. **Note:** 1. For the user to be modified that has configured CMO_USM_PRIV_PASSWD (no matter whether the protocol is NONE), if CMO_USM_PRIV_PASSWD is not modified, the latest delivered password will be used. 2. For the user to be modified that does not configure CMO_USM_PRIV_PASSWD, if the value of CMO_USM_PRIV_PROT changes from NONE to DES, 3DES, or AES, delivering the field is mandatory; if the value changes to NONE, delivering the field is optional.
CMO_USM_PRIV_PROT	Optional	enum	Data encryption protocol type. **The value is described as follows:** 0: NONE 2: DES 3: 3DES 4: AES 20: AES192 21: AES256
CMO_USM_USER	Mandatory	string	Security user name. **Length:**4~32
CMO_USM_USER_LEVEL	Optional	uint16	User level. **The value is described as follows:** 0: read/write user 1: read-only user

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	User ID.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 242: SNMP_USM

Example

- Modifying USM user information.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snmp_usm
{
    "CMO_USM_AUTH_PROT": "5",
    "CMO_USM_PASSWD": "Admin@123",
    "CMO_USM_PRIV_PASSWD": "Admin@1234",
    "CMO_USM_PRIV_PROT": "21",
    "CMO_USM_USER": "test",
    "CMO_USM_USER_LEVEL": "0",
    "TYPE": 242
}

Response: {
    "data": {
        "ID": "test",
        "TYPE": 242
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.1.4 Query

2.2.1.4.1 Interface for Batch Querying SNMP Trap Settings

Function

This interface is used to batch query SNMP Trap settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address.
CMO_TRAP_SERVER_PORT	Mandatory	string(uint32)	Trap server port. **The value is described as follows:** 1 to 65535.
CMO_TRAP_SERVER_USER	Mandatory	string	USM username.
ID	Mandatory	string	USM user name.
CMO_TRAP_SERVER_TYPE	Mandatory	string(enum)	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string
CMO_TRAP_VERSION	Mandatory	string(enum)	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3
TYPE	Mandatory	string	Type number of the managed object. **The value is described as follows:** 240: SNMP trap address

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Example

- Batch querying SNMP Trap settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/snmp_trap_addr

Response: {
   "data": [
      {
         "CMO_TRAP_SERVER_IP": "192.168.0.1",
         "CMO_TRAP_SERVER_PORT": "162",
         "CMO_TRAP_SERVER_TYPE": "3",
         "CMO_TRAP_SERVER_USER": "dddddd",
         "CMO_TRAP_VERSION": "3",
         "ID": "0",
         "TYPE": 240
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.4.2 Interface for Batch Querying USM User Information

Function

This interface is used to batch query USM user information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_usm

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 242: SNMP_USM
ID	Mandatory	string	USM user ID.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_USM_AUTH_PROT	Mandatory	string(enum)	Authentication protocol type. **The value is described as follows:** 0: MD5 1: NONE 3: SHA 4: SHA224 5: SHA256 6: SHA384 7: SHA512
CMO_USM_ISDEFAULT	Mandatory	string(bool)	Whether the USM user is a default user. **The value is described as follows:** true: yes false: no **Note:**Deprecated.
CMO_USM_PRIV_PROT	Mandatory	string(enum)	Data encryption protocol type. **The value is described as follows:** 0: NONE 2: DES 3: 3DES 4: AES 20: AES192 21: AES256
CMO_USM_USER	Mandatory	string	Security user name.
CMO_USM_USER_LEVEL	Mandatory	string(uint16)	User level. **The value is described as follows:** 0: read/write user 1: read-only user

Example

- Batch querying USM user information.

  Request: GET /deviceManager/rest/210235843910E6000009/snmp_usm

  Response:

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```
{
  "data": [
    {
      "CMO_USM_AUTH_PROT": "3",
      "CMO_USM_ISDEFAULT": "false",
      "CMO_USM_PRIV_PROT": "4",
      "CMO_USM_USER": "dddddd",
      "CMO_USM_USER_LEVEL": "0",
      "ID": "dddddd",
      "TYPE": 242
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.2.1.4.3 Interface for Querying SNMP Configuration Information

Function

This interface is used to query SNMP configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/common/snmp_protocol

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
SNMP_ADDRESS_IPV4	Mandatory	string	IPv4 address. **The value is described as follows:** .*
SNMP_PORT	Mandatory	uint32	Port. **The value is described as follows:** The value is 161 or an integer from 20000 to 20100.

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Parameter	Mandatory/ Conditional	Type	Description
SYS_ROOTOID	Mandatory	string	OID of the system root node. **The value is described as follows:** .*
SYS_DESC	Mandatory	string	Default system description. **The value is described as follows:** .*
SNMP_NODE_CODE	Mandatory	string	Node code. **The value is described as follows:** .*
SNMP_NODE_TYPE	Mandatory	uint32	Node type. **The value is described as follows:** *
SYSS_OBJID	Mandatory	string	System ID. **The value is described as follows:** .*
SNMP_CONTEXTNAME	Mandatory	string	Context name. **The value is described as follows:** .*
SNMP_ENGINEBOOTS	Mandatory	uint32	Number of times that the SNMP service is restarted. **The value is described as follows:** *
SNMP_SNMPV1V2C_STATUS	Mandatory	snmpv1v2c_status_e	V1V2 switch status. **The value is described as follows:** The value can be "0" or "1".

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Parameter	Mandatory/ Conditional	Type	Description
SNMP_UNIQUE_ENGINEID_SWITCH	Mandatory	snmp_same_engineid_switch	Whether the engine ID in the SNMP service is the same between controllers. **The value is described as follows:** The value can be 0 or 1.
TENANCYID	Mandatory	snmp_write_community_switch	Whether the write community to be queried is displayed. **The value is described as follows:** The value can be 0 or 1.

Example

- Querying SNMP configurations.

```
Request: GET /deviceManager/rest/2102353JMM10KA000013/common/snmp_protocol

Response: {
   "data": {
      "SNMP_ADDRESS_IPV4": "",
      "SNMP_CONTEXTNAME": "Array",
      "SNMP_ENGINEBOOTS": "2",
      "SNMP_NODE_CODE": "Array",
      "SNMP_NODE_TYPE": "5070101",
      "SNMP_PORT": "161",
      "SNMP_SNMPV1V2C_STATUS": "0",
      "SNMP_UNIQUE_ENGINEID_SWITCH": "0",
      "SYSS_OBJID": "1.3.6.1.4.1.2011.2.91",
      "SYS_DESC": "ISM SNMP Agent",
      "SYS_ROOTOID": "1.3.6.1.4.1",
      "TENANCYID": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.4.4 Interface for Querying SNMP Security Policy Information

Function

This interface is used to query SNMP security policy information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/common/snmp_security_policies

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Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
SAFE_STRATEGY_MIN_LENGTH	Mandatory	uint32	Minimum length of the community and USM user password. **The value is described as follows:** The value is an integer from 8 to 32.
SAFE_STRATEGY_MAX_LENGTH	Mandatory	uint32	Maximum length of the community and USM user password. **The value is described as follows:** The value is an integer from 8 to 32.

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Parameter	Mandatory/ Conditional	Type	Description
SAFE_STRATEGY_PWD_COMPLEX	Mandatory	uint32	Requirement on the community and USM user password. **The value is described as follows:** The value can be "Normal", "Low", or "High", where: 1:"Normal": The password must contain special characters and at least two types of the following characters: uppercase letters, lowercase letters, and digits. 2:"High": The password must contain special characters, uppercase letters, lowercase letters, and digits. 3:"Low": The password can contain any combination of the following four types: special characters, uppercase letters, lowercase letters, and digits. [NOTE:Special characters include ` ~ ! @ # $ % ^ & * ( ) - _ = + \ | [{ }] ; : ' " , < . > / ? and spaces.
SAFE_STRATEGY_DIFF_COMMUNITY	Mandatory	uint32	Whether the read-only community is different from the read-write community. **The value is described as follows:** The value can be "yes" or "no". 0: no; 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
SAFE_STRATEGY_DIFF_USM_PWD	Mandatory	uint32	Whether the USM user authentication password is different from the encryption password. **The value is described as follows:** The value can be "yes" or "no". 0: no; 1: yes
SAFE_STRATEGY_DIFF_USM_NAME	Mandatory	uint32	Whether the USM user password is different from the user name or reversed user name. **The value is described as follows:** The value can be "yes" or "no". 0: no; 1: yes
SAFE_STRATEGY_LOCK_TIME	Mandatory	uint32	Lockout time for the IP address of the network management software. **The value is described as follows:** The value is an integer from 10 to 3600, expressed in seconds. **Unit:**s
SAFE_STRATEGY_CHECK_TIME	Mandatory	uint32	Interval for checking consecutive authentication failures. **The value is described as follows:** The value is an integer from 1 to 600, expressed in seconds. **Unit:**s

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Parameter	Mandatory/ Conditional	Type	Description
SAFE_STRATEGY_RETRY_TIMES	Mandatory	uint32	Consecutive authentication failure times. **The value is described as follows:** The value is an integer from 3 to 100. **Unit:**times

Example

- Querying SNMP security policy information.

```
Request: GET /deviceManager/rest/2102353JMM10KA000013/common/snmp_security_policies

Response: {
   "data": {
      "SAFE_STRATEGY_CHECK_TIME": "60",
      "SAFE_STRATEGY_DIFF_COMMUNITY": "1",
      "SAFE_STRATEGY_DIFF_USM_NAME": "1",
      "SAFE_STRATEGY_DIFF_USM_PWD": "1",
      "SAFE_STRATEGY_LOCK_TIME": "180",
      "SAFE_STRATEGY_MAX_LENGTH": "32",
      "SAFE_STRATEGY_MIN_LENGTH": "8",
      "SAFE_STRATEGY_PWD_COMPLEX": "0",
      "SAFE_STRATEGY_RETRY_TIMES": "6"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.4.5 Interface for Querying SNMP Trap Settings

Function

This interface is used to query SNMP Trap settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	SNMP trap server ID. **The value is described as follows:** The SNMP trap server ID can be obtained through Interface for Batch Querying SNMP Trap Settings. **Length:**1

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address.
CMO_TRAP_SERVER_PORT	Mandatory	string(uint32)	Trap server port. **The value is described as follows:** 1 to 65535.
CMO_TRAP_SERVER_USER	Mandatory	string	USM user name.
ID	Mandatory	string	SNMP trap server ID.
CMO_TRAP_SERVER_TYPE	Mandatory	string(enum)	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string

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Parameter	Mandatory/ Conditional	Type	Description
CMO_TRAP_VERSION	Mandatory	string(enum)	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3
TYPE	Mandatory	string	Type number of the managed object. **The value is described as follows:** 240: SNMP trap address

Example

- Querying SNMP Trap settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/snmp_trap_addr/0

Response: {
   "data": {
      "CMO_TRAP_SERVER_IP": "192.168.0.1",
      "CMO_TRAP_SERVER_PORT": "162",
      "CMO_TRAP_SERVER_TYPE": "3",
      "CMO_TRAP_SERVER_USER": "dddddd",
      "CMO_TRAP_VERSION": "3",
      "ID": "0",
      "TYPE": 240
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.1.4.6 Interface for Querying USM User Information

Function

This interface is used to query USM user information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_usm/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	USM user ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 242: SNMP_USM
ID	Mandatory	string	USM user ID.
CMO_USM_AUTH_PROT	Mandatory	string(enum)	Authentication protocol type. **The value is described as follows:** 0: MD5 1: NONE 3: SHA 4: SHA224 5: SHA256 6: SHA384 7: SHA512
CMO_USM_ISDEFAULT	Mandatory	string(bool)	Whether the USM user is a default user. **The value is described as follows:** true: yes false: no **Note:**Deprecated.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_USM_PRIV_PROT	Mandatory	string(enum)	Data encryption protocol type. **The value is described as follows:** 0: NONE 2: DES 3: 3DES 4: AES 20: AES192 21: AES256
CMO_USM_USER	Mandatory	string	Security user name.
CMO_USM_USER_LEVEL	Mandatory	string(uint16)	User level. **The value is described as follows:** 0: read/write user 1: read-only user

Example

- Querying USM user information.

```
Request: GET /deviceManager/rest/210235843910E6000009/snmp_usm/dddddd

Response:
{
 "data": {
  "CMO_USM_AUTH_PROT": "3",
  "CMO_USM_ISDEFAULT": "false",
  "CMO_USM_PRIV_PROT": "4",
  "CMO_USM_USER": "dddddd",
  "CMO_USM_USER_LEVEL": "0",
  "ID": "dddddd",
  "TYPE": 242
 },
 "error": {
  "code": 0,
  "description": "0"
 }
}
```

2.2.1.5 Others

2.2.1.5.1 Interface for Testing an SNMP Trap Server Address

Function

This interface is used to test an SNMP Trap server address.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snmp_trap_addr/send_test_trapmsg

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TRAP_SERVER_PORT	Mandatory	uint32	Trap server port. **The value is described as follows:** 1 to 65535.
CMO_TRAP_SERVER_USER	Conditional	string	USM user name. **Length:**4~32 **Note:**This field is delivered only when the Trap server type is SNMPv3.
CMO_TRAP_SERVER_IP	Mandatory	string	Trap server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address.
CMO_TRAP_VERSION	Mandatory	enum	Trap version. **The value is described as follows:** 1: SNMPv1 2: SNMPv2c 3: SNMPv3
CMO_TRAP_SERVER_TYPE	Mandatory	enum	Trap server type. **The value is described as follows:** 1: Parsed 2: Original 3: All 5: Parsed time string 6: Original time string

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Result

N/A

Example

- Testing an SNMP Trap server address.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snmp_trap_addr/send_test_trapmsg
{
   "CMO_TRAP_SERVER_IP":"192.168.0.1",
   "CMO_TRAP_SERVER_PORT":"162",
   "CMO_TRAP_SERVER_TYPE":"3",
   "CMO_TRAP_SERVER_USER":"dddddd",
   "CMO_TRAP_VERSION":"3"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2 alarm

2.2.2.1 Add

2.2.2.1.1 Interface for Adding Receiver Server Addresses

Function

This interface is used to add receiver server addresses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/syslog_addip

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_SYSLOG_SERVER_IP	Mandatory	string	Receiver server addresses. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~255

Result

N/A

Example

- Adding receiver server addresses.

```
Request: POST /deviceManager/rest/210235843710E7000007/syslog_addip

{
   "CMO_ALARM_SYSLOG_SERVER_IP": "server"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.2 Delete

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2.2.2.2.1 Interface for Removing Receiver Server Addresses

Function

This interface is used to remove receiver server addresses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/syslog_removeip

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_SYSLOG_SERVER_IP	Mandatory	string	Receiver server addresses. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**1~255

Result

N/A

Example

- Removing receiver server addresses.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/syslog_removeip
{
   "CMO_ALARM_SYSLOG_SERVER_IP":"1.1.1.1"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.3 Modify

2.2.2.3.1 Interface for Modifying Alarm Masking

Function

This interface is used to modify alarm masking.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_definition

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_ID	Mandatory	uint64	Alarm ID.
enableClose	Mandatory	bool	Switch of the alarm masking function. **The value is described as follows:** true: enable false: disable

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE			Indicates an alarm type.

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Example

- Enabling alarm masking.

```
Request: PUT /deviceManager/rest/210235843910E6000009/alarm_definition
{
   "CMO_ALARM_ID": "64425164820",
   "enableClose": true
}

Response: {
   "data": {
      "TYPE": 16435
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Disabling alarm masking.

```
Request: PUT /deviceManager/rest/210235843910E6000009/alarm_definition
{
   "CMO_ALARM_ID": "64425164820",
   "enableClose": false
}

Response: {
   "data": {
      "TYPE": 16435
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.3.2 Interface for Modifying Remote Alarm Settings

Function

This interface is used to modify remote alarm settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_alarm

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_HEALTH_WATCH_INFO_PERIOD	Mandatory	uint32	Period of remote alarm transmission. **The value is described as follows:** 1~168

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_HEALTH_WATCH_INFO_ENABLE	Mandatory	uint32	Remote alarm transmission switch. **The value is described as follows:** 0: disable 1: enable

Result

N/A

Example

- Modifying remote alarm settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/remote_alarm
{
    "CMO_HEALTH_WATCH_INFO_ENABLE": 1,
    "CMO_HEALTH_WATCH_INFO_PERIOD": 168
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.3.3 Interface for Modifying the Address Information About a Storage System Maintenance Terminal

Function

This interface is used to modify the address information about a storage system maintenance terminal.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/client_info

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_CLIENT_NAME	Mandatory	string	Address information about a storage system maintenance terminal. **The value is described as follows:** The value contains 1 to 511 characters,excluding single quotation marks (').

Result

N/A

Example

- Modifying the address information about a storage system maintenance terminal.

```
Request: PUT /deviceManager/rest/210235843910E6000009/client_info
{
    "CMO_CLIENT_NAME": "clientName"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.4 Query

2.2.2.4.1 Interface for Batch Querying Alarm Types

Function

This interface is used to batch query alarm types.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ALARM_DEFINITION_OBJ

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
language	Optional	enum	Language. **The value is described as follows:** 1:English 2:Chinese **Note:**Default:English.

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_ALARM_OBJ_NAME	Mandatory	string	Name.
CMO_ALARM_OBJ_TYPE	Mandatory	string(uint32)	Type.
id	Mandatory	string(uint32)	Sequence number.
type	Mandatory	enum	ID of the managed object. 16508 indicates that the managed object is an alarm object. **The value is described as follows:** 16508

Example

- Batch querying alarm types.

```
Request: GET  /deviceManager/rest/210235843710E7000007/ALARM_DEFINITION_OBJ?language=2
Response:
{
  "data": [
    {
      "CMO_ALARM_OBJ_NAME": "port",
      "CMO_ALARM_OBJ_TYPE": "6",
      "ID": "0",
      "TYPE": 16508
    },
    {
      "CMO_ALARM_OBJ_NAME": "disk",
      "CMO_ALARM_OBJ_TYPE": "10",
      "ID": "1",
      "TYPE": 16508
    },
    {
```

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```
    "CMO_ALARM_OBJ_NAME": "LUN",
    "CMO_ALARM_OBJ_TYPE": "11",
    "ID": "2",
    "TYPE": 16508
   },...
 ],
 "error": {
   "code": 0,
   "description": "0"
 }
}
```


2.2.2.4.2 Interface for Querying Alarm Dump Settings

Function

This interface is used to query alarm dump settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_restore

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_ALARM_RESTORE_ENABLE	Mandatory	string(uint32)	Switch of automatic dump. **The value is described as follows:** 0:Off 1:On
CMO_ALARM_RESTORE_ADDRESS	Mandatory	string	Address of the dump server. **The value is described as follows:** IPV4,IPV6 is supported.
CMO_ALARM_RESTORE_VISUALPATH	Mandatory	string	Save path of dumped files.
CMO_ALARM_RESTORE_ACCOUNT	Mandatory	string	User name.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_ALARM_RESTORE_PROTOCOL	Mandatory	string(enum)	Protocol. **The value is described as follows:** 0: FTP 1: SFTP

Example

- Querying alarm dump settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/alarm_restore

Response: {
    "data": {
        "CMO_ALARM_RESTORE_ACCOUNT": "root",
        "CMO_ALARM_RESTORE_ADDRESS": "10.169.3.22",
        "CMO_ALARM_RESTORE_ENABLE": "1",
        "CMO_ALARM_RESTORE_PROTOCOL": "1",
        "CMO_ALARM_RESTORE_VISUALPATH": "/optt"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.4.3 Interface for Querying Alarm Maskings

Function

This interface is used to query masked alarms.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_definition

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters CMO_ALARM_OBJ_TYPE, CMO_ALARM_LEVEL, and enableClose are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
language	Optional	enum	Language. **The value is described as follows:** 1: EN 2: ZH_CN **Default:**1: EN

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16435: ALARM_DEFINITION

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Serial number of an alarm.
CMO_ALARM_ID	Mandatory	string(uint64)	Alarm ID.
CMO_ALARM_LEVEL	Mandatory	string(uint32)	Alarm severity. **The value is described as follows:** 2: informational 3: warning 5: major 6: critical
CMO_ALARM_NAME	Mandatory	string	Alarm name.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_ALARM_OBJ_TYPE	Mandatory	string(enum)	Alarm object type. **The value is described as follows:** 6: port 10: disk 11: LUN 14: host group 21: host 23: power 27: snapshot 49: event 103: performance 113: om 201: system 202: user 206: enclosure 207: controller 208: expansion module 209: interface module 210: backup power module 211: fan module 216: storage pool 221: consistency group 224: remote device 232: PCIe data switch 234: SFP optical transceiver 244: license 245: mapping view 253: LUN migration 256: LUN group 257: port group 263: remote replication pair 266: disk domain 268: cache partition 269: QoS

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Parameter	Mandatory/ Conditional	Type	Description
			414: ODX 447: Cache 525: iSNS 558: upgrade 562: Ethernet network port 580: initiator 815: block device 818: DeviceManager 822: SystemReporter 823: server link 15361: HyperMetro pair 15362: HyperMetro domain 15363: quorum server 15364: HyperMetro consistency group 15365: quorum server link 16398: protocol 16446: resource user 20480: certificate management 20481: pair
enableClose	Mandatory	string(bool)	Switch of the alarm masking function. **The value is described as follows:** true: enable false: disable
isExistAlarm	Mandatory	string(bool)	Whether uncleared fault alarms exist. **The value is described as follows:** true: yes false: no

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Example

- Querying masked alarms.

```
Request: GET /deviceManager/rest/210235843910E6000009/alarm_definition?
language=1&range=[0-100]

Response: {
   "data": [
      {
         "CMO_ALARM_ID": "14155777",
         "CMO_ALARM_LEVEL": "5",
         "CMO_ALARM_NAME": "Storage Pool Remaining Capacity Is Insufficient",
         "CMO_ALARM_OBJ_TYPE": "216",
         "ID": "0",
         "TYPE": 16435,
         "enableClose": "false",
         "isExistAlarm": "false"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.4.4 Interface for Querying Current Alarm Information

Function

This interface is used to query the list of current alarms.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm/currentalarm

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sortby	Optional	string	Sorting fields. Sorting the startTime field is supported. **The value is described as follows:** startTime,d indicates a descending order. **Default:**startTime,d **Note:**Currently, only a descending order is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters level, startTime, alarmObjType, and sequence are supported. **Note:**For the value of the "alarmObjType" field, refer to the "CMO_ALARM_OBJ_TYPE" output field in the "Interface for Batch Querying Alarm Types".
range	Optional	string	Range query is supported. **Note:**A maximum of 250 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0:UTC 1:Local time

Result

Parameter	Mandatory/Conditional	Type	Description
alarmStatus	Mandatory	enum	Alarm status. **The value is described as follows:** 1:Unrecovered 2:Cleared 4:Recovered
clearName	Mandatory	string	User name that clears the alarm.
detail	Mandatory	string	Alarm details.

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Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Type. **The value is described as follows:** 1: alarm
recoverTime	Mandatory	uint64	Time when the fault is rectified.
clearTime	Mandatory	uint64	Time when the alarm is cleared.
startTime	Mandatory	uint64	Time when the alarm is generated.
eventID	Mandatory	uint64	Decimal alarm ID.
level	Mandatory	enum	Alarm severity. **The value is described as follows:** 3: warning 5: major 6: critical
description	Mandatory	string	Alarm description.
sequence	Mandatory	uint32	Alarm SN.
name	Mandatory	string	Alarm name.
suggestion	Mandatory	string	Alarm clear suggestion.
alarmObjType	Mandatory	string	Type of the alarm object.
eventParam	Mandatory	string	Param of the alarm.
strEventID	Mandatory	string	Hexadecimal ID of the alarm.
confirmTime	Mandatory	uint64	Time when the alarm is confirmed.
location	Mandatory	string	Information about the module where the alarm occurred.
sourceType	Mandatory	string	Type of the alarm source.
sourceID	Mandatory	string	ID of the alarm source.

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Parameter	Mandatory/ Conditional	Type	Description
room	Mandatory	string	The field is meaningless. **Note:**The field is not used.
position	Mandatory	uint32	The field is meaningless. **Note:**The field is not used.

Example

- Querying the first 100 major alarms reported between 2015-12-01 and 2015-12-31 in descending order by time.

```
Request: GET /deviceManager/rest/210235843710E7000007/alarm/currentalarm?filter=level::5%20and
%20startTime:[1448899200,1451577599]&sortby=startTime,d&range=[0-100]

Response:
{
   "data": [
     {
      "alarmObjType": 244,
      "alarmStatus": 1,
      "clearName": 0,
      "clearTime": 0,
      "confirmTime": 0,
      "description": "The license feature &#40;SmartDedupe&#40;for FS&#41;&#41; has expired.",
      "detail": "The license feature &#40;SmartDedupe&#40;for FS&#41;&#41; has expired and
entered the trial period. It will become invalid the day after 2016-01-10.",
      "eventID": 4039704578,
      "eventParam": "51,2016-01-10",
      "level": 5,
      "location": "param1=admin,param2= 100.136.1.96",
      "name": "License Has Expired",
      "position": 0,
      "recoverTime": 0,
      "room": "",
      "sequence": 17333,
      "sourceID": "",
      "sourceType": "",
      "startTime": 1450588315,
      "strEventID": "0xF0C90002",
      "suggestion": "Purchase and import required license files.",
      "type": 1
    }, ...
  ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.4.5 Interface for Querying Email Configurations

Function

This interface is used to query email configurations.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/EMAIL

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_EMAIL_LEVEL_ENABLE	Mandatory	string(enum)	Whether the alarm severity is displayed in the email title. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_NEED_SEND	Mandatory	string(uint32)	Whether the email is sent. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	string(uint32)	Whether SMTP authentication is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_RECEIVER	Mandatory	string	List of email addresses for receiving emails.
CMO_EMAIL_SUBJECT	Mandatory	string	Email title prefix.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_EMAIL_SSL	Mandatory	string(uint32)	Whether to use the SSL connection. **The value is described as follows:** 0: no 1: SSL/TLS 3: STARTTLS
CMO_EMAIL_SMTP_USER_NAME	Mandatory	string	User name for identity authentication.
CMO_EMAIL_SENDER	Mandatory	string	Sender.
CMO_EMAIL_SMTP_SERVER	Mandatory	string	Address of the SMTP server.
CMO_EMAIL_SMTP_SERVER_PORT	Mandatory	string(uint32)	SMTP port number. **The value is described as follows:** 1 to 65535.
eventEmailReceiver	Mandatory	string	List of email addresses for receiving events.
emailAttachmentSize	Mandatory	uint32	Maximum size of an email attachment. **The value is described as follows:** 1 to 100.
transType	Mandatory	enum	CHS backhaul channel selection. **The value is described as follows:** 0: HTTPS 1: SMTP
nameEnable	Mandatory	enum	Whether the storage name is displayed in the email title. **The value is described as follows:** 0: no 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
emailReceiverNoUse	Mandatory	string	Whether an email is received. **The value is described as follows:** 0: no 1: yes
descriptionEnable	Mandatory	enum	Whether the alarm description is displayed in the email title.
caEnabled	Mandatory	uint32	Whether CA certificate authentication is enabled during email sending. **The value is described as follows:** 1: yes 0: no
alarmIdEnable	Mandatory	enum	Whether the alarm description is displayed in the email title. **The value is described as follows:** 0: no 1: yes

Example

- Querying email configurations.

```
Request: GET /deviceManager/rest/2102353TXP10L8000009/EMAIL

Response:{
  "data": [{
    "CMO_EMAIL_LEVEL_ENABLE": "0",
    "CMO_EMAIL_NEED_SEND": "0",
    "CMO_EMAIL_NEED_SMTP_CHECK": "0",
    "CMO_EMAIL_RECEIVER": ",,",
    "CMO_EMAIL_SENDER": "",
    "CMO_EMAIL_SMTP_SERVER": "",
    "CMO_EMAIL_SMTP_SERVER_PORT": "25",
    "CMO_EMAIL_SMTP_USER_NAME": "",
    "CMO_EMAIL_SSL": "3",
    "CMO_EMAIL_SUBJECT": "",
    "alarmIdEnable": "0",
    "caEnabled": "0",
    "descriptionEnable": "0",
    "emailAttachmentSize": "10",
    "emailReceiverNoUse": "",
```

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```
    "eventEmailReceiver": "",
    "nameEnable": "0",
    "transType": "0"
  }],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.2.2.4.6 Interface for Querying Email Notifications

Function

This interface is used to query email notifications.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/email

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_EMAIL_LEVEL_ENABLE	Conditional	string(enum)	Whether to show alarm severities in email titles. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_NEED_SEND	Mandatory	string(uint32)	Whether to send emails. **The value is described as follows:** 0: no 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	string(uint32)	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_RECEIVER	Mandatory	string	Recipient email address list.
CMO_EMAIL_SUBJECT	Conditional	string	Email title prefix.
CMO_EMAIL_SSL	Mandatory	string(uint32)	Whether SSL connections are used. **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS
CMO_EMAIL_SMTP_USER_NAME	Mandatory	string	Identification user name.
CMO_EMAIL_SENDER	Mandatory	string	Sender.
CMO_EMAIL_SMTP_SERVER	Mandatory	string	SMTP service address.
CMO_EMAIL_SMTP_SERVER_PORT	Mandatory	string(uint32)	SMTP port number. **The value is described as follows:** 1 to 65535.
eventEmailReceiver	Mandatory	string	Event recipient email address list.
emailAttachmentSize	Mandatory	uint32	Maximum size of an email attachment. **The value is described as follows:** 1 to 100.
transType	Mandatory	enum	Email channel selection of the Call Home service. **The value is described as follows:** 0: HTTPS 1: SMTP

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Parameter	Mandatory/ Conditional	Type	Description
alarmIdEnable	Mandatory	enum	Indicates whether to display the alarm ID in the email title. **The value is described as follows:** 0: This switch is turned off. 1: This switch is turned on.
descriptionEnable	Mandatory	enum	Indicates whether to display the alarm description in the email title. **The value is described as follows:** 0: This switch is turned off. 1: This switch is turned on.
nameEnable	Mandatory	enum	Indicates whether to display the storage name in the email title. **The value is described as follows:** 0: This switch is turned off. 1: This switch is turned on.
showAlarmSeverity-ForAlarmTitle	Mandatory	enum	Indicates whether to display alarm severity information in email titles. **The value is described as follows:** 0: This switch is turned off. 1: This switch is turned on.
esnEnable	Mandatory	enum	Indicates whether to display the ESN in the email title. **The value is described as follows:** 0: This switch is turned off. 1: This switch is turned on.

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Example

- Querying email notifications.

```
Request: GET /deviceManager/rest/210235843710E7000007/email

Response: {
   "data": {
      "CMO_EMAIL_LEVEL_ENABLE": "0",
      "CMO_EMAIL_NEED_SEND": "1",
      "CMO_EMAIL_NEED_SMTP_CHECK": "1",
      "CMO_EMAIL_RECEIVER": "2313999329@qq.com;huawei123@123.com,,",
      "CMO_EMAIL_SENDER": "23139993219@qq.com",
      "CMO_EMAIL_SMTP_SERVER": "100.136.1.35",
      "CMO_EMAIL_SMTP_SERVER_PORT": "24",
      "CMO_EMAIL_SMTP_USER_NAME": "asdasd",
      "CMO_EMAIL_SSL": "3",
      "CMO_EMAIL_SUBJECT": "23",
      "alarmIdEnable": "0",
      "caEnabled": "0",
      "descriptionEnable": "0",
      "emailAttachmentSize": "10",
      "emailReceiverNoUse": "",
      "eventEmailReceiver": "2313999329@qq.com;huawei123@123.com",
      "nameEnable": "0",
      "transType": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.4.7 Interface for Querying Historical Alarms and Events Information

Function

This interface is used to query historical alarms and events.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm/historyalarm

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: level, startTime, alarmStatus, type, alarmObjType, sequence, startSeq, and endSeq.
range	Optional	string	Range query is supported.
sortby	Optional	string	Sorting fields. startTime is supported. **The value is described as follows:** startTime,d indicates a descending order. **Default:**startTime,d **Note:**Currently, only a descending order is supported.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
clearName	Mandatory	string	User name that clears the alarm.
detail	Mandatory	string	Alarm details.

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Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Type. **The value is described as follows:** 0: event 1: alarm 2: cleared alarm 3: operation log 4: run log
eventType	Mandatory	enum	Event type. **The value is described as follows:** 1: alarm 2: cleared alarm 3: operation log 4: run log
recoverTime	Mandatory	uint64	Time when the fault is rectified.
clearTime	Mandatory	uint64	Time when the alarm is cleared.
startTime	Mandatory	uint64	Time when the alarm is generated.
eventID	Mandatory	uint64	Decimal alarm ID.
level	Mandatory	enum	Alarm severity. **The value is described as follows:** 2: Info 3: Warning 5: Major 6: Critical
description	Mandatory	string	Alarm description.
sequence	Mandatory	uint32	Alarm SN.
name	Mandatory	string	Alarm name.
suggestion	Mandatory	string	Alarm clearance suggestion.
alarmObjType	Mandatory	string	Type of the alarm object.
eventParam	Mandatory	string	Alarm parameter.

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Parameter	Mandatory/ Conditional	Type	Description
strEventID	Mandatory	string	Hexadecimal ID of the alarm.
alarmStatus	Mandatory	enum	Alarm status. **The value is described as follows:** 1: Unrecovered 2: Cleared 4: Recovered
confirmTime	Mandatory	uint64	Time when the alarm is confirmed.
location	Mandatory	string	Information about the module where the alarm occurred.
sourceID	Mandatory	string	ID of the alarm source.
sourceType	Mandatory	string	Type of the alarm source.
alarmObjId	Mandatory	string	Alarm object ID.
position	Mandatory	unit32	This field has no service meaning. **The value is described as follows:** This field is discarded.
room	Mandatory	string	This field has no service meaning. **The value is described as follows:** This field is discarded.

Example

- Querying historical alarms and events generated between 2016-1-1 and 2016-1-31.

```
Request: GET /deviceManager/rest/210235843710E7000007/alarm/historyalarm?filter=level::2%20and%20startTime: [1642850173,1642850175]&sortby=startTime,d&range=[0-100]

Response: {
   "data": [
      {
         "alarmObjId": "",
         "alarmObjType": 562,
         "alarmStatus": -1,
         "clearName": 0,
         "clearTime": 0,
```

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```
            "confirmTime": 0,
            "description": "admin:50.64.145.87 failed to set the port IPv4 address (port ID
CTE0.A.IOM0.P3, IP address 129.123.12.12, subnet mask 255.255.0.0, gateway --).",
            "detail": "admin:50.64.145.87 failed to set the port IPv4 address (port ID CTE0.A.IOM0.P3, IP
address 129.123.12.12, subnet mask 255.255.0.0, gateway --). Error code: 0x40000613.",
            "eventID": 35248833429514,
            "eventParam": "admin:50.64.145.87,CTE0.A.IOM0.P3,129.123.12.12,255.255.0.0,,0x40000613",
            "eventType": 3,
            "level": 2,
            "location":
"user=admin:50.64.145.87,PortID=CTE0.A.IOM0.P3,ip=129.123.12.12,mask=255.255.0.0,gateway=--,Erro
rCode=0x40000613",
            "name": "Failed To Set A Port IPv4 Address",
            "position": 0,
            "recoverTime": 0,
            "room": "",
            "sequence": 1618,
            "sourceID": "",
            "sourceType": "",
            "startTime": 1642850174,
            "strEventID": "0x200F0232000A",
            "suggestion": "N/A.",
            "type": 0
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.2.2.4.8 Interface for Querying Remote Alarm Settings

Function

This interface is used to query remote alarm settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_alarm

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_HEALTH_WATCH_INFO_ENABLE	Mandatory	string(uint32)	Remote alarm transmission switch. **The value is described as follows:** 0: disable 1: enable
CMO_HEALTH_WATCH_INFO_PERIOD	Mandatory	string(uint32)	Period of remote alarm transmission. **The value is described as follows:** 1~168

Example

- Querying remote alarm settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_alarm

Response: {
   "data": [
      {
         "CMO_HEALTH_WATCH_INFO_ENABLE": "1",
         "CMO_HEALTH_WATCH_INFO_PERIOD": "168"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.4.9 Interface for Querying Short Message Notifications

Function

This interface is used to query short message notifications.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_sms

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SMS_NEED_SEND	Mandatory	string(uint32)	Whether to send short message.
CMO_SMS_RECEIVER	Mandatory	string	Recipient phone number.
CMO_SMS_SEND_COUNTRY	Mandatory	string(uint32)	Country code.
CMO_SMS_SERVICE_CENTRE	Mandatory	string	Short message service center phone number.
eventSmsReceiver	Mandatory	string	Event recipient phone number.

Example

- Querying short message notifications.

```
Request: GET /deviceManager/rest/210235843710E7000007/alarm_sms

Response: {
    "data": {
        CMO_SMS_NEED_SEND: "1",
        CMO_SMS_RECEIVER: "18224427430;1562364;156332364877777,156332364877777,",
        CMO_SMS_SEND_COUNTRY: "86",
        CMO_SMS_SERVICE_CENTRE: "+861234555",
        eventSmsReceiver: "18224427430;1562364;156332364877777"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.4.10 Interface for Querying Syslog Notification

Function

This interface is used to query Syslog notification.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/syslog

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
OM_MSG_OP_SET_ALARM_SYSLOG_CFG	Mandatory	string(enum)	Whether to enable the Syslog notification function. **The value is described as follows:** 0: disabled 1: enabled
CMO_ALARM_SYSLOG_SEVERITY	Mandatory	string(uint32)	Minimum severity that triggers alarm notification by syslog. **The value is described as follows:** 2: Info 3: Warning 5: Major 6: Critical
CMO_ALARM_SYSLOG_SERVER_IP	Mandatory	string	Receiver server addresses.
CMO_SYSLOG_ALARM_ENABLE	Mandatory	string(bool)	Whether to send alarms. **The value is described as follows:** true: enabled false: disabled
CMO_SYSLOG_ALARM_RECOVERY_ENABLE	Mandatory	string(bool)	Whether to send the alarm clearance notification. **The value is described as follows:** true: enabled false: disabled
CMO_SYSLOG_EVENT_ENABLE	Mandatory	string(bool)	Whether to send events. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
WHETHER_SEND_DEVICE_NAME	Mandatory	string(bool)	Whether to enable the function of sending device names. **The value is described as follows:** true: enabled false: disabled
SYSLOG_SERVER_PORT	Mandatory	string(uint32)	Port number.
SYSLOG_SERVER_CHANNEL_PROTOCOL	Mandatory	string(enum)	Transfer protocol. **The value is described as follows:** 1: UDP 2: TCP 3: TCP+SSL/TLS
CMO_DAIL_OUT_ENABLE	Mandatory	bool	Indicates whether to enable the Call Home service to send back audit log notifications. **The value is described as follows:** true: enabled false: disabled
CMO_SYSLOG_SECURITYLOG_ENABLE	Mandatory	bool	Indicates whether to send security logs. **The value is described as follows:** true: enabled false: disabled
syslogFormat	Mandatory	uint32	Syslog forwarding content format. **The value is described as follows:** 0: default format 1: CEF

Example

- Querying Syslog notification.

```
Request: GET /deviceManager/rest/210235843710E7000007/syslog

Response:
```

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```
{
  "data": [
    {
      "CMO_ALARM_SYSLOG_SERVER_IP": "test.com",
      "CMO_ALARM_SYSLOG_SEVERITY": "2",
      "CMO_DAIL_OUT_ENABLE": "true",
      "CMO_SYSLOG_ALARM_ENABLE": "true",
      "CMO_SYSLOG_ALARM_RECOVERY_ENABLE": "false",
      "CMO_SYSLOG_EVENT_ENABLE": "false",
      "CMO_SYSLOG_SECURITYLOG_ENABLE": "false",
      "OM_MSG_OP_SET_ALARM_SYSLOG_CFG": "1",
      "SYSLOG_SERVER_CHANNEL_PROTOCOL": "1",
      "SYSLOG_SERVER_PORT": "514",
      "syslogFormat": "1",
      "WHETHER_SEND_DEVICE_NAME": "false"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.2.2.4.11 Interface for Querying the Address Information About a Storage System Maintenance Terminal

Function

This interface is used to query the address information about a storage system maintenance terminal.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/client_info

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_CLIENT_NAME	Mandatory	string	Address information about a storage system maintenance terminal. **The value is described as follows:** The value contains 1 to 511 characters,excluding single quotation marks (').

Example

- Querying the address information about a storage system maintenance terminal.

```
Request: GET /deviceManager/rest/210235843910E6000009/client_info
{

}

Response: {
   "data": [
      {
         "CMO_CLIENT_NAME": "CLIENTINFO"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.4.12 Interface for Querying the Number of Current Alarms

Function

This interface is used to query the number of current alarms.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm/currentalarm/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters level, startTime, alarmObjType are supported. **Note:**For the value of the "alarmObjType" field, refer to the "CMO_ALARM_OBJ_TYPE" output field in the "Interface for Batch Querying Alarm Types".

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of alarms.

Example

- Querying the number of major alarms generated between 2015-12-01 and 2015-12-31.

```
Request: GET /deviceManager/rest/210235843710E7000007/alarm/currentalarm/count?
filter=level::5%20and%20startTime:[1448899200,1451577599]

Response:
{
    "data": {
        "COUNT": 35
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.4.13 Interface for Querying the Number of Historical Alarms and Events

Function

This interface is used to query the number of historical alarms and events.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm/historyalarm/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters level, startTime, alarmStatus, type, alarmObjType are supported. **Note:** For the value of the "alarmObjType" field, refer to the "CMO_ALARM_OBJ_TYPE" output field in the "Interface for Batch Querying Alarm Types". type: 0 event, 1 alarm, other event and alarm.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of alarms.

Example

- Querying the total number of historical alarms.

```
Request: GET /deviceManager/rest/210235843710E7000007/alarm/historyalarm/count

Response:
{
   "data": {
      "COUNT": 6776
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5 Others

2.2.2.5.1 Interface for Clearing an Alarm

Function

This interface is used to clear an alarm.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm/currentalarm

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sequence	Mandatory	uint32	Alarm SN.

Result

N/A

Example

- Clearing an alarm.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/alarm/currentalarm?sequence=3482

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.2 Interface for Sending Test Short Messages

Function

This interface is used to send test short messages.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_sms/send_test_sms

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SMS_SEND_COUNTRY	Mandatory	uint32	Country code. **The value is described as follows:** The value can be "0", "1", or "86".
CMO_SMS_RECEIVER	Mandatory	string	Recipient phone number.
CMO_SMS_SERVICE_CENTRE	Mandatory	string	Short message service center phone number. **Length:**3~31 **Note:**The phone number of the SM service center starts with +country code.
eventSmsReceiver	Optional	string	eventSmsReceiver.

Result

N/A

Example

- Sending test short messages.

```
Request: PUT /deviceManager/rest/210235843710E7000007/alarm_sms/send_test_sms
{
    "CMO_SMS_SEND_COUNTRY": "86",
    "CMO_SMS_RECEIVER": "82244251,82244251,",
    "CMO_SMS_SERVICE_CENTRE": "+8612225555233333366663366622",
    "eventSmsReceiver":"82244251"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.2.2.5.3 Interface for Setting Alarm Dump

Function

This interface is used to set alarm dump.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_restore

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_RESTORE_ADDRESS	Mandatory	string	Address of the dump server. **The value is described as follows:** IPv4 and IPv6 addresses are supported. **Length:**1~63
CMO_ALARM_RESTORE_VISUALPATH	Mandatory	string	Save path of the dumped file. **Length:**1~255
CMO_ALARM_RESTORE_ACCOUNT	Mandatory	string	User name. **Length:**1~63
CMO_ALARM_RESTORE_PASSWD	Conditional	string	Password. **Length:**1~63 **Note:**If the dump server address, dump file save path, user name, or protocol is different from the original configuration, the password is mandatory.
CMO_ALARM_RESTORE_PROTOCOL	Mandatory	enum	Protocol. **The value is described as follows:** 0: FTP 1: SFTP

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Result

N/A

Example

- Setting alarm dump.

```
Request: PUT /deviceManager/rest/210235843910E6000009/alarm_restore
{
    "CMO_ALARM_RESTORE_ACCOUNT": "root",
    "CMO_ALARM_RESTORE_ADDRESS": "10.169.3.22",
    "CMO_ALARM_RESTORE_PASSWD": "12345",
    "CMO_ALARM_RESTORE_PROTOCOL": "0",
    "CMO_ALARM_RESTORE_VISUALPATH": "/opt"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.4 Interface for Setting Alarm Dump Switch

Function

This interface is used to set alarm dump switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_restore/set_alarm_restore_enable

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_RESTORE_ENABLE	Mandatory	uint32	Alarm restore switch. **The value is described as follows:** 0: disable 1: enable

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Result

N/A

Example

- Setting alarm dump switch.

```
Request: PUT /deviceManager/rest/210235843910E6000009/alarm_restore/set_alarm_restore_enable

{
   "CMO_ALARM_RESTORE_ENABLE": "0"
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.5.5 Interface for Setting Email Notifications

Function

This interface is used to set email notifications.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/email

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SUBJECT	Optional	string	Email title prefix. **Length:**0~511
CMO_EMAIL_LEVEL_ENABLE	Optional	enum	Whether to show alarm severities in email titles. **The value is described as follows:** 0: no 1: yes **Default:**0: no
CMO_EMAIL_SENDER	Mandatory	string	Sender. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER	Mandatory	string	SMTP service address. **Length:**1~511 **Note:**One or two IP addresses can be delivered. The length of a single IP address is 255 bytes. If two IP addresses are delivered, separate them with commas (,).
CMO_EMAIL_NEED_SEND	Optional	enum	Whether to send emails. **The value is described as follows:** 0: no 1: yes **Default:**0: no
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	enum	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_SMTP_USER_NAME	Conditional	string	Verifies the user name. **Length:**1~63 **Note:**This field needs to be delivered when the value of CMO_EMAIL_NEED_SMTP_CHECK is 1.
CMO_EMAIL_SSL	Optional	uint32	Whether SSL connections are used. **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS **Default:**0: not encrypted

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER_PORT	Optional	uint32	SMTP port number. **The value is described as follows:** 1~65535 **Default:**25
CMO_EMAIL_RECEIVER	Conditional	string	Recipient email address list and alarm severity. For example, "1411559652@qq.com;2323999352@qq.com,1411559652@qq.com;2323999352@qq.com,1411559652@qq.com;2323999352@qq.com". Alarm severities (critical, major, and warning) are separated by commas (,). Recipient email addresses are separated by semicolons (;). **Note:**In the initialization scenario, a recipient email address list must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_USER_PASSWD	Conditional	string	Verifies the user password. **Note:** 1. When the value of CMO_EMAIL_NEED_SMTP_CHECK is 1 and the value of CMO_EMAIL_SMTP_SERVER or CMO_EMAIL_SMTP_SERVER_PORT changes, this field needs to be delivered. 2. When the value of CMO_EMAIL_NEED_SMTP_CHECK changes from 0 to 1, this field needs to be delivered.
eventEmailReceiver	Optional	string	Event recipient email address list. Recipient email addresses are separated by semicolons (;).
caEnabled	Optional	uint32	Whether to enable the CA certificate during email sending. **The value is described as follows:** 0: does not enable the CA certificate during email sending. 1: enables the CA certificate during email sending. **Default:**0
emailAttachmentSize	Optional	uint32	Maximum size of an email attachment. **The value is described as follows:** 1..100 **Default:**10 MB.

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Parameter	Mandatory/Optional/Conditional	Type	Description
transType	Optional	enum	Email channel selection of the Call Home service. **The value is described as follows:** 0: HTTPS 1: SMTP **Default:**HTTPS

Result

N/A

Example

- Setting email notifications.

```
Request: PUT /deviceManager/rest/210235843710E7000007/email
{
        "CMO_EMAIL_LEVEL_ENABLE": "0",
        "CMO_EMAIL_NEED_SEND": "1",
        "CMO_EMAIL_NEED_SMTP_CHECK": "0",
        "CMO_EMAIL_SENDER": "23139993219@qq.com",
        "CMO_EMAIL_RECEIVER":"ad@qq.com,,",
        "CMO_EMAIL_SMTP_SERVER": "100.136.1.35",
        "CMO_EMAIL_SMTP_SERVER_PORT": "24",
        "CMO_EMAIL_SSL": "3",
        "CMO_EMAIL_SUBJECT": "sd",
        "eventEmailReceiver":"ad@qq.com",
        "emailAttachmentSize": 10,
        "transType": 1

}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.6 Interface for Setting Short Message Notification

Function

This interface is used to set short message notification.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_sms

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SMS_SERVICE_CENTRE	Mandatory	string	Short message service center phone number. **Length:**3~31 **Note:**The phone number of the SM service center starts with +country code.
CMO_SMS_SEND_COUNTRY	Mandatory	string	Country code. **The value is described as follows:** The value can be "0", "1", or "86".
CMO_SMS_NEED_SEND	Mandatory	enum	Whether to send short messages. **The value is described as follows:** 0:no 1:yes
CMO_SMS_RECEIVER	Conditional	string	Recipient phone number and alarm severity. For example, "123456789;18225527432,123456789;18225527432,123456789;18225527432". Alarm severities (Critical, Major, and Warning) are separated by commas (,). Recipient phone numbers are separated by semicolons (;). **Note:**In the initialization scenario,a recipient phone number must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
eventSmsReceiver	Optional	string	Event recipient phone number. Recipient phone number are separated by semicolons (;).

Result

N/A

Example

- Setting short message notification.

```
Request: PUT/deviceManager/rest/210235843710E7000007/alarm_sms
{
   "CMO_SMS_SEND_COUNTRY": "86",
   "CMO_SMS_SERVICE_CENTRE": "+86123456789",
   "CMO_SMS_NEED_SEND": "1",
   "CMO_SMS_RECEIVER":  "18224427430;1562364;156332364877777,156332364877777,",
   "eventSmsReceiver": "18224427430;1562364;156332364877777"
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.2.2.5.7 Interface for Setting Syslog Notification

Function

This interface is used to set Syslog notification.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/syslog

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
OM_MSG_OP_SET_ALARM_SYSLOG_CFG	Optional	uint32	Whether to enable the Syslog notification function. **The value is described as follows:** 0: disabled 1: enabled
CMO_ALARM_SYSLOG_SEVERITY	Optional	uint32	Minimum severity that triggers alarm notification by syslog. **The value is described as follows:** 2: Info 3: Warning 5: Major 6: Critical

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_SYSLOG_SERVER_IP	Conditional	string	Receiver server addresses. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. A maximum of four addresses can be configured and separated with commas (,). **Length:**1-255 **Note:**The field must be delivered when parameter CMO_TEST_SYSLOG_SERVER (determining whether to detect connectivity of the server address) is true.
CMO_SYSLOG_ALARM_ENABLE	Optional	bool	Whether to send alarms. **The value is described as follows:** true: enabled false: disabled
CMO_SYSLOG_ALARM_RECOVERY_ENABLE	Optional	bool	Whether to send the alarm clearance notification. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SYSLOG_EVENT_ENABLE	Optional	bool	Whether to send events. **The value is described as follows:** true: enabled false: disabled
WHETHER_SEND_DEVICE_NAME	Optional	bool	Whether to enable the function of sending device names. **The value is described as follows:** true: enabled false: disabled
SYSLOG_SERVER_PORT	Conditional	uint32	Port number. **The value is described as follows:** 1 to 65535. **Note:**The field must be delivered when parameter CMO_TEST_SYSLOG_SERVER (determining whether to detect connectivity of the server address) is true.
SYSLOG_SERVER_CHANNEL_PROTOCOL	Conditional	enum	Transfer protocol. **The value is described as follows:** 1: UDP 2: TCP 3: TCP+SSL/TLS **Note:**The field must be delivered when parameter CMO_TEST_SYSLOG_SERVER (determining whether to detect connectivity of the server address) is true.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_TEST_SYSLOG_SERVER	Optional	bool	Whether to detect connectivity. **The value is described as follows:** true: yes false: no
CMO_DAIL_OUT_ENABLE	Optional	bool	Indicates whether to enable the Call Home service to send back audit log notifications. **The value is described as follows:** true: enabled false: disabled
CMO_SYSLOG_SECURITYLOG_ENABLE	Optional	bool	Indicates whether to send security logs. **The value is described as follows:** true: enabled false: disabled
syslogFormat	Optional	uint32	Syslog forwarding content format. **The value is described as follows:** 0: default format 1: CEF

Result

N/A

Example

- Setting Syslog notification.

```
Request: PUT /deviceManager/rest/210235843710E7000007/syslog

{
        "CMO_ALARM_SYSLOG_SERVER_IP": "8.46.138.125",
        "CMO_ALARM_SYSLOG_SEVERITY": "2",
        "CMO_DAIL_OUT_ENABLE": "false",
        "CMO_SYSLOG_ALARM_ENABLE": "true",
        "CMO_SYSLOG_ALARM_RECOVERY_ENABLE": "false",
        "CMO_SYSLOG_EVENT_ENABLE": "false",
        "CMO_SYSLOG_SECURITYLOG_ENABLE": "true",
        "OM_MSG_OP_SET_ALARM_SYSLOG_CFG": "0",
        "SYSLOG_SERVER_CHANNEL_PROTOCOL": "3",
        "SYSLOG_SERVER_PORT": "12581",
```

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```
            "syslogFormat": "0",
            "WHETHER_SEND_DEVICE_NAME": "true"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.8 Interface for Setting the Alarm Severity

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/change_alarm_level

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_ID	Mandatory	uint64	Alarm ID (hexadecimal digit). **Range:**0x[0-9a-fA-F]{1,16}
CMO_ALARM_LEVEL	Mandatory	enum	Alarm severity. **The value is described as follows:** 2: info 3: warning 5: major 6: critical

Result

N/A

Example

- Setting the alarm severity.

```
Request: PUT/deviceManager/rest/210235843910E6000009/change_alarm_level{
    "CMO_ALARM_ID": "0x4037000e",
```

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```
    "CMO_ALARM_LEVEL": 3
}Response: {
    "data": {

    },
    "result": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.9 Interface for Testing Alarm Dump Settings

Function

This interface is used to test alarm dump settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/alarm_restore/test_alarm_restore_address

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_RESTORE_ADDRESS	Mandatory	string	Address of the dump server. **The value is described as follows:** IPv4 and IPv6 addresses are supported. **Length:**1~63
CMO_ALARM_RESTORE_VISUALPATH	Mandatory	string	Save path of dumped files. **Length:**1~255
CMO_ALARM_RESTORE_PASSWD	Conditional	string	Password. **Length:**1~63 **Note:**If the dump server address, dump file save path, user name, or protocol is different from the original configuration, the password is mandatory.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_ALARM_RESTORE_ACCOUNT	Mandatory	string	User name. **Length:**1~63
CMO_ALARM_RESTORE_PROTOCOL	Mandatory	enum	Protocol. **The value is described as follows:** 0: FTP 1: SFTP

Result

N/A

Example

- Testing alarm dump settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/alarm_restore/test_alarm_restore_address
{
    "CMO_ALARM_RESTORE_ACCOUNT": "root",
    "CMO_ALARM_RESTORE_ADDRESS": "10.169.3.22",
    "CMO_ALARM_RESTORE_PASSWD": "12345",
    "CMO_ALARM_RESTORE_PROTOCOL": "1",
    "CMO_ALARM_RESTORE_VISUALPATH": "/optt"
}

Response: {
    "data": {
},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.2.2.5.10 Interface for Testing Recipient Email Addresses

Function

This interface is used to test recipient email addresses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/email/send_test_email

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_LEVEL_ENABLE	Optional	enum	Whether to show the alarm severity in the email title. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_SUBJECT	Optional	string	Email title prefix. **Length:**0~511
CMO_EMAIL_SMTP_SERVER	Mandatory	string	SMTP service address. **Length:**1~255
CMO_EMAIL_SENDER	Mandatory	string	Sender. **Length:**1~255
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	uint32	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_SMTP_USER_NAME	Conditional	string	Identification user name. **Length:**1~63 **Note:**This parameter is mandatory when SMTP server authentication is selected.
CMO_EMAIL_RECEIVER	Optional	string	List of recipient email addresses.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_USER_PASSWD	Conditional	string	Identification user password. **The value is described as follows:** If this field is not delivered, use the last value that has been successfully configured. **Length:**1~63 **Note:**This parameter is mandatory when SMTP server authentication is selected.
CMO_EMAIL_SSL	Mandatory	uint32	Whether SSL connections are used. **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS
CMO_EMAIL_SMTP_SERVER_PORT	Mandatory	uint32	SMTP port number. **The value is described as follows:** 1 to 65535.
eventEmailReceiver	Optional	string	Address to which events are reported.
showAlarmSeverity-ForAlarmTitle	Optional	enum	Whether to show the alarm severity in the email title. **The value is described as follows:** 0: OFF 1: ON
descriptionEnable	Optional	enum	Switch of displaying the alarm description in the email title. **The value is described as follows:** 0: OFF 1: ON

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Parameter	Mandatory/Optional/Conditional	Type	Description
nameEnable	Optional	enum	Switch of displaying the storage device name in the email title. **The value is described as follows:** 0: OFF 1: ON
alarmIdEnable	Optional	enum	Switch of displaying the alarm ID in the email title. **The value is described as follows:** 0: OFF 1: ON

Result

N/A

Example

- Testing recipient email addresses.

```
Request: PUT /deviceManager/rest/210235843910E6000009/email/send_test_email
{
   "CMO_EMAIL_SUBJECT": "123456789",
   "CMO_EMAIL_LEVEL_ENABLE": "1",
   "CMO_EMAIL_SMTP_SERVER": "192.168.0.2",
   "CMO_EMAIL_SENDER": "test1@foxmail.com",
   "CMO_EMAIL_NEED_SMTP_CHECK": "1",
   "CMO_EMAIL_SMTP_USER_NAME": "admin12333",
   "CMO_EMAIL_SMTP_USER_PASSWD":"Admin@123",
   "CMO_EMAIL_RECEIVER": "1234566@qq.com,1234566@qq.com,",
   "eventEmailReceiver":"1234566@qq.com",
   "CMO_EMAIL_SSL": "3",
   "CMO_EMAIL_SMTP_SERVER_PORT": 25
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3 Security management

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2.3.1 user

2.3.1.1 Add

2.3.1.1.1 Interface for Creating a User

Function

This interface is used to create an OceanStor DeviceManager user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/user

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ROLEID	Optional	string	Role ID. **Default:**For a system user, the default value is 11 (empty role). For a vStore user, the default value is 1024 (vStore administrator).

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	User name. **The value is described as follows:** A local user name consists of letters, digits, and underscores (_), and must start with a letter. The LDAP user name, LDAP user group name, or RADIUS user name cannot start or end with a space, cannot start with a period (.), and must be unique. In addition, the following characters are not supported: ? ' " # * : ( ). **Note:**A local user name contains 5 to 32 characters. The user name of an LDAP or RADIUS user contains 1 to 64 characters.
DESCRIPTION	Optional	string	Description of the user to be created. **Length:**0~255
PASSWORD	Conditional	string	User password, which must comply with the password complexity requirements of OceanStor DeviceManager. **Note:**This parameter does not need to be delivered when the user type is LDAP user (SCOPE: 1), LDAP user group (SCOPE: 2), or RADIUS user (SCOPE: 8).

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Parameter	Mandatory/Optional/Conditional	Type	Description
SCOPE	Mandatory	enum	User type. **The value is described as follows:** 0: local user 1: LDAP user 2: LDAP group 8: RADIUS user
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	User login times.
TYPE	Mandatory	enum	Type number of the object. **The value is described as follows:** 202: user
ID	Mandatory	string	User ID.
NAME	Mandatory	string	User name.
DESCRIPTION	Mandatory	string	Description.
SCOPE	Mandatory	string(enum)	User type. **The value is described as follows:** 0: local user 1: LDAP user 2: LDAP group
CREATETIME	Mandatory	string(uint64)	Time (UTC time) when the user was created.
ISONLINE	Mandatory	string(enum)	Online status. **The value is described as follows:** 0: offline 1: online

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Parameter	Mandatory/ Conditional	Type	Description
LOCKSTATUS	Mandatory	string(enum)	Lock status. **The value is described as follows:** 0: unlocked 1: locked
ACCOUNTSTATE	Mandatory	string(enum)	Password status. **The value is described as follows:** 1: normal 3: password expired 4: initial password, which must be reset 5: The password is about to expire. 6: The password must be changed upon the next login.
LEVELGROUPTYPE	Mandatory	string(enum)	Type of the group to which a user role belongs. **The value is described as follows:** 0: all groups 1: system group 2: vStore group
authenticateFactor	Mandatory	enum	Login factor. **The value is described as follows:** 0: password 1: password and email one-time password 2: password and RADIUS one-time password 3: RADIUS one-time password

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Parameter	Mandatory/ Conditional	Type	Description
LOGINMETHODLIST	Mandatory	string	Account login mode list. **The value is described as follows:** The value can be one or multiple of "1", "2", "3", "4", "5", and "6", where multiple methods are separated by commas (,). 1: CLI 2: SFTP 3: WEBUI 4: RESTFUL 5: SerialPort 6: In-band
isPasswordNeverExpire	Mandatory	bool	Indicates whether the password will never expire. **The value is described as follows:** TRUE or FALSE. TRUE indicates that the password will never expire. The default value is FALSE.
EMAIL	Mandatory	string	Mailbox server that accepts multi-factor authentication credentials.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter is included in the command output in vStore scenarios.

Example

- Creating a local user.

```
Request: POST /deviceManager/rest/210235843710E7000007/user
{
   "NAME": "user_readonly",
   "DESCRIPTION": "Read only user",
   "PASSWORD": "Admin@123",
```

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```
    "ROLEID":"2",
    "SCOPE": 0
}

Response:
{
    "data": {
        "ACCOUNTSTATE": "4",
        "COUNT": "0",
        "CREATETIME": "1568202329",
        "DESCRIPTION": "Read only user",
    "EMAIL": "",
        "ID": "user_readonly",
        "ISONLINE": "0",
        "LEVELGROUPTYPE": "1",
        "LOCKSTATUS": "0",
        "LOGINMETHODLIST": "1,2,3,4,5",
        "NAME": "user_readonly",
        "ROLEID": "2",
        "SCOPE": "0",
        "TYPE": 202,
    "authenticateFactor": "0",
        "isPasswordNeverExpire": "false"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.2 Delete

2.3.1.2.1 Interface for Deleting a User

Function

This interface is used to delete a user based on the ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/user/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is deleted.

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Result

N/A

Example

- Deleting a user.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/user/admin_123

Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.3 Modify

2.3.1.3.1 Interface for Modifying the User Authentication Factor

Function

This interface is used to modify the user authentication factor.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/modify_user_authenticate_factor

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.

Parameter	Mandatory/Optional/Conditional	Type	Description
authenticateFactor	Mandatory	enum	User authentication factor. **The value is described as follows:** 0: password 1: password and email one-time password 2: password and RADIUS one-time password 3: RADIUS one-time password
EMAIL	Optional	string	OTP email receiving address.

Result

N/A

Usage Guidelines

Only the authentication factor of local users can be modified.

Example

- Setting the authentication factor of user "testuser" to the password and email OTP.

```
Request: PUT /deviceManager/rest/210235843910E6000009/modify_user_authenticate_factor
{
    "ID": "testuser",
    "authenticateFactor": 1,
    "EMAIL": "45343@aa.com"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.3.2 Interface for Modifying the User Session Number

Function

This interface is used to modify maximum number of sessions.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CHANGE_USER_LOGIN_MAX_SESSIONS

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
login_max_sessions	Mandatory	uint32	maximum number of sessions supported by the system. **The value is described as follows:** The value can be "32" or "256", where: 1:"32": The system supports 32 sessions. 2:"256": The system supports 256 sessions.

Result

N/A

Example

- Changing the user session number to 256.

```
Request: PUT /deviceManager/rest/210235843710E7000007/CHANGE_USER_LOGIN_MAX_SESSIONS
{
   "login_max_sessions": 256
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.3.3 Interface for Modifying User Information

Function

This interface is used to modify the properties of a user based on the user ID.

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HighRisk

You are about to change the user role.

This operation will change the user's operation permission.

Suggestion: Before performing this operation, ensure that the selected user role is correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/user/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **Length:**0~255
ROLEID	Optional	string	Role ID.
PASSWORD	Conditional	string	New password. **Note:**This parameter must be delivered when the password is being changed.
OLDPASSWORD	Conditional	string	Old password. **Note:**This parameter is mandatory for password change. When this parameter is delivered and the command is executed successfully, the system changes the current session ID. If a RESTful request is delivered using the old session ID, error code 1073793621 is returned, indicating that the session is invalid.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	User ID. **Note:**This parameter must be delivered when other user's info is being modified by the super administrator.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is modified.

Result

N/A

Usage Guidelines

1. The super administrator can change its own password and information about other users, and other users can change their own passwords only.

2. The description, role, and password cannot be modified at the same time.

Example

- Changing the description of a user.

```
Request: PUT /deviceManager/rest/210235843710E7000007/user/admin_123
{
   "DESCRIPTION": "change role"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.3.4 Interface for Modifying User Login Methods

Function

This interface is used to modify the account login method list.

HighRisk

You are about to modify the account login method list.

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This operation will cause the account to fail to log in to the storage array in methods not recorded in the list.

Suggestion: Before performing this operation, ensure that the login method configuration is correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/modify_user_login_method

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
LOGINMETHODLIST	Mandatory	string	Account login method list. **The value is described as follows:** In the system view, the value can be 1, 2, 3, 4, 5, or 6. In the vStore view, the value can be 3, 4, or 6. Use commas (,) to separate multiple values. 1: CLI; 2: SFTP; 3: DeviceManager; 4: RESTful; 5: SerialPort; 6: In-band. **Length:**255

Result

N/A

Usage Guidelines

It does not support to modify the login method list of a vStore administrator.

Example

- Setting the login method of "testuser" to "CLI" and "SFTP".

```
Request: PUT /deviceManager/rest/210235843910E6000009/modify_user_login_method
{
   "ID": "testuser",
```

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```
    "LOGINMETHODLIST": "1,2"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.4 Query

2.3.1.4.1 Interface for Batch Querying User Information

Function

This interface is used to batch query information about users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/user

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is queried.

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Result

Parameter	Mandatory/ Conditional	Type	Description
USERGROUPNAME	Conditional	string	Owning LDAP group. **Note:**The value is returned for users in the LDAP group only.
COUNT	Mandatory	string(uint32)	User login times.
ROLEID	Mandatory	string	Role ID.
ACCOUNTSTATE	Conditional	string(enum)	Password status. **The value is described as follows:** 1: normal 3: password expired 4: initial password, which must be reset 5: The password is about to expire. 6: The password must be changed upon the next login. 7: The password never expires. **Note:**This parameter is returned only when the super administrator queries user information.
LEVELGROUPTYPE	Mandatory	string(enum)	Type of the owning group of the level. **The value is described as follows:** 0: all groups 1: system group 2: vStore group
CREATETIME	Conditional	string(uint64)	Time when the user was created. **Note:**The value is not returned for users in the LDAP group.
DESCRIPTION	Mandatory	string	Description.
ID	Mandatory	string	User ID.

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Parameter	Mandatory/ Conditional	Type	Description
ISONLINE	Mandatory	string(enum)	Online status. **The value is described as follows:** 0: offline 1: online
LOCKSTATUS	Mandatory	string(enum)	Lock status. **The value is described as follows:** 0: unlocked 1: locked
NAME	Mandatory	string	Username.
SCOPE	Mandatory	string(enum)	Local user or domain user. **The value is described as follows:** 0: local user 1: LDAP user 2: LDAP group 7: SSO user 8: RADIUS user
TYPE	Mandatory	enum	Type number of the object. **The value is described as follows:** 202: user
LOGINMETHODLIST	Conditional	string	Account login method list. **The value is described as follows:** The value can be one or multiple of "1", "2", "3", "4", "5", and "6", where multiple methods are separated by commas (,). 1: CLI; 2: SFTP; 3: DeviceManager; 4: RESTful; 5: SerialPort; 6: In-band.

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Parameter	Mandatory/ Conditional	Type	Description
isPasswordNeverExpire	Conditional	string(bool)	Indicates whether a password will never expire. **The value is described as follows:** true: The function that the password never expires is enabled. false: The function that the password never expires is disabled. **Note:**This parameter is returned only when the super administrator queries user information.
authenticateFactor		enum	Login factor. **The value is described as follows:** 0: password 1: password and email one-time password 2: password and RADIUS one-time password 3: RADIUS one-time password
vstoreId	Conditional	string	vStore ID. **Note:**The value is returned when a vStore user is queried.

Usage Guidelines

Only the super administrator can query the rights of other users.

Example

- Batch querying users.

```
Request: GET /deviceManager/rest/210235843710E7000007/user

Response: {
   "data": [
      {
         "ACCOUNTSTATE": "1",
```

```
            "CREATETIME": "1451532658",
            "COUNT": "438",
            "DESCRIPTION": "Default user",
            "ID": "admin",
            "ISONLINE": "1",
            "LEVELGROUPTYPE": "1",
            "LOCKSTATUS": "0",
            "NAME": "admin",
            "ROLEID":"2",
            "SCOPE": "0",
            "TYPE": 202,
            "LOGINMETHODLIST": "1,2,3,4,5",
            "isPasswordNeverExpire":"true"
        },{
            "ACCOUNTSTATE": "1",
            "CREATETIME": "1451534917",
            "COUNT": "2",
            "DESCRIPTION": "",
            "ID": "admin_123",
            "ISONLINE": "0",
            "LEVELGROUPTYPE": "1",
            "LOCKSTATUS": "0",
            "NAME": "admin_123",
            "ROLEID":"2",
            "SCOPE": "0",
            "TYPE": 202,
            "LOGINMETHODLIST": "1,3,4",
            "isPasswordNeverExpire":"true"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.1.4.2 Interface for Querying Radius Authentication Server Settings

Function

Query Radius authentication server configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/radiusConfig

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
switch	Mandatory	enum	Service switch. **The value is described as follows:** 0: disabled; 1: enabled
address	Mandatory	string	Server adress. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits and hyphens (-). Domain names at different levels are separated by periods (.). The general domain name cannot start or end with a hyphen (-).
port	Mandatory	uint32	Server port. **The value is described as follows:** 1..65535
scheme	Mandatory	enum	Authentication policy. **The value is described as follows:** 0: password authentication protocol; 1: challenge handshake authentication protocol

Example

- Query radius authentication server configurations.

```
Request: GET /deviceManager/rest/210235843710E7000007/radiusConfig

Response: {
   "data": [
      {
         "switch": "0",
```

```
            "address": "--",
            "port": "1812",
            "scheme": "1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.4.3 Interface for Querying SSO Settings

Function

This interface is used to query SSO configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sso_config

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
switch	Mandatory	bool	SSO service switch. **The value is described as follows:** 0: Off 1: On
serverAddress	Mandatory	string	Server address.
serverPort	Mandatory	uint32	Server port.

Example

- Query SSO server configuration.

```
Request: GET /deviceManager/rest/210235843910E6000009/sso_config

Response:
{
    "data": {
        "switch": 1,
        "serverAddress": "10.169.2.1",
        "serverPort": 31942
    },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.4.4 Interface for Querying Status Information of the License to Be Activated

Function

This interface is used to query status information of the license to be activated.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/license/getInActLicenseStatus

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_IS_TEMP_LICENSE	Mandatory	string	License validity period. **The value is described as follows:** 0: permanent 1: temporary
CMO_LICENSE_STATUS	Mandatory	string	License status. **The value is described as follows:** 1: valid 2: expired 3: invalid **Note:**After the license expires, a 60-day trial period is available.

Example

- Querying status information of the license to be activated.

```
Request: GET /deviceManager/rest/2102352UMS10K6000001/license/getInActLicenseStatus

Response: {
    "data": {
```

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```
        "CMO_IS_TEMP_LICENSE": "true",
        "CMO_LICENSE_STATUS": "3"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.4.5 Interface for Querying the User Session Number

Function

This interface is used to query maximum number of sessions.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUERY_USER_LOGIN_MAX_SESSIONS

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
login_max_sessions	Mandatory	uint32	Maximum number of sessions **The value is described as follows:** The value can be "32" or "256", where: 1:"32": The system supports 32 sessions. 2:"256": The system supports 256 sessions.

Example

- Querying user session number.

```
Request: GET /deviceManager/rest/210235843710E7000007/QUERY_USER_LOGIN_MAX_SESSIONS

Response:
{
    "data": {
        "login_max_sessions": "256"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.4.6 Interface for Querying User Authentication Email Informations

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/USER_AUTH_EMAIL/

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER	Mandatory	string	SMTP service address.
CMO_EMAIL_SENDER	Mandatory	string	Sender.
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	string(uint32)	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_SSL	Mandatory	string(uint32)	Whether SSL connections are used **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS

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Parameter	Mandatory/ Conditional	Type	Description
caEnabled	Mandatory	uint32	Whether to enable the CA certificate during email sending. **The value is described as follows:** 0: does not enable the CA certificate during email sending. 1: enables the CA certificate during email sending.
CMO_EMAIL_SMTP_USER_NAME	Conditional	string	Identification user name.
CMO_EMAIL_SMTP_SERVER_PORT	Mandatory	string(uint32)	SMTP port number. **The value is described as follows:** 1~65535
CMO_EMAIL_NEED_SEND	Mandatory	string(uint32)	Whether to send email. **The value is described as follows:** 0: no 1: yes

Example

- Querying user authentication email information.

```
Request: GET /deviceManager/rest/210235843710E7000007/USER_AUTH_EMAIL

Response: {
   "data": {
      "CMO_EMAIL_NEED_SMTP_CHECK": "1",
      "CMO_EMAIL_SENDER": "23139993219@qq.com",
      "CMO_EMAIL_SMTP_SERVER": "192.168.0.1",
      "CMO_EMAIL_SMTP_SERVER_PORT": "24",
      "CMO_EMAIL_SMTP_USER_NAME": "asdasd",
      "CMO_EMAIL_SSL": "3",
      "caEnabled": 0,
      "CMO_EMAIL_NEED_SEND": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.3.1.4.7 Interface for Querying User Information

Function

This interface is used to query user information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/user/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is queried.

Result

Parameter	Mandatory/Conditional	Type	Description
ROLEID	Mandatory	string	Role ID.
USERGROUPNAME	Conditional	string	Owning LDAP group. **Note:**The value is returned for users in the LDAP group only.
EMAIL	Mandatory	string	Email server that accepts multi-factor authentication credentials.
COUNT	Mandatory	string(uint32)	User login times.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 202: user
ID	Mandatory	string	User ID.
NAME	Mandatory	string	Username.
DESCRIPTION	Mandatory	string	Description.
SCOPE	Mandatory	string(enum)	User type. **The value is described as follows:** 0: local user 1: LDAP user 2: LDAP user group 7: SSO user 8: RADIUS user
CREATETIME	Conditional	string(uint64)	Time when the user was created. **Note:**The value is not returned for users in the LDAP group.
ISONLINE	Mandatory	string(enum)	Online status. **The value is described as follows:** 0: offline 1: online
LOCKSTATUS	Mandatory	string(enum)	Lock status. **The value is described as follows:** 0: unlocked 1: locked

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Parameter	Mandatory/ Conditional	Type	Description
ACCOUNTSTATE	Conditional	string(enum)	Password status. **The value is described as follows:** 1: normal 3: The password expires. 4: The user password is in the initial state and needs to be changed. 5: The password is about to expire. 6: The password must be changed upon the next login. 7: The password never expires. **Note:**This parameter is returned only when the super administrator queries user information.
LEVELGROUPTYPE	Mandatory	string(enum)	Type of the owning group of the level. **The value is described as follows:** 0: all groups 1: system group 2: vStore group
LOGINMETHODLIST	Mandatory	string	Account login method list. **The value is described as follows:** The value can be one or multiple of "1", "2", "3", "4", "5", and "6", where multiple methods are separated by commas (,). 1: CLI; 2: SFTP; 3: DeviceManager; 4: RESTful; 5: SerialPort; 6: In-band.

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Parameter	Mandatory/ Conditional	Type	Description
isPasswordNeverExpire	Conditional	string(bool)	Indicates whether a password will never expire. **The value is described as follows:** true: The function that the password never expires is enabled. false: The function that the password never expires is disabled. **Note:**This parameter is returned only when the super administrator queries user information.
authenticateFactor	Mandatory	enum	Login factor. **The value is described as follows:** 0: password 1: password and email one-time password 2: password and RADIUS one-time password 3: RADIUS one-time password
vstoreId	Conditional	string	vStore ID. **Note:**The value is returned when a vStore user is queried.

Usage Guidelines

Super administrators can view information about other users. Other users can only view their own information.

Example

- Querying user admin_123.

```
Request: GET /deviceManager/rest/210235843710E7000007/user/admin_123

Response: {
   "data": {
```

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```
        "ACCOUNTSTATE": "1",
        "COUNT": "0",
        "CREATETIME": "1451534917",
        "DESCRIPTION": "",
        "EMAIL": "",
        "ID": "admin_123",
        "ISONLINE": "0",
        "LEVELGROUPTYPE": "1",
        "LOCKSTATUS": "0",
        "LOGINMETHODLIST": "1,2,3,4,5",
        "NAME": "admin_123",
        "ROLEID": "2",
        "SCOPE": "0",
        "TYPE": 202,
        "authenticateFactor": "0",
        "isPasswordNeverExpire": "true"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.1.5 Others

2.3.1.5.1 Interface for Access Authentication

Function

This interface is used to authenticate access based on the user name, password, and user type and return user information including the session ID after the user successfully logs in to the interface.

URL

https://${ip}:${port}/deviceManager/rest/xxxxx/sessions

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
username	Mandatory	string	Login user name.
password	Mandatory	string	Login password.
scope	Mandatory	enum	User type. **The value is described as follows:** 0: local user 1: LDAP user 8: RADIUS user

Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time
vstorename	Optional	string	vStore name.

Result

Parameter	Mandatory/Conditional	Type	Description
userid	Mandatory	string	User ID.
roleId	Mandatory	string	Role ID.
radiusChallenge-Prompt	Conditional	string	RADIUS challenge prompt. **The value is described as follows:** The value is a string of 1 to 1024 characters.
deviceid	Mandatory	string	Device ID. The device ID is used in subsequent request URLs. Any valid URI string can be used in initial login. **Note:** When the password status of the login user is normal, a valid value is returned for deviceId. If the password status is not normal and the returned deviceId is an empty string, use any characters ("xxx" is recommended) to replace deviceId in the APIs for querying security policies and changing passwords.
username	Mandatory	string	User name.

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Parameter	Mandatory/ Conditional	Type	Description
usergroup	Mandatory	string	User group.
userscope	Mandatory	string(enum)	User type. **The value is described as follows:** 0: local user 1: LDAP user 8: RADIUS user
accountstate	Mandatory	string(enum)	Password status. **The value is described as follows:** 1: normal 3: password expired 4: initial password, which must be reset 5: The password is about to expire. 6: The password must be changed upon the next login. 7: The password never expires. 8: one-time password for authenticating the email address 9: The device is in the first login state and the password needs to be initialized. 10: RADIUS one-time password authentication is required. 11: RADIUS challenge response is required.
pwdchangetime	Mandatory	string(uint64)	Time (UTC time) when the password was last changed.
vstoreId	Conditional	string	vStore ID.
vstoreName	Conditional	string	vStore name.
lastlogintime	Mandatory	string(uint64)	Time (UTC time) of the last login.

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Parameter	Mandatory/ Conditional	Type	Description
lastloginip	Mandatory	string	IP address of the client of the last login.
iBaseToken	Mandatory	string	Authentication session ID. This parameter must be configured for all subsequent requests.

Usage Guidelines

After a successful login, the session ID is returned with the cookie in the response header. The client needs to save the cookie and report the session ID in the subsequent request header. The session can be used only on the logged-in controller.

Example

- Authenticating access.

```
Request: POST /deviceManager/rest/xxxxx/sessions
{
   "username": "admin",
   "password": "Admin@123",
   "scope": "0"
}

Response: {
   "data": {
      "accountstate": 1,
      "deviceid": "210235843910E6000009",
      "iBaseToken": "62FAE587BB86D7D0E62C89364032B91679907F10640ED56B5DF3A9772B179FA",
      "lastloginip": "192.168.0.1",
      "lastlogintime": 1444510218,
      "pwdchangetime": 1444508776,
      "roleId": "1",
      "usergroup": "",
      "userid": "admin",
      "username": "admin",
      "userscope": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.5.2 Interface for Authentication Exit

Function

This interface is used to exit a session.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sessions

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
is_timeout	Optional	bool	Whether the logout is triggered by timeout. 1: true 0: false Default value: 0.
isTimeout	Optional	bool	Whether to exit the SSO session due to timeout. 1: true 0: false Default value: 0.

Result

N/A

Usage Guidelines

Request headers must contain parameter iBaseToken, and session IDs must be reported in cookies. You exit a session if the command is successfully executed.

Example

- Exiting a session.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/sessions

Response:{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Exiting a session when no operation is performed for a long time on DeviceManager.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/sessions?is_timeout=1

Response:{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Exiting a single sign-on (SSO) session.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/sessions?isTimeout=1

Response:{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.3 Interface for Bringing a User Offline

Function

This interface is used to bring a user offline by user ID.

HighRisk

You are about to log off the selected user.

After this operation, the user can no longer manage the device unless relogs in to the device.

Suggestion: Before performing this operation, learn about the impact of this operation on the user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/offline_user/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is brought offline.

Result

N/A

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Example

- Bringing a user offline.

```
Request: PUT /deviceManager/rest/210235843710E7000007/offline_user/admin_123

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.5.4 Interface for Forcing a User to Change Its Password Upon Next Login

Function

This interface is used to force a user to change its password upon next login.

HighRisk

You are about to set changing the password at the next login. The user must change the password upon the next login. Suggestion: Before performing this operation, learn about the impact of this operation on the user.
You are about to perform an operation that affects remote replication and HyperMetro services. If the remote device administrator is locked, deleted, or taken offline, or needs to modify the password upon the next login, or you disable the password always valid function, enable password initialization, or deselect the RESTful login mode for the administrator, the administrator cannot authenticate remote replication and HyperMetro services. Suggestion: Do not perform the preceding operations on the remote device administrator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/force_user_change_password

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 202: user
vstoreId	Conditional	string	vStore ID. **Note:**This parameter is mandatory when the target object is a vStore user.

Result

N/A

Example

- Forcing a user to change its password upon next login.

```
Request: PUT /deviceManager/rest/210235843910E6000009/force_user_change_password
{
   "ID":"yyhyyhyyh123",
   "TYPE":202
}

Response: {
   "data":  { }
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.5.5 Interface for Initializing User Passwords

Function

Initialize user passwords according to the user ID.

HighRisk

You are about to perform an operation that will affect the DataTurbo service. Deletion, password change, and password initialization operations on the DataTurbo administrator of the vStore will disconnect the DataTurbo client that uses the administrator from the storage device. As a result, the DataTurbo service will be unavailable. Suggestion: Before performing this operation, ensure that the impact is acceptable.

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You are about to perform an operation that affects remote replication and HyperMetro services. If the remote device administrator is locked, deleted, or taken offline, or needs to modify the password upon the next login, or you disable the password always valid function, enable password initialization, or deselect the RESTful login mode for the administrator, the administrator cannot authenticate remote replication and HyperMetro services.

Suggestion: Do not perform the preceding operations on the remote device administrator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/initialize_user_pwd/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORD	Mandatory	string	New password.
IMPORTANTPSW	Mandatory	string	Super administrator password.
ID	Mandatory	string	User ID.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when the password for a vStore user is initialized.

Result

N/A

Example

- Initialize user passwords.

```
Request: PUT /deviceManager/rest/210235843710E7000007/initialize_user_pwd/admin_123
{
    "ID":"admin_123",
    "IMPORTANTPSW": "Admin@storage",
    "PASSWORD": "Admin@123"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
```

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```
        "description": "0"
    }
}
```

2.3.1.5.6 Interface for Locking a User

Function

Lock a user by user ID.

HighRisk

You are about to perform an operation that will affect the DataTurbo service. Deletion, password change, and password initialization operations on the DataTurbo administrator of the vStore will disconnect the DataTurbo client that uses the administrator from the storage device. As a result, the DataTurbo service will be unavailable. Suggestion: Before performing this operation, ensure that the impact is acceptable.
You are about to perform an operation that affects remote replication and HyperMetro services. If the remote device administrator is locked, deleted, or taken offline, or needs to modify the password upon the next login, or you disable the password always valid function, enable password initialization, or deselect the RESTful login mode for the administrator, the administrator cannot authenticate remote replication and HyperMetro services. Suggestion: Do not perform the preceding operations on the remote device administrator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lockuser/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a tenant user is locked.

Result

N/A

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Example

- Locking a user.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lockuser/admin_123

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.5.7 Interface for Logging In as a User

Function

This interface is used to authenticate access based on the user name, password, and user type and return user information including the session ID after the user successfully logs in to the interface.

URL

https://${ip}:${port}/deviceManager/rest/xxxxx/login

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
username	Mandatory	string	Login user name.
password	Conditional	string	Login password. **Note:**Login password.
scope	Mandatory	enum	User type. **The value is described as follows:** 0: local user 1: LDAP user 8: RADIUS user

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Parameter	Mandatory/Optional/Conditional	Type	Description
isEncrypt	Optional	bool	Whether to perform encryption. **The value is described as follows:** true: The user name and password are encrypted and delivered. false: The user name and password are delivered in plaintext.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1
loginMode	Optional	enum	Account login method. **The value is described as follows:** 3: DeviceManager 4: RESTful Default: 4

Result

Parameter	Mandatory/Conditional	Type	Description
userid	Mandatory	string	User ID.

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Parameter	Mandatory/ Conditional	Type	Description
deviceid	Mandatory	string	Device ID. The device ID is used in subsequent request URLs. Any valid URL string can be used in initial login. **Note:** When the password status of the login user is normal, a valid value is returned for deviceId. If the password status is not normal and the returned deviceId is an empty string, use any characters ("xxx" is recommended) to replace deviceId in the APIs for querying security policies and changing passwords.
username	Mandatory	string	Current authentication user name.
usergroup	Mandatory	string	Current authentication user group.
userscope	Mandatory	string(enum)	User type. **The value is described as follows:** 0: local user 1: LDAP user

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Parameter	Mandatory/ Conditional	Type	Description
accountstate	Mandatory	string(enum)	Password status. **The value is described as follows:** 1: normal 3: The password expires. 4: The user password is in the initial state and needs to be changed. 5: The password is about to expire. 6: The password must be changed upon the next login. 8: Email one-time password authentication is required. 9: The device is in the first login state and the password needs to be initialized. 10: RADIUS one-time password authentication is required.
pwdchangetime	Mandatory	string(uint64)	Time (UTC time) when the password was last changed.
lastlogintime	Mandatory	string(uint64)	Time of the last login.
lastloginip	Mandatory	string	IP address of the client of the last login.
iBaseToken	Mandatory	string	Authentication session ID. This parameter must be configured for all subsequent requests.
roleId	Mandatory	string	Role ID.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This parameter is included in the command output if the login user is a vStore user.
radiusChallenge-Prompt	Conditional	string	RADIUS challenge prompt. **The value is described as follows:** The value is a string of 1 to 1024 characters.
vstoreName	Conditional	string	vStore name. **Note:**This parameter is included in the command output if the login user is a vStore user.

Usage Guidelines

After a successful login, the session ID is returned with the cookie in the response header. The client needs to save the cookie and report the session ID in the subsequent request header. The session can be used only on the logged-in controller.

Example

- Authenticating access.

```
Request：POST /deviceManager/rest/xxxxx/login
{
   "username": "admin",
   "password": "Admin@123",
   "scope": "0",
   "loginMode": "4",
   "isEncrypt": false
}

Response:
{
   "data": {
      "accountstate": 1,
      "deviceid": "210235843910E6000009",
      "iBaseToken": "62FAE587BB86D7D0E62C89364032B91679907F10640ED56B5DF3A9772B179FA",
      "lastloginip": "127.0.0.1",
      "lastlogintime": 1444510218,
      "pwdchangetime": 1444508776,
      "roleId":"1",
      "usergroup": "",
      "userid":"admin",
      "username": "admin",
```

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```
        "userscope": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Authenticating access.

```
Request：POST /deviceManager/rest/xxxxx/login
{
    "username": "eTeimEiBAvLFB1dLwBgIpr1VTn/CWvwHTB
+JGemnlCo4W3LhfVnle9wB7oPTZz0iDnfHHRbkxY5A4nHAq9eYKa4fmJuulDpFo3A6xJsA18kXsi6hgVNdA
Z+tDqIErN8/
YdeDSRb5h3xfVxdsHcfUjFo2lxaObEQZy9Z3xuI6TcvCoszyTgNFrclmB9G6JaQreaMdYICWbJmm
+VvrM6XPRruiHCjhadyAMOPWHywB7EK0178DVfmOtPqBUVzJeaxpGaTzEgKVa5yqcFPVdoPmujvnIynYl
NLwfmPvO2pueDgfvggtlcTMAYSDD3gHf0ortaGKr19/
l93zjLZBYYuhaoOCBZGiWYYpSH2UiTgpCPfPS9UUws/bSV
+ehNcGyfkPTik2VzZVaowsgkLRSsq0RO0b0gniDhvyxzAMBO4l3KS3GVxHv3e
+GRickpA5WsvtGyC3yoEGAnbkoY3Wk5ydqYLl7OcXeFEJzEB6Pv2XL9FMe260TydsUAVVp15Kr4Ax",
    "password": "OEvP4/9y760ms9fGIBuut944A7cNwCMjhPbjiCYURBonElgPp0rnIUcGUVyo/rkmWCqM/
jhan7dkZUBbnTRKYtL1/Za5vaN3oYvtRz0a
+3Qwjxb9sHSyyu74KOmUC5F62rtnWtIpo6RH59EcoRpvlE2XLe0VsLHHRHZBSnvWL5CZDo9QY8TsTnixM
B5m1AnnnthXB43FDzBYun5lWydfb4O9x0Nw3LgDLqbpVSAAsWm2x1Q4pT5mT2CIK571IeJyhUwIUXcGY
k3DkN0oJdvs70UkofUG1nYai9CMc6mnjM/WaGwYkQGR2rtncw2f73mumRa/
Kl26L7PXSwZOpTYtd0qWLP02EqalDu5JVtWKjXyp9g1ZxhxL2wfq4v/7s4xViLRSnkzmYFcjYl4XyVZu8pg/
Rt6i4udvfNbPLRh+55PsEh7BV6a1qe7nPH21wPt+pFIzhdsv7k+DjYk+AF2VzaxAG3pwJhjVda3w8VG7KfQl
+kv4gm3KqE9t0K+B1C41",
    "scope": 0,
    "loginMode": 3,
    "timeConversion": 0,
    "isEncrypt": true
}

Response:
{
    "data": {
        "accountstate": 1,
        "deviceid": "2102350RMG10H3000026",
        "iBaseToken":
"FF5B1479322FEC8AA7AF3F73F25C112E771DFD5F49F2D578FBA6F9C28BACEE80",
        "lastloginip": "127.0.0.1",
        "lastlogintime": 1648122096,
        "pwdchangetime": 1648069189,
        "roleId": "1",
        "usergroup": "",
        "userid": "admin",
        "username": "admin",
        "userscope": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.8 Interface for Setting SSO Settings

Function

This interface is used to modify SSO configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sso_config

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
switch	Mandatory	bool	SSO service switch. **The value is described as follows:** 0: Off 1: On
serverAddress	Conditional	string	Server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**255 **Note:**This parameter must be delivered when the value of "switch" is true.
serverPort	Conditional	uint32	Server port. **The value is described as follows:** 1..65535 **Note:**This parameter must be delivered when the value of "switch" is true.

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Result

N/A

Example

- Modify SSO server configuration.

```
Request: PUT /deviceManager/rest/210235843910E6000009/sso_config
{
    "switch": 1,
    "serverAddress": "10.169.2.1",
    "serverPort": 31942
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.9 Interface for Setting User Authentication Email Information

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/USER_AUTH_EMAIL/

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER	Conditional	string	SMTP service address. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SEND" is 1.
CMO_EMAIL_SENDER	Conditional	string	Sender. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SEND" is 1.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER_PORT	Conditional	string(uint32)	SMTP port number. **The value is described as follows:** 1~65535 **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SEND" is 1.
CMO_EMAIL_NEED_SMTP_CHECK	Conditional	string(uint32)	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SEND" is 1.
CMO_EMAIL_SMTP_USER_NAME	Conditional	string	Identification user name. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SMTP_CHECK" is 1.
CMO_EMAIL_SMTP_USER_PASSWD	Conditional	string	Identification password. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SMTP_CHECK" is 1.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SSL	Conditional	string(uint32)	Whether SSL connections are used. **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SEND" is 1.
caEnabled	Optional	uint32	Whether to enable the CA certificate during email sending. **The value is described as follows:** 0: does not enable the CA certificate during email sending. 1: enables the CA certificate during email sending.
CMO_EMAIL_NEED_SEND	Mandatory	string(uint32)	Whether to send email. **The value is described as follows:** 0: no 1: yes

Result

N/A

Example

- Setting user authentication email information.

```
Request: PUT /deviceManager/rest/210235843710E7000007/USER_AUTH_EMAIL
{
    "CMO_EMAIL_NEED_SMTP_CHECK": "0",
    "CMO_EMAIL_SENDER": "23139993219@gmail.com",
    "CMO_EMAIL_SMTP_SERVER": "192.168.0.1",
    "CMO_EMAIL_SMTP_SERVER_PORT": "24",
    "CMO_EMAIL_SSL": "3",
    "CMO_EMAIL_SMTP_USER_NAME": "username",
    "CMO_EMAIL_SMTP_USER_PASSWD": "paasswd",
    "caEnabled": 0,
```

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```
    "CMO_EMAIL_NEED_SEND": "0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.10 Interface for Setting Whether a User Password Never Expires

Function

This interface is used to set whether a specified user's password never expires.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/set_password_never_expire

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LDAP server ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isPasswordNeverExpire	Mandatory	bool	Indicates whether a password will never expire. **The value is described as follows:** true: The function that the password never expires is enabled. false: The function that the password never expires is disabled. **Note:** The parameter value can also be: 1: The function that the password never expires is enabled. 0: The function that the password never expires is disabled.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter is mandatory when the vStore user password is set to never expire.
type	Mandatory	enum	User object type. **The value is described as follows:** 202

Result

N/A

Example

- Setting the password of "testuser" to never expire.

```
Request: PUT /deviceManager/rest/210235843910E6000009/set_password_never_expire
{
    "ID":"testuser",
    "TYPE":"202",
    "isPasswordNeverExpire":true
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.11 Interface for Testing SSO Server Address

Function

This interface is used to test SSO server address.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sso_config/CHECK_SERVER_ADDRESS_CONNECTIVE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
serverAddress	Mandatory	string	Server address. **The value is described as follows:** The value can be a domain name or an IPv4 or IPv6 address. The domain name is a case-insensitive string of 1 to 255 characters, including letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.). Hyphens (-) cannot be the start or end of the domain name. **Length:**255
serverPort	Mandatory	uint32	Server port. **The value is described as follows:** 1..65535.

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Result

N/A

Example

- Testing SSO server address.

```
Request: PUT /deviceManager/rest/210235843910E6000009/sso_config/
CHECK_SERVER_ADDRESS_CONNECTIVE
{
    "serverAddress": "10.169.2.1",
    "serverPort": 31942
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.1.5.12 Interface for Testing User Authentication Email Server

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/TEST_USER_AUTH_EMAIL/

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_SMTP_SERVER	Mandatory	string	SMTP service address.
CMO_EMAIL_SENDER	Mandatory	string	Sender.
CMO_EMAIL_SMTP_SERVER_PORT	Mandatory	string(uint32)	SMTP port number. **The value is described as follows:** 1~65535

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EMAIL_NEED_SMTP_CHECK	Mandatory	string(uint32)	Whether SMTP verification is required. **The value is described as follows:** 0: no 1: yes
CMO_EMAIL_SMTP_USER_NAME	Conditional	string	Identification user name. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SMTP_CHECK" is 1.
CMO_EMAIL_SMTP_USER_PASSWD	Conditional	string	Identification password. **Note:**This parameter must be delivered when the value of "CMO_EMAIL_NEED_SMTP_CHECK" is 1.
CMO_EMAIL_SSL	Mandatory	string(uint32)	Whether SSL connections are used. **The value is described as follows:** 0: not encrypted 1: SSL/TLS 3: STARTTLS
caEnabled	Optional	string(uint32)	Whether to enable the CA certificate during email sending. **The value is described as follows:** 0: does not enable the CA certificate during email sending. 1: enables the CA certificate during email sending.

Result

N/A

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Example

- Testting user authentication email server.

```
Request: PUT /deviceManager/rest/210235843710E7000007/TEST_USER_AUTH_EMAIL
{
   "CMO_EMAIL_NEED_SMTP_CHECK": "0",
   "CMO_EMAIL_SENDER": "23139993219@gmail.com",
   "CMO_EMAIL_SMTP_SERVER": "192.168.0.1",
   "CMO_EMAIL_SMTP_SERVER_PORT": "24",
   "CMO_EMAIL_SSL": "3",
   "CMO_EMAIL_SMTP_USER_NAME": "username",
   "CMO_EMAIL_SMTP_USER_PASSWD": "paasswd",
   "caEnabled": 0,
   "CMO_EMAIL_NEED_SEND": "0"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.1.5.13 Interface for Unlocking a User

Function

Unlock a user by user ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/unlockuser/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User ID.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be configured when a vStore user is unlocked.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IMPORTANTPSW	Mandatory	string	Super administrator password. **Note:**When this parameter is delivered and the command is executed successfully, the system changes the current session ID. If a RESTful request is delivered using the old session ID, error code 1073793621 is returned, indicating that the session is invalid.

Result

N/A

Example

- Unlocking a user.

```
Request: PUT /deviceManager/rest/210235843710E7000007/unlockuser/admin_123
{
    "IMPORTANTPSW": "Admin@storage"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.2 security_rule

2.3.2.1 Add

2.3.2.1.1 Interface for Adding IP Rules

Function

This interface is used to add IP rules.

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HighRisk

You are about to add an IP address white list.

This operation will make the IP addresses in this white list able to access the storage system when the IP address security rule is enabled.

Suggestion: Confirm that you need to add this IP address white list and the IP addresses in the white list are correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iprule

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SECUREIP	Mandatory	string	IP whitelist. **Note:** IPv4 and IPv6 are supported. Format example: If it is a single IP address, the format is 10.1.1.1. If it is an IP address segment, the format is 10.1.1.1-10.1.2.1.
STRATEGY	Mandatory	enum	Rule strategy. **The value is described as follows:** 1: whitelist

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Specifies the ID of an IP rule.

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Parameter	Mandatory/ Conditional	Type	Description
SECUREIP	Mandatory	string	IP whitelist. **Note:** IPv4 and IPv6 are supported. Format example: If it is a single IP address, the format is 10.1.1.1. If it is an IP address segment, the format is 10.1.1.1-10.1.2.1.
STRATEGY	Mandatory	string(enum)	Rule strategy. **The value is described as follows:** 1: whitelist

Example

- Adding IP rules.

```
Request: POST /deviceManager/rest/210235843910E6000009/iprule
{
    "SECUREIP": "10.0.0.1",
    "STRATEGY": "1"
}

Response:
{
    "data": {
        "ID": "7",
        "SECUREIP": "10.0.0.1",
        "STRATEGY": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.2.2 Delete

2.3.2.2.1 Interface for Deleting IP Rules

Function

This interface is used to delete IP rules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iprule/${id}

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Specifies the ID of an IP rule.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 236: IP Rule

Example

- Deleting IP rules.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/iprule/7

Response:
{
   "data": {
      "TYPE": 236
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.2.3 Modify

2.3.2.3.1 Interface for Modifying NAS Security Policies

Function

This interface is used to modify NAS security policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nas_security_config

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string	vStore ID. **The value is described as follows:** 0 to 1023. **Length:**16
ntlmLevel	Optional	enum	NTLM authentication level supported by the server. **The value is described as follows:** 0 to 3: The server verifies the LM, NTLM, and NTLMv2 identities. 4: The server rejects the LM identity authentication and accepts the NTLM and NTLMv2 identity authentication. 5: The server rejects the LM and NTLM identity authentication, and accepts only the NTLMv2 identity authentication. 6: NTLM identity authentication is disabled.
logonExSessionKeyCacheSwitch	Optional	bool	Cache switch of logonExSessionKey. **The value is described as follows:** true: on; false: off **Note:**LogonExSessionKey cache switch in the AD domain. By default, this function is enabled.

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Result

N/A

Example

- Modifying the NAS security policies of a vStore.

```
Request: PUT/deviceManager/rest/210235843910E6000009/nas_security_config{
    “vstoreId”: "0",
    "NTLMLEVEL": "2",
    "logonExSessionKeyCacheSwitch" : false
}
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.2.4 Query

2.3.2.4.1 Interface for Querying IP Rules

Function

This interface is used to query IP rules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iprule

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 236: IP rule
ID	Mandatory	string	Specifies the ID of an IP rule.
SECUREIP	Mandatory	string	IP whitelist. **Note:** IPv4 and IPv6 are supported. Format example: If it is a single IP address, the format is 10.1.1.1. If it is an IP address segment, the format is 10.1.1.1-10.1.2.1.
STRATEGY	Mandatory	string(enum)	Rule strategy. **The value is described as follows:** 1: whitelist

Example

- Querying IP rules.

```
Request: GET /deviceManager/rest/210235843910E6000009/iprule

Response:
{
   "data": [
      {
         "ID": "1",
         "SECUREIP": "10.0.0.1",
         "STRATEGY": "1",
         "TYPE": 236
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.3.2.4.2 Interface for Querying NAS Security Policies

Function

This interface is used to query NAS security policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nas_security_config

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0 to 1023. **Length:**16 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0 to 1023.

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Parameter	Mandatory/ Conditional	Type	Description
ntlmLevel	Mandatory	enum	NTLM authentication level supported by the server. **The value is described as follows:** 0 to 3: The server verifies the LM, NTLM, and NTLMv2 identities. 4: The server rejects the LM identity authentication and accepts the NTLM and NTLMv2 identity authentication. 5: The server rejects the LM and NTLM identity authentication, and accepts only the NTLMv2 identity authentication. 6: NTLM identity authentication is disabled.
logonExSessionKeyCacheSwitch	Mandatory	bool	Cache switch of logonExSessionKey. **The value is described as follows:** true: on; false: off **Note:**LogonExSessionKey cache switch in the AD domain. By default, this function is enabled.

Example

- Querying NAS security policies of a vStore.

```
Request: GET/deviceManager/rest/210235843910E6000009/nas_security_config

Response: {
   "data": {
      "vstoreId": "0",
      "NTLMLEVEL": "2",
      "logonExSessionKeyCacheSwitch" : false
   },
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.3.2.4.3 Interface for Querying the IP Rule Switch

Function

This interface is used to query the IP rule switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iprule/switch

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 236: IP Rule
ENABLE	Mandatory	string(bool)	Security rule switch. **The value is described as follows:** true: enabled false: disabled

Example

- Querying the IP rule switch.

```
Request: GET /deviceManager/rest/210235843910E6000009/iprule/switch

Response:
{
  "data": [
    {
      "ENABLE: "false",
      "TYPE": 236
    }
  ],
  "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.3.2.5 Others

2.3.2.5.1 Interface for Setting the IP Rule Switch

Function

This interface is used to set the IP rule switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iprule/switch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLE	Mandatory	bool	Security rule switch. **The value is described as follows:** true: enabled false: disabled

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 236: IP Rule

Example

- Setting the IP rule switch.

```
Request: PUT /deviceManager/rest/210235843910E6000009/iprule/switch
{
```

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```
    "ENABLE": "false"
}

Response:
{
    "data": {
        "TYPE": 236
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.3 ldap

2.3.3.1 Add

2.3.3.1.1 Interface for Creating Domain Authentication Server Settings

Function

This interface is used to create domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORDHASH	Optional	string	Password hash. **Length:**0~63 **Note:**Cannot contain single quotation marks.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SERVERIP	Optional	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
PORT	Conditional	string(uint32)	LDAP server port. **The value is described as follows:** 1~65535 **Note:**This parameter must be configured if the server IP address is configured.
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Mandatory	string	Bind DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
BINDPASSWD	Mandatory	string	Bind password. **Length:**1~63

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Parameter	Mandatory/Optional/Conditional	Type	Description
USERSEARCHPATH	Mandatory	string	User directory. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
GROUPSEARCHPATH	Optional	string	Group directory. **Length:**0~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
USERIDATTR	Mandatory	string	User ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
USERNAMEATTR	Mandatory	string	User name attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
GROUPNAMEATTR	Optional	string	Group name attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.
GROUPMEMBERATTR	Optional	string	Group member attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.

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Parameter	Mandatory/Optional/Conditional	Type	Description
GROUPOBJECTCLASS	Optional	string	Group object type. **Length:**0~63 **Note:**Cannot contain single quotation marks.
USEROBJECTCLASS	Mandatory	string	User object type. **Length:**1~63 **Note:**Cannot contain single quotation marks.
BASEDN	Mandatory	string	Base DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
GROUPIDATTR	Mandatory	string	Group ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.

Result

Parameter	Mandatory/Conditional	Type	Description
PASSWORDHASH	Mandatory	string	password hash.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 238: Management LDAP Configuration

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	LDAP server ID. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
COUNT	Mandatory	string(uint32)	Number of objects. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
SERVERIP	Mandatory	string	LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
PORT	Mandatory	string(uint32)	LDAP server port.
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Mandatory	string	Bind DN.
USERSEARCHPATH	Mandatory	string	User directory.
GROUPSEARCHPATH	Mandatory	string	Group directory.
USERIDATTR	Mandatory	string	User ID attribute.
USERNAMEATTR	Mandatory	string	User name attribute.
GROUPNAMEATTR	Mandatory	string	Group name attribute.

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Parameter	Mandatory/ Conditional	Type	Description
GROUPMEMBERATTR	Mandatory	string	Group member attribute.
USEROBJECTCLASS	Mandatory	string	User object type.
GROUPOBJECTCLASS	Mandatory	string	Group object type.
BASEDN	Mandatory	string	Base DN.
GROUPIDATTR	Mandatory	string	Group ID attribute.

Example

- Creating domain authentication server settings.

```
Request: POST /deviceManager/rest/210235843710E7000007/LDAPConfig
{
        "BASEDN": "cn=MyApplication,ou=text,cd=com",
        "BINDDN": "cn=MyApplication,ou=text,cd=com",
        "BINDPASSWD": "admin_123",
        "DIRECTORYTYPE": "2",
        "GROUPIDATTR": "uSNCreated",
        "GROUPMEMBERATTR": "member",
        "GROUPNAMEATTR": "sAMAccountName",
        "GROUPOBJECTCLASS": "group",
        "GROUPSEARCHPATH": "",
        "PORT": "636",
        "SERVERIP": "192.168.0.1",
        "TRANSFERTYPE": "2",
        "USERIDATTR": "uSNCreated",
        "USERNAMEATTR": "sAMAccountName",
        "USEROBJECTCLASS": "user",
        "USERSEARCHPATH": "ou=User",
        "PASSWORDHASH":""
}

Response: {
    "data": {
        "BASEDN": "cn=MyApplication,ou=text,cd=com",
        "BINDDN": "cn=MyApplication,ou=text,cd=com",
        "COUNT": "1",
        "DIRECTORYTYPE": "2",
        "GROUPIDATTR": "uSNCreated",
        "GROUPMEMBERATTR": "member",
        "GROUPNAMEATTR": "sAMAccountName",
        "GROUPOBJECTCLASS": "group",
        "GROUPSEARCHPATH": "",
        "ID": "1",
        "PASSWORDHASH": "",
        "PORT": "636",
        "SERVERIP": "192.168.0.1",
        "TRANSFERTYPE": "2",
        "TYPE": "238",
        "USERIDATTR": "uSNCreated",
        "USERNAMEATTR": "sAMAccountName",
        "USEROBJECTCLASS": "user",
        "USERSEARCHPATH": "ou=User"
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.3.3.1.2 Interface for Creating Domain Authentication Server Settings (This Interface has been discarded)

Function

This interface is used to create domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig/creates

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORDHASH	Optional	string	Password hash. **Length:**0~63 **Note:**Cannot contain single quotation marks.
SERVERIP	Optional	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
PORT	Conditional	string(uint32)	LDAP server port. **The value is described as follows:** 1~65535 **Note:**This parameter must be configured if the server IP address is configured.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Mandatory	string	Bind DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
BINDPASSWD	Mandatory	string	Bind password. **Length:**1~63
USERSEARCHPATH	Mandatory	string	User directory. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
GROUPSEARCHPATH	Optional	string	Group directory. **Length:**0~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.

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Parameter	Mandatory/Optional/Conditional	Type	Description
USERIDATTR	Mandatory	string	User ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
USERNAMEATTR	Mandatory	string	User name attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
GROUPNAMEATTR	Optional	string	Group name attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.
GROUPMEMBERATTR	Optional	string	Group member attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.
GROUPOBJECTCLASS	Optional	string	Group object type. **Length:**0~63 **Note:**Cannot contain single quotation marks.
USEROBJECTCLASS	Mandatory	string	User object type. **Length:**1~63 **Note:**Cannot contain single quotation marks.
BASEDN	Mandatory	string	Base DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.

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Parameter	Mandatory/Optional/Conditional	Type	Description
GROUPIDATTR	Mandatory	string	Group ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.

Result

Parameter	Mandatory/Conditional	Type	Description
PASSWORDHASH	Mandatory	string	password hash.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 238: Management LDAP Configuration
ID	Mandatory	string	LDAP server ID. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
COUNT	Mandatory	string(uint32)	Number of objects. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
SERVERIP	Mandatory	string	LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
PORT	Mandatory	string(uint32)	LDAP server port.

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Parameter	Mandatory/ Conditional	Type	Description
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Mandatory	string	Bind DN.
USERSEARCHPATH	Mandatory	string	User directory.
GROUPSEARCHPATH	Mandatory	string	Group directory.
USERIDATTR	Mandatory	string	User ID attribute.
USERNAMEATTR	Mandatory	string	User name attribute.
GROUPNAMEATTR	Mandatory	string	Group name attribute.
GROUPMEMBERATTR	Mandatory	string	Group member attribute.
USEROBJECTCLASS	Mandatory	string	User object type.
GROUPOBJECTCLASS	Mandatory	string	Group object type.
BASEDN	Mandatory	string	Base DN.
GROUPIDATTR	Mandatory	string	Group ID attribute.

Example

- Creating domain authentication server settings.

```
Request: POST /deviceManager/rest/210235843710E7000007/LDAPConfig/creates
{
    "BASEDN": "cn=MyApplication,ou=text,cd=com",
    "BINDDN": "cn=MyApplication,ou=text,cd=com",
    "BINDPASSWD": "admin_123",
    "DIRECTORYTYPE": "2",
    "GROUPIDATTR": "uSNCreated",
    "GROUPMEMBERATTR": "member",
    "GROUPNAMEATTR": "sAMAccountName",
    "GROUPOBJECTCLASS": "group",
    "GROUPSEARCHPATH": "",
    "PORT": "636",
    "SERVERIP": "192.168.0.1",
    "TRANSFERTYPE": "2",
```

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```
        "USERIDATTR": "uSNCreated",
        "USERNAMEATTR": "sAMAccountName",
        "USEROBJECTCLASS": "user",
        "USERSEARCHPATH": "ou=User",
        "PASSWORDHASH":""
}

Response: {
   "data": {
        "BASEDN": "cn=MyApplication,ou=text,cd=com",
        "BINDDN": "cn=MyApplication,ou=text,cd=com",
        "COUNT": "1",
        "DIRECTORYTYPE": "2",
        "GROUPIDATTR": "uSNCreated",
        "GROUPMEMBERATTR": "member",
        "GROUPNAMEATTR": "sAMAccountName",
        "GROUPOBJECTCLASS": "group",
        "GROUPSEARCHPATH": "",
        "ID": "1",
        "PASSWORDHASH": "",
        "PORT": "636",
        "SERVERIP": "192.168.0.1",
        "TRANSFERTYPE": "2",
        "TYPE": "238",
        "USERIDATTR": "uSNCreated",
        "USERNAMEATTR": "sAMAccountName",
        "USEROBJECTCLASS": "user",
        "USERSEARCHPATH": "ou=User"
   },
   "error": {
        "code": 0,
        "description": "0"
   }
}
```

2.3.3.2 Delete

2.3.3.2.1 Interface for Deleting Domain Authentication Server Settings

Function

This interface is used to delete domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig

Access Method

DELETE

Parameters

N/A

Result

N/A

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Example

- Deleting domain authentication server settings.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/LDAPConfig

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.3.3 Modify

2.3.3.3.1 Interface for Modifying Domain Authentication Server Settings

Function

This interface is used to modify domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORDHASH	Optional	string	Password hash. **Length:**0~63 **Note:**Cannot contain single quotation marks.
SERVERIP	Optional	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PORT	Optional	uint32	LDAP server port. **The value is described as follows:** 1~65535 **Note:**The default value is 389 for LDAP and 636 for LDAPS.
DIRECTORYTYPE	Optional	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Optional	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Optional	string	Bind DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
BINDPASSWD	Optional	string	Bind password. **Length:**1~63
USERSEARCHPATH	Optional	string	User directory. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.

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Parameter	Mandatory/Optional/Conditional	Type	Description
GROUPSEARCHPATH	Optional	string	Group directory. **Length:**0~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
USERIDATTR	Optional	string	User ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
USERNAMEATTR	Optional	string	User name attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.
GROUPNAMEATTR	Optional	string	Group name attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.
GROUPMEMBERATTR	Optional	string	Group member attribute. **Length:**0~63 **Note:**Cannot contain single quotation marks.
GROUPOBJECTCLASS	Optional	string	Group object type. **Length:**0~63 **Note:**Cannot contain single quotation marks.
USEROBJECTCLASS	Optional	string	User object type. **Length:**1~63 **Note:**Cannot contain single quotation marks.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BASEDN	Optional	string	Base DN. **Length:**1~255 **Note:**Cannot contain single quotation marks.The input format should be like "xxx=yyy",comma separated between multiple values.
GROUPIDATTR	Optional	string	Group ID attribute. **Length:**1~63 **Note:**Cannot contain single quotation marks.

Result

N/A

Example

- Modifying domain authentication server settings.

```
Request: PUT /deviceManager/rest/210235843710E7000007/LDAPConfig
{
      "USERSEARCHPATH": "ou=User1"
}

Response:
 {
   "data": {"TYPE": 238},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.3.4 Query

2.3.3.4.1 Interface for Querying Default Domain Authentication Server Settings

Function

This interface is used to query default domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig/getdefaultldapconfig

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD

Result

Parameter	Mandatory/Conditional	Type	Description
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
GROUPNAMEATTR	Mandatory	string	Group name attribute.
GROUPMEMBERATTR	Mandatory	string	Group member attribute.
GROUPOBJECTCLASS	Mandatory	string	Group object type.
GROUPIDATTR	Mandatory	string	Group ID attribute.
PORT	Mandatory	string(uint32)	LDAP server port.
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
USERIDATTR	Mandatory	string	User ID attribute.
USERNAMEATTR	Mandatory	string	User name attribute.
USEROBJECTCLASS	Mandatory	string	User object type.
PASSWORDHASH	Mandatory	string	password hash.

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Example

- Querying the default settings when the LDAP directory type is AD.

```
Request: GET /deviceManager/rest/210235843710E7000007/LDAPConfig/getdefaultldapconfig?
DIRECTORYTYPE=2

Response:
 {
    "data": {
        "DIRECTORYTYPE": "2",
        "GROUPIDATTR": "uSNCreated",
        "GROUPMEMBERATTR": "member",
        "GROUPNAMEATTR": "sAMAccountName",
        "GROUPOBJECTCLASS": "group",
        "PASSWORDHASH": "crypt",
        "PORT": "636",
        "TRANSFERTYPE": "2",
        "USERIDATTR": "uSNCreated",
        "USERNAMEATTR": "sAMAccountName",
        "USEROBJECTCLASS": "user"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.3.4.2 Interface for Querying Domain Authentication Server Settings

Function

This interface is used to query domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LDAPConfig

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
PASSWORDHASH	Mandatory	string	password hash.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 238: Management LDAP Configuration

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	LDAP server ID. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
COUNT	Mandatory	string(uint32)	Number of objects. **The value is described as follows:** The value must be 1. Only one LDAP server can be configured at present.
SERVERIP	Mandatory	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
PORT	Mandatory	string(uint32)	LDAP server port. **The value is described as follows:** 1~65535
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
BINDDN	Mandatory	string	Bind DN.

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Parameter	Mandatory/ Conditional	Type	Description
BASEDN	Mandatory	string	Base DN.
USERSEARCHPATH	Mandatory	string	User directory.
GROUPSEARCHPATH	Mandatory	string	Group directory.
USERIDATTR	Mandatory	string	User ID attribute.
USERNAMEATTR	Mandatory	string	User name attribute.
GROUPNAMEATTR	Mandatory	string	Group name attribute.
GROUPMEMBERATTR	Mandatory	string	Group member attribute.
USEROBJECTCLASS	Mandatory	string	User object type.
GROUPOBJECTCLASS	Mandatory	string	Group object type.
GROUPIDATTR	Mandatory	string	Group ID attribute.

Example

- Querying domain authentication server settings.

```
Request: GET /deviceManager/rest/210235843710E7000007/LDAPConfig

Response: {
   "data": [
      {
         "BASEDN": "cn=My Application,ou=applications,dc=com",
         "BINDDN": "cn=My Application,ou=applications,dc=com",
         "COUNT": "1",
         "DIRECTORYTYPE": "2",
         "GROUPIDATTR": "uSNCreated",
         "GROUPMEMBERATTR": "member",
         "GROUPNAMEATTR": "sAMAccountName",
         "GROUPOBJECTCLASS": "group",
         "GROUPSEARCHPATH": "",
         "ID": "1",
         "PASSWORDHASH": "",
         "PORT": "636",
         "SERVERIP": "192.168.0.1",
         "TRANSFERTYPE": "2",
         "TYPE": "238",
         "USERIDATTR": "uSNCreated",
         "USERNAMEATTR": "sAMAccountName",
         "USEROBJECTCLASS": "user",
         "USERSEARCHPATH": "ou=applications,dc=com",

      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.3.5 Others

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2.3.3.5.1 Interface for Testing Domain Authentication Server Settings

Function

This interface is used to test domain authentication server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/test_manager_ldapconfig

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
BINDDN	Mandatory	string	Bind DN. **Length:**1~255 **Note:**The input format should be like "xxx=yyy",comma separated between multiple values.
BASEDN	Mandatory	string	Base DN. **Length:**1~255 **Note:**The input format should be like "xxx=yyy",comma separated between multiple values.
DIRECTORYTYPE	Mandatory	string(enum)	LDAP directory type. **The value is described as follows:** 1: LDAP 2: AD
PORT	Optional	uint32	LDAP server port. **The value is described as follows:** 1~65535

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Parameter	Mandatory/Optional/Conditional	Type	Description
SERVERIP	Optional	string	LDAP server IP address. **The value is described as follows:** LDAP server IP addresses. Use commas to separate the IP addresses and a maximum of four IP addresses are supported.
TRANSFERTYPE	Mandatory	string(enum)	Underlying communication protocol type. **The value is described as follows:** 1: LDAP 2: LDAPS
bindPassword	Optional	string	Password for a bound DN. **The value is described as follows:** The value contains 1 to 63 characters. **Length:**1~63

Result

N/A

Example

- Testing domain authentication server settings.

```
Request: PUT /deviceManager/rest/210235843710E7000007/test_manager_ldapconfig
{
        "BASEDN": "cn=My Application,ou=applications,dc=com",
        "BINDDN": "cn=My Application,ou=applications,dc=com",
        "DIRECTORYTYPE": "2",
        "PORT": "636",
        "SERVERIP": "192.168.0.1",
        "TRANSFERTYPE": "2"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
```

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```
    "description": "0"
  }
}
```

2.3.4 safe_strategy

2.3.4.1 Add

2.3.4.2 Delete

2.3.4.3 Modify

2.3.4.3.1 Interface for Modifying Security Policies

Function

This interface is used to modify security policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/USER_SECURITY_POLICY/default

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORDMINLENGTH	Optional	uint32	Minimum password length. **The value is described as follows:** 8 to 32.
PASSWORDMAXLENGTH	Optional	uint32	Maximum password length. **The value is described as follows:** 8 to 32.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PWDCOMPLEX	Optional	enum	Password complexity. **The value is described as follows:** 0: Normal password. The value must contain special characters and at least two of the following types: lowercase characters, uppercase characters, and digits. 1: High-level password. The value must contain special characters, lowercase characters, uppercase characters, and digits.
REDUPLICATECHAR-COUNT	Optional	uint32	Maximum number of consecutive repeated characters. **The value is described as follows:** 0 to 9. The value 0 indicates no restriction.
ENABLEPWDLOCK	Optional	bool	Whether to enable the password lock mechanism. **The value is described as follows:** true: yes false: no **Note:** The account is locked if the number of consecutive inputs of incorrect passwords exceeds the threshold. The super administrator will be automatically unlocked after 15 minutes.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PWDLOCKTIME	Optional	uint32	Password locked period. **The value is described as follows:** 0 or 3 to 2000. The value 0 indicates that the user account is locked permanently. **Unit:**minutes
PWDINCORRECTTIMES	Optional	uint32	Number of password entry attempts. **The value is described as follows:** 1 to 9.
SESSIONEXPIREDTIME	Optional	uint32	Session timeout duration. **The value is described as follows:** 1 to 100. **Unit:**minutes
MINVALIDPERIOD	Optional	uint32	Password change interval. **The value is described as follows:** 0 to 9999. The value 0 indicates no restriction. **Unit:**minutes
MAXVALIDPERIOD	Optional	uint32	Password validity period. **The value is described as follows:** 0 to 999. The value 0 indicates that the password is valid permanently. **Unit:**days

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROMPTAHEAD	Optional	uint32	Advance reminder of password expiry. **The value is described as follows:** 1 to 99. **Unit:**days **Note:**The system notifies the user of password expiry N days in advance. The value of N ranges from 1 to 99.
HISTORYCOUNT	Optional	uint32	Number of historical passwords reserved. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Note:**Number of historical passwords retained for a user. A new password must be different from any of the historical passwords. The value 0 indicates no restriction.
enableUserReview	Optional	bool	Whether to enable the user account audit mechanism. **The value is described as follows:** true: yes false: no **Note:**The number and rights of user accounts are audited regularly for account security. If the audit interval is set to 0 or 1 day, the system audits the accounts every day.

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Parameter	Mandatory/Optional/Conditional	Type	Description
userReviewInterval	Optional	uint32	Interval for auditing user accounts. **The value is described as follows:** 0 to 999. **Unit:**days **Note:**The number and rights of user accounts are audited regularly for account security. If the audit interval is set to 0 or 1 day, the system audits the accounts every day.
userMinLength	Optional	uint32	Minimum length of a user name. **The value is described as follows:** 5 to 32.
inactiveUserLockTime	Optional	uint32	Idle period before the user is locked. **The value is described as follows:** 1 to 999. **Unit:**days **Note:**After this function is enabled, a user is locked if the user does not log in to the system for consecutive N days. N indicates the specified period for locking a user.
enableInactiveUser-Lock	Optional	bool	Whether to lock the user when it is idle. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
enableLoginNotes	Optional	bool	Whether to enable login notification. **The value is described as follows:** true: yes false: no **Note:**The system notifies the user of the last login information (including the login time and IP address) to enhance network security.
enableUserDefNotes	Optional	bool	Whether to enable user-defined notification. **The value is described as follows:** true: yes false: no
userDefNodes	Optional	string	User-defined notification. **Length:**1~511
maxSessionsPerUser	Optional	uint32	Maximum number of online sessions allowed for a user. **The value is described as follows:** 0 to 32. The value 0 indicates no restriction.
minDiffCharCount	Optional	uint32	Minimum number of different characters. **The value is described as follows:** 0 or 3 to 32. The value 0 indicates no restriction. **Default:**0

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Parameter	Mandatory/Optional/Conditional	Type	Description
maxSameCharCount	Optional	uint32	Maximum number of identical characters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Default:**0
minUpperCharCount	Optional	uint32	Minimum number of uppercase letters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Default:**0
minLowerCharCount	Optional	uint32	Minimum number of lowercase letters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Default:**0
minDigitCount	Optional	uint32	Minimum number of digits. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Default:**0
isSessionBindToIP	Optional	bool	Whether to enable the function of binding IP addresses to sessions. **The value is described as follows:** true: yes; false: no

Result

N/A

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Example

- Modifying the minimum length of a user name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/USER_SECURITY_POLICY/default
{
   "userMinLength": "5"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.4.4 Query

2.3.4.4.1 Interface for Querying Security Policies

Function

This interface is used to query security policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/USER_SECURITY_POLICY/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	ID of the security policy. **The value is described as follows:** default **Default:**default

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the object. **The value is described as follows:** 47: USER_SECURITY_POLICY
ID	Mandatory	string	ID of the security policy. **The value is described as follows:** default
PASSWORDMINLENGTH	Mandatory	string(uint32)	Minimum password length. **The value is described as follows:** 8~32
PASSWORDMAXLENGTH	Mandatory	string(uint32)	Maximum password length. **The value is described as follows:** 8~32
PWDCOMPLEX	Mandatory	string(enum)	Password complexity. **The value is described as follows:** 0: Normal password. The value must contain special characters and at least two of the following types: lowercase characters, uppercase characters, and digits. 1: High-level password. The value must contain special characters, lowercase characters, uppercase characters, and digits.

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Parameter	Mandatory/ Conditional	Type	Description
REDUPLICATECHAR-COUNT	Mandatory	string(uint32)	Maximum number of consecutive repeated characters. **The value is described as follows:** 0 to 9. The value 0 indicates no restriction.
ENABLEPWDLOCK	Mandatory	string(bool)	Whether to enable the password lock mechanism. **The value is described as follows:** true: yes false: no **Note:** The account is locked if the number of consecutive inputs of incorrect passwords exceeds the threshold. The super administrator will be automatically unlocked after 15 minutes.
PWDLOCKTIME	Mandatory	string(uint32)	Password locked period. **The value is described as follows:** 0 or 3 to 2000. The value 0 indicates that the user account is locked permanently. **Unit:**minutes
PWDINCORRECTTIMES	Mandatory	string(uint32)	Number of password entry attempts. **The value is described as follows:** 1~9

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Parameter	Mandatory/ Conditional	Type	Description
SESSIONEXPIREDTIME	Mandatory	string(uint32)	Session timeout duration. **The value is described as follows:** 1~100 **Unit:**minutes
MINVALIDPERIOD	Mandatory	string(uint32)	Password change interval. **The value is described as follows:** 0 to 9999. The value 0 indicates no restriction. **Unit:**minutes
MAXVALIDPERIOD	Mandatory	string(uint32)	Password validity period. **The value is described as follows:** 0 to 999. The value 0 indicates that the password is valid permanently. **Unit:**days
PROMPTAHEAD	Mandatory	string(uint32)	Advance reminder of password expiry. **The value is described as follows:** 1~99 **Unit:**days **Note:**The system notifies the user of password expiry N days in advance. The value of N ranges from 1 to 99.

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Parameter	Mandatory/ Conditional	Type	Description
HISTORYCOUNT	Mandatory	string(uint32)	Number of historical passwords reserved. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction. **Note:**Number of historical passwords retained for a user. A new password must be different from any of the historical passwords. The value 0 indicates no restriction.
enableUserReview	Mandatory	string(bool)	Whether to enable the user account audit mechanism. **The value is described as follows:** true: yes false: no **Note:**The number and rights of user accounts are audited regularly for account security. If the audit interval is set to 0 or 1 day, the system audits the accounts every day.
userReviewInterval	Mandatory	string(uint32)	Interval for auditing user accounts. **The value is described as follows:** 0~999 **Unit:**days **Note:**The number and rights of user accounts are audited regularly for account security. If the audit interval is set to 0 or 1 day, the system audits the accounts every day.

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Parameter	Mandatory/ Conditional	Type	Description
enableInactiveUser-Lock	Mandatory	string(bool)	Whether to lock the user when it is idle. **The value is described as follows:** true: yes false: no
inactiveUserLockTime	Mandatory	string(uint32)	Idle period before the user is locked. **The value is described as follows:** 1~999 **Unit:**days **Note:**After this function is enabled, a user is locked if the user does not log in to the system for consecutive N days. N indicates the specified period for locking a user.
userMinLength	Mandatory	string(uint32)	Minimum length of a user name. **The value is described as follows:** 5~32
enableLoginNotes	Mandatory	string(bool)	Whether to enable login notification. **The value is described as follows:** true: yes false: no **Note:**The system notifies the user of the last login information (including the login time and IP address) to enhance network security.

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Parameter	Mandatory/ Conditional	Type	Description
enableUserDefNotes	Mandatory	string(bool)	Whether to enable user-defined notification. **The value is described as follows:** true: yes false: no **Note:**The system notifies the user of the last login information (including the login time and IP address) to enhance network security.
userDefNodes	Mandatory	string	User-defined notification.
maxSessionsPerUser	Mandatory	string(uint32)	Maximum number of online sessions allowed for a user. **The value is described as follows:** 0 to 32. The value 0 indicates no restriction.
minDiffCharCount	Mandatory	uint32	Minimum number of different characters. **The value is described as follows:** 0 to 32. The value 0 indicates no restriction.
maxSameCharCount	Mandatory	uint32	Maximum number of identical characters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction.

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Parameter	Mandatory/ Conditional	Type	Description
minUpperCharCount	Mandatory	uint32	Minimum number of uppercase letters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction.
minLowerCharCount	Mandatory	uint32	Minimum number of lowercase letters. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction.
minDigitCount	Mandatory	uint32	Minimum number of digits. **The value is described as follows:** 0 to 30. The value 0 indicates no restriction.
isSessionBindToIP	Mandatory	bool	Whether to enable the function of binding IP addresses to sessions. **The value is described as follows:** true: yes; false: no

Example

- Querying security policies.

```
Request: GET /deviceManager/rest/210235843710E7000007/USER_SECURITY_POLICY/default

Response:
{
   "data": {
      "ENABLEPWDLOCK": "false",
      "HISTORYCOUNT": "1",
      "ID": "default",
      "MAXVALIDPERIOD": "90",
      "MINVALIDPERIOD": "5",
      "PASSWORDMAXLENGTH": "32",
      "PASSWORDMINLENGTH": "8",
      "PROMPTAHEAD": "7",
      "PWDCOMPLEX":"0",
      "PWDINCORRECTTIMES": "3",
      "PWDLOCKTIME": "3" ,
      "REDUPLICATECHARCOUNT": "0" ,
      "SESSIONEXPIREDTIME": "100" ,
```

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```
        "TYPE": 47,
        "enableInactiveUserLock": "false" ,
        "enableLoginNotes": "false" ,
        "enableUserDefNotes": "true" ,
        "enableUserReview": "false" ,
        "inactiveUserLockTime": "60" ,
        "userDefNodes": "abcdde" ,
        "userMinLength": "6" ,
        "userReviewInterval": "120",
        "maxSessionsPerUser": "10",
        "minDiffCharCount": "0",
        "maxSameCharCount": "0",
        "minUpperCharCount": "0",
        "minLowerCharCount": "0",
        "minDigitCount": "0",
        "isSessionBindToIP": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.4.5 Others

2.3.5 certificate

2.3.5.1 Add

2.3.5.2 Delete

2.3.5.2.1 Interface for Deleting a Certificate

Function

This interface is used to delete a certificate.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/
om_msg_op_delete_certificate_info

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_TYPE	Mandatory	enum	Certificate type. **The value is described as follows:** 26: Disk authentication certificate
USE_OF_CERTIFICATE	Conditional	string	Certificate usage. **The value is described as follows:** The value contains 1 to 127 characters including letters, characters of languages such as Chinese and Japanese, digits, underscores (_), hyphens (-), and periods (.). **Length:**127 **Note:**This parameter must be delivered when the value of "CERTIFICATE_TYPE" is 26 indicating the disk authentication certificate.

Result

N/A

Example

- Deleting a certificate.

```
Request: DELETE /deviceManager/rest/154789a6326987452987/om_msg_op_delete_certificate_info?
CERTIFICATE_TYPE=26&USE_OF_CERTIFICATE=test

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.3.5.2.2 Interface for Deleting a Certificate Revocation List

Function

This interface is used to delete the CRL.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/om_msg_op_delete_crllist

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_CERTIFICATE_TYPE	Mandatory	enum	Certificate revocation list scenario. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 8: Call Home certificate 18: SSO certificate 19: Email certificate 30: Email OTP certificate 68: In-band management certificate
CMO_CERTIFICATE_CRL_ID	Optional	uint32	ID of the CRL. **The value is described as follows:** [1,2]
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

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Result

N/A

Example

- Deleting CRL in a specified scenario.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/om_msg_op_delete_crllist?
CMO_CERTIFICATE_TYPE=1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting CRL whose ID is specified in a specified scenario.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/om_msg_op_delete_crllist?
CMO_CERTIFICATE_TYPE=1&CMO_CERTIFICATE_CRL_ID=1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.5.3 Modify

2.3.5.3.1 Interface for Modifying a Certificate

Function

This interface is used to modify a certificate.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/certificate

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_ENCRYPT_KEY	Optional	string	Private key encryption password. **The value is described as follows:** 1. The value contains 8 to 16 characters. 2. The value must contain spaces and special characters including !"#$%&'()*+,-./:;<=>?@[\]^`{_|}~. 3. The value must contain any two types of uppercase letters, lowercase letters, and digits. 4 The same character cannot appear for more than five consecutive times. 5. The value cannot be the same as the account or mirror writing of the account.
CERTIFICATE_EXPIRE_PREWARNING_TIME	Optional	uint32	Expiration warning days. **The value is described as follows:** The value ranges from 7 to 180.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_TYPE	Mandatory	enum	Certificate type. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 4: HTTPS certificate 5: FTPS certificate 7: NTP certificate 8: Call Home certificate 14: DeviceManager certificate 18: SSO certificate 19: Email certificate 26: Disk authentication certificate 30: Email OTP certificate 38: File service domain authentication certificate 63: CA server certificate 65: SmartContainer certificate 68: In-band management certificate 70: S3 authentication certificate
SUBJECT_ALTERNATIVE_NAME	Optional	string	subjectAltName during automatic certificate update.
SUBJECT_COMMON_NAME	Optional	string	common name field during automatic certificate update.

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Parameter	Mandatory/Optional/Conditional	Type	Description
enabledAutoUpdate	Optional	string(bool)	Whether to enable automatic certificate update. **The value is described as follows:** true: enabled false: disabled
validPeriod	Optional	enum	Validity period set during automatic certificate update. **The value is described as follows:** 10: 10 years 3: 3 years 1:1 year
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

N/A

Example

- Modifying a certificate.

```
Request: PUT /deviceManager/rest/210235843910E6000009/certificate
{
    "CERTIFICATE_EXPIRE_PREWARNING_TIME": 31,
    "CERTIFICATE_TYPE": "2",
    "validPeriod": "10",
    "enabledAutoUpdate": "true",
    "SUBJECT_COMMON_NAME": "Storage",
    "SUBJECT_ALTERNATIVE_NAME": "Storage"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.3.5.3.2 Interface for Modifying CA Server Configurations

Function

This interface is used to configure the CA server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CA_SERVER/set_ca_server_info

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
caServerAddr	Optional	string	IP address of the CA server. **The value is described as follows:** - **Length:**128
caServerSwitch	Optional	bool	Whether to enable automatic certificate update. **The value is described as follows:** true: enables the function. false: disables the function.
certUpdateLeadTime	Optional	uint32	Time in advance for automatic certificate update. **The value is described as follows:** 7~180

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Parameter	Mandatory/Optional/Conditional	Type	Description
caUpdateUri	Optional	string	Endpoint for automatic certificate update. **The value is described as follows:** The value is a string of 1 to 255 ASCII characters. The value cannot contain ':?"<>|* or start with a space or period (.). Path separators / and \ cannot be directly followed by a period (.). **Length:**128
caServerPort	Optional	uint32	Port number of the CA server. **The value is described as follows:** 1~65535

Result

N/A

Example

- Configuring the CA server.

```
Request: PUT /deviceManager/rest/210235843710E7000007/CA_SERVER/set_ca_server_info
{
        "caServerAddr": "192.168.1.1",
        "caServerSwitch": "true",
        "certUpdateLeadTime": "30",
        "caUpdateUri": "/autoupdate",
        "caServerPort": "80"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.5.4 Query

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2.3.5.4.1 Interface for Batch Querying Certificate Information

Function

This interface is used to batch query certificate information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/certificate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

Parameter	Mandatory/Conditional	Type	Description
certificateFingerPrint	Mandatory	string	CA certificate fingerprint information.
CERTIFICATE_EXPIRE_PREWARNING_TIME	Mandatory	string(uint32)	Expiration warning days.
CERTIFICATE_EXPIRE_TIME	Mandatory	string	Expiration date.
CERTIFICATE_STATUS	Mandatory	string(enum)	Certificate status. **The value is described as follows:** 0: inexistent 1: valid 2: invalid

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Parameter	Mandatory/ Conditional	Type	Description
CERTIFICATE_TYPE	Mandatory	string(enum)	Certificate type. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 4: HTTPS certificate 5: FTPS certificate 6: Syslog certificate 7: NTP certificate 8: Call Home certificate 14: DeviceManager certificate 18: SSO certificate 19: Email certificate 26: Disk authentication certificate 30: Email OTP certificate 38: File service domain authentication certificate 63: CA server certificate 65: SmartContainer certificate 68: In-band management certificate 70: S3 authentication certificate

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Parameter	Mandatory/ Conditional	Type	Description
KEY_ALGORITHM	Mandatory	enum	Certificate key algorithm. **The value is described as follows:** 0: KEY_ALGORITHM_RSA 1: KEY_ALGORITHM_ECC 2: KEY_ALGORITHM_DSA
KEY_LENGTH	Mandatory	int32	Length of the certificate's public key.
CA_CERTIFICATE_EXPIRE_TIME	Mandatory	string	CA certificate expiration time. **The value is described as follows:** N/A
CA_CERTIFICATE_STATUS	Mandatory	enum	CA certificate status. **The value is described as follows:** 0: NOT EXIST 1: VALID 2: INVALID
CA_CERTIFICATE_ISSUER	Mandatory	string	CA certificate issuer. **The value is described as follows:** N/A
CA_CERTIFICATE_SUBJECT	Mandatory	string	CA certificate subject. **The value is described as follows:** N/A
CA_CERTIFICATE_SIGNATURE_ALGORITHM	Mandatory	string	CA certificate signature algorithm. **The value is described as follows:** N/A

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Parameter	Mandatory/ Conditional	Type	Description
CA_KEY_ALGORITHM	Mandatory	enum	CA certificate key algorithm. **The value is described as follows:** 0: KEY_ALGORITHM_RSA 1: KEY_ALGORITHM_ECC 2: KEY_ALGORITHM_DSA
CA_KEY_LENGTH	Mandatory	int32	Length of the CA certificate's public key.
CERTIFICATE_FINGERPRINT	Mandatory	string	Certificate fingerprint information.
CERTIFICATE_SIGNATURE_ALGORITHM	Mandatory	string	Certificate signature algorithm. **The value is described as follows:** N/A
CERTIFICATE_SUBJECT	Mandatory	string	Certificate subject. **The value is described as follows:** N/A
CERTIFICATE_ISSUER	Mandatory	string	Certificate issuer. **The value is described as follows:** N/A
USE_OF_CERTIFICATE	Mandatory	string	Certificate usage. **The value is described as follows:** N/A
vstoreId	Mandatory	int32	vStore ID. **The value is described as follows:** 0 to 1023.
isSupportAutoUpdate	Mandatory	string(bool)	Whether automatic update is supported.

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Parameter	Mandatory/ Conditional	Type	Description
validPeriod	Mandatory	enum	Validity period for automatic certificate update. **The value is described as follows:** 10: 10 years 3: 3 years 1:1 year
enabledAutoUpdate	Mandatory	string(bool)	Whether automatic update is enabled.
SUBJECT_COMMON_NAME	Mandatory	string	common name field during automatic certificate update.
SUBJECT_ALTERNATIVE_NAME	Mandatory	string	subjectAltName field during automatic certificate update.

Example

- Batch querying certificate information.

```
Request: GET/deviceManager/rest/210235843910E6000009/certificate

Response: {
   "data": [
      {
         "CA_CERTIFICATE_EXPIRE_TIME": "2029-09-07",
         "CA_CERTIFICATE_ISSUER":
"C=CN,S=SiChuan,L=ChengDu,O=Huawei,OU=Storage,CN=WH_RSA_CA",
         "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "SHA512RSA",
         "CA_CERTIFICATE_STATUS": "1",
         "CA_CERTIFICATE_SUBJECT":
"C=CN,S=SiChuan,L=ChengDu,O=Huawei,OU=Storage,CN=WH_RSA_CA",
         "CA_KEY_ALGORITHM": "0",
         "CA_KEY_LENGTH": "2040",
         "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
         "CERTIFICATE_EXPIRE_TIME": "2029-09-07",
         "CERTIFICATE_FINGERPRINT": "2D:89:25:52:D7:CE:A3:13:F0:2D:B1:72:CE:7F:3B:AE:01:A6:90:CE",
         "CERTIFICATE_ISSUER":
"C=CN,S=SiChuan,L=ChengDu,O=Huawei,OU=Storage,CN=WH_RSA_CA",
         "CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
         "CERTIFICATE_STATUS": "1",
         "CERTIFICATE_SUBJECT":
"C=CN,S=SiChuan,O=Huawei,OU=Storage,CN=2102359825KD32011987",
         "CERTIFICATE_TYPE": "2",
         "KEY_ALGORITHM": "0",
         "KEY_LENGTH": "2048",
         "certificateFingerPrint": "4E:0B:AE:27:A4:35:D3:70:84:28:26:C2:AC:D5:2D:C4:C7:91:A9:09",
         "vstoreId" : "0",
         “SUBJECT_COMMON_NAME”: "Storage",
         "SUBJECT_ALTERNATIVE_NAME": "Storage",
         "enabledAutoUpdate": "true",
         "validPeriod": 10,
         "isSupportAutoUpdate": "true"
```

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```
    },
    {
        "CA_CERTIFICATE_EXPIRE_TIME": "2041-08-28",
        "CA_CERTIFICATE_ISSUER": "C=CN,O=Huawei,CN=Huawei Equipment CA",
        "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
        "CA_CERTIFICATE_STATUS": "1",
        "CA_CERTIFICATE_SUBJECT": "C=CN,O=Huawei,CN=Huawei Equipment CA",
        "CA_KEY_ALGORITHM": "0",
        "CA_KEY_LENGTH": "4096",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "2029-05-12",
        "CERTIFICATE_FINGERPRINT": "F8:CA:5A:2D:20:0F:7A:9C:E7:3E:7A:79:91:69:76:77:05:5B:B9:97",
        "CERTIFICATE_ISSUER": "C=CN,O=Huawei,CN=Huawei IT Product CA",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
        "CERTIFICATE_STATUS": "1",
        "CERTIFICATE_SUBJECT": "C=CN,O=Huawei,OU=Storage,CN=HM",
        "CERTIFICATE_TYPE": "3",
        "KEY_ALGORITHM": "0",
        "KEY_LENGTH": "2048",
        "certificateFingerPrint": "60:B2:B7:BE:EF:2F:83:2C:59:6E:FF:75:CD:4C:F8:2B:19:B0:79:04",
        "vstoreId" : "0",
        “SUBJECT_COMMON_NAME”: "",
        "SUBJECT_ALTERNATIVE_NAME": "",
        "enabledAutoUpdate": "false",
        "validPeriod": 0,
        "isSupportAutoUpdate": "false"
    },
    {
        "CA_CERTIFICATE_EXPIRE_TIME": "--",
        "CA_CERTIFICATE_ISSUER": "--",
        "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CA_CERTIFICATE_STATUS": "0",
        "CA_CERTIFICATE_SUBJECT": "--",
        "CA_KEY_ALGORITHM": "3",
        "CA_KEY_LENGTH": "0",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "--",
        "CERTIFICATE_FINGERPRINT": "--",
        "CERTIFICATE_ISSUER": "--",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CERTIFICATE_STATUS": "0",
        "CERTIFICATE_SUBJECT": "--",
        "CERTIFICATE_TYPE": "6",
        "KEY_ALGORITHM": "3",
        "KEY_LENGTH": "0",
        "certificateFingerPrint": "--",
        "vstoreId" : "0",
        “SUBJECT_COMMON_NAME”: "",
        "SUBJECT_ALTERNATIVE_NAME": "",
        "enabledAutoUpdate": "false",
        "validPeriod": 0,
        "isSupportAutoUpdate": "false"
    },
    {
        "CA_CERTIFICATE_EXPIRE_TIME": "--",
        "CA_CERTIFICATE_ISSUER": "--",
        "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CA_CERTIFICATE_STATUS": "0",
        "CA_CERTIFICATE_SUBJECT": "--",
        "CA_KEY_ALGORITHM": "3",
        "CA_KEY_LENGTH": "0",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "--",
        "CERTIFICATE_FINGERPRINT": "--",
        "CERTIFICATE_ISSUER": "--",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CERTIFICATE_STATUS": "0",
        "CERTIFICATE_SUBJECT": "--",
        "CERTIFICATE_TYPE": "7",
```


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```
            "KEY_ALGORITHM": "3",
            "KEY_LENGTH": "0",
            "certificateFingerPrint": "--",
            "vstoreId" : "0",
            “SUBJECT_COMMON_NAME”: "",
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        },
        {
            "CA_CERTIFICATE_EXPIRE_TIME": "2030-09-22",
            "CA_CERTIFICATE_ISSUER": "C=IT,L=Milan,O=Actalis S.p.A./03358520967,CN=Actalis
Authentication Root CA",
            "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
            "CA_CERTIFICATE_STATUS": "1",
            "CA_CERTIFICATE_SUBJECT": "C=IT,L=Milan,O=Actalis S.p.A./03358520967,CN=Actalis
Authentication Root CA",
            "CA_KEY_ALGORITHM": "0",
            "CA_KEY_LENGTH": "4096",
            "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
            "CERTIFICATE_EXPIRE_TIME": "--",
            "CERTIFICATE_FINGERPRINT": "--",
            "CERTIFICATE_ISSUER": "--",
            "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CERTIFICATE_STATUS": "0",
            "CERTIFICATE_SUBJECT": "--",
            "CERTIFICATE_TYPE": "8",
            "KEY_ALGORITHM": "3",
            "KEY_LENGTH": "0",
            "certificateFingerPrint": "F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC",
            "vstoreId" : "0",
            “SUBJECT_COMMON_NAME”: "",
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        },
         {
            "CA_CERTIFICATE_EXPIRE_TIME": "--",
            "CA_CERTIFICATE_ISSUER": "--",
            "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CA_CERTIFICATE_STATUS": "0",
            "CA_CERTIFICATE_SUBJECT": "--",
            "CA_KEY_ALGORITHM": "3",
            "CA_KEY_LENGTH": "0",
            "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
            "CERTIFICATE_EXPIRE_TIME": "2028-05-20",
            "CERTIFICATE_FINGERPRINT": "D2:F3:83:F2:E8:A9:A7:27:1C:97:27:76:ED:58:AB:08:2F:ED:8D:16",
            "CERTIFICATE_ISSUER": "C=CN,O=Huawei,CN=Huawei IT Product CA",
            "CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
            "CERTIFICATE_STATUS": "1",
            "CERTIFICATE_SUBJECT": "C=CN,O=Huawei,OU=Storage,CN=DM",
            "CERTIFICATE_TYPE": "14",
            "KEY_ALGORITHM": "0",
            "KEY_LENGTH": "2048",
            "certificateFingerPrint": "60:B2:B7:BE:EF:2F:83:2C:59:6E:FF:75:CD:4C:F8:2B:19:B0:79:04",
            "vstoreId" : "0",
            “SUBJECT_COMMON_NAME”: "",
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        },
        {
            "CA_CERTIFICATE_EXPIRE_TIME": "--",
            "CA_CERTIFICATE_ISSUER": "--",
            "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CA_CERTIFICATE_STATUS": "0",
```

```
        "CA_CERTIFICATE_SUBJECT": "--",
        "CA_KEY_ALGORITHM": "3",
        "CA_KEY_LENGTH": "0",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "--",
        "CERTIFICATE_FINGERPRINT": "--",
        "CERTIFICATE_ISSUER": "--",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CERTIFICATE_STATUS": "0",
        "CERTIFICATE_SUBJECT": "--",
        "CERTIFICATE_TYPE": "18",
        "KEY_ALGORITHM": "3",
        "KEY_LENGTH": "0",
        "certificateFingerPrint": "--",
        "vstoreId" : "0",
        “SUBJECT_COMMON_NAME”: "",
        "SUBJECT_ALTERNATIVE_NAME": "",
        "enabledAutoUpdate": "false",
        "validPeriod": 0,
        "isSupportAutoUpdate": "false"
    },
    {
        "CA_CERTIFICATE_EXPIRE_TIME": "--",
        "CA_CERTIFICATE_ISSUER": "--",
        "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CA_CERTIFICATE_STATUS": "0",
        "CA_CERTIFICATE_SUBJECT": "--",
        "CA_KEY_ALGORITHM": "3",
        "CA_KEY_LENGTH": "0",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "--",
        "CERTIFICATE_FINGERPRINT": "--",
        "CERTIFICATE_ISSUER": "--",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CERTIFICATE_STATUS": "0",
        "CERTIFICATE_SUBJECT": "--",
        "CERTIFICATE_TYPE": "19",
        "KEY_ALGORITHM": "3",
        "KEY_LENGTH": "0",
        "certificateFingerPrint": "--",
        "vstoreId" : "0",
        “SUBJECT_COMMON_NAME”: "",
        "SUBJECT_ALTERNATIVE_NAME": "",
        "enabledAutoUpdate": "false",
        "validPeriod": 0,
        "isSupportAutoUpdate": "false"
    },
    {
        "CA_CERTIFICATE_EXPIRE_TIME": "2041-10-12",
        "CA_CERTIFICATE_ISSUER": "C=CN,O=Huawei,CN=Huawei Equipment CA",
        "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
        "CA_CERTIFICATE_STATUS": "1",
        "CA_CERTIFICATE_SUBJECT": "C=CN,O=Huawei,CN=Huawei Equipment CA",
        "CA_KEY_ALGORITHM": "0",
        "CA_KEY_LENGTH": "4096",
        "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
        "CERTIFICATE_EXPIRE_TIME": "--",
        "CERTIFICATE_FINGERPRINT": "--",
        "CERTIFICATE_ISSUER": "--",
        "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
        "CERTIFICATE_STATUS": "0",
        "CERTIFICATE_SUBJECT": "--",
        "CERTIFICATE_TYPE": "26",
        "KEY_ALGORITHM": "3",
        "KEY_LENGTH": "0",
        "USE_OF_CERTIFICATE": "1111",
        "certificateFingerPrint": "60:B2:B7:BE:EF:2F:83:2C:59:6E:FF:75:CD:4C:F8:2B:19:B0:79:04",
        "vstoreId" : "0",
        “SUBJECT_COMMON_NAME”: "",
```

```
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        },
        {
            "CA_CERTIFICATE_EXPIRE_TIME": "2041-10-12",
            "CA_CERTIFICATE_ISSUER": "C=CN,O=Huawei,CN=Huawei Equipment CA",
            "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "SHA256RSA",
            "CA_CERTIFICATE_STATUS": "1",
            "CA_CERTIFICATE_SUBJECT": "C=CN,O=Huawei,CN=Huawei Equipment CA",
            "CA_KEY_ALGORITHM": "0",
            "CA_KEY_LENGTH": "4096",
            "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
            "CERTIFICATE_EXPIRE_TIME": "--",
            "CERTIFICATE_FINGERPRINT": "--",
            "CERTIFICATE_ISSUER": "--",
            "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CERTIFICATE_STATUS": "0",
            "CERTIFICATE_SUBJECT": "--",
            "CERTIFICATE_TYPE": "26",
            "KEY_ALGORITHM": "3",
            "KEY_LENGTH": "0",
            "USE_OF_CERTIFICATE": "Default",
            "certificateFingerPrint": "60:B2:B7:BE:EF:2F:83:2C:59:6E:FF:75:CD:4C:F8:2B:19:B0:79:04",
            "vstoreId" : "0",
            “SUBJECT_COMMON_NAME”: "",
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        },
        {
            "CA_CERTIFICATE_EXPIRE_TIME": "--",
            "CA_CERTIFICATE_ISSUER": "--",
            "CA_CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CA_CERTIFICATE_STATUS": "0",
            "CA_CERTIFICATE_SUBJECT": "--",
            "CA_KEY_ALGORITHM": "3",
            "CA_KEY_LENGTH": "0",
            "CERTIFICATE_EXPIRE_PREWARNING_TIME": "30",
            "CERTIFICATE_EXPIRE_TIME": "--",
            "CERTIFICATE_FINGERPRINT": "--",
            "CERTIFICATE_ISSUER": "--",
            "CERTIFICATE_SIGNATURE_ALGORITHM": "--",
            "CERTIFICATE_STATUS": "0",
            "CERTIFICATE_SUBJECT": "--",
            "CERTIFICATE_TYPE": "30",
            "KEY_ALGORITHM": "3",
            "KEY_LENGTH": "0",
            "certificateFingerPrint": "--",
            "vstoreId" : "0",
            “SUBJECT_COMMON_NAME”: "",
            "SUBJECT_ALTERNATIVE_NAME": "",
            "enabledAutoUpdate": "false",
            "validPeriod": 0,
            "isSupportAutoUpdate": "false"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


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2.3.5.4.2 Interface for Querying CA Server Configurations

Function

This interface is used to query the CA server configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CA_SERVER/get_ca_server_info

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
caServerAddr	Mandatory	string	IP address.
caServerSwitch	Mandatory	bool	Whether automatic certificate update is enabled. **The value is described as follows:** 1: enabled 0: disabled
certUpdateLeadTime	Mandatory	uint32	Time in advance for automatic certificate update. **The value is described as follows:** 7~180
caUpdateUri	Mandatory	string	Endpoint for automatic certificate update.
caServerPort	Mandatory	uint32	Port number of the CA server. **The value is described as follows:** 1~65535

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Example

- Querying the CA server configuration.

```
Request: GET /deviceManager/rest/210235843910E6000009/CA_SERVER/get_ca_server_info

Response:
{
   "data": {
      "caServerAddr": "192.168.1.1",
      "caServerSwitch": "1",
      "certUpdateLeadTime": "30",
      "caUpdateUri": "/autoupdate",
      "caServerPort": "80"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.5.4.3 Interface for Querying Certificate Revocation List Information

Function

This interface is used to obtain information about the CRL.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/om_msg_op_get_crllist

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_CERTIFICATE_TYPE	Optional	enum	Certificate revocation list scenario. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 8: Call Home certificate 18: SSO certificate 19: Email certificate 30: Email OTP certificate 68: In-band management certificate

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Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_CERTIFICATE_TYPE	Mandatory	enum	Certificate revocation list scenario. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 4: Call Home certificate 5: SSO certificate 6: Email certificate 7: Email OTP certificate 8: In-band management certificate
CMO_CERTIFICATE_CRL_ID	Mandatory	uint32	ID of the CRL. **The value is described as follows:** 1..2
CMO_CERTIFICATE_CRL_STATUS	Mandatory	enum	Status of the CRL. **The value is described as follows:** 0: inexistent 1: valid 2: invalid
CMO_CERTIFICATE_CRL_ISSUER_NAME		string	CRL issuer name.
CMO_CERTIFICATE_CRL_EXPIRE_TIME	Mandatory	string	Expiration time of the CRL.
vstoreId	Mandatory	int32	vStore ID. **The value is described as follows:** 0 to 1023.

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Example

- Querying CRL information.

```
Request: GET /deviceManager/rest/2102350BSE10EA000006/om_msg_op_get_crllist

Response: {
   "data": [
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
         "CMO_CERTIFICATE_CRL_ID": "1",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
         "CMO_CERTIFICATE_CRL_STATUS": "0",
         "CMO_CERTIFICATE_TYPE": "0",
         "vstoreId" : "0"
      },
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
         "CMO_CERTIFICATE_CRL_ID": "2",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
         "CMO_CERTIFICATE_CRL_STATUS": "0",
         "CMO_CERTIFICATE_TYPE": "0",
         "vstoreId" : "0"
      },
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "2027-05-14",
         "CMO_CERTIFICATE_CRL_ID": "1",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "Storage",
         "CMO_CERTIFICATE_CRL_STATUS": "1",
         "CMO_CERTIFICATE_TYPE": "2",
         "vstoreId" : "0"
      },
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
         "CMO_CERTIFICATE_CRL_ID": "2",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
         "CMO_CERTIFICATE_CRL_STATUS": "0",
         "CMO_CERTIFICATE_TYPE": "2",
         "vstoreId" : "0"
      },
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
         "CMO_CERTIFICATE_CRL_ID": "1",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
         "CMO_CERTIFICATE_CRL_STATUS": "0",
         "CMO_CERTIFICATE_TYPE": "3",
         "vstoreId" : "0"
      },
      {
         "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
         "CMO_CERTIFICATE_CRL_ID": "2",
         "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
         "CMO_CERTIFICATE_CRL_STATUS": "0",
         "CMO_CERTIFICATE_TYPE": "3",
         "vstoreId" : "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying CRL information in the domain authentication scenario.

```
Request: GET /deviceManager/rest/2102350BSE10EA000006/om_msg_op_get_crllist?
CMO_CERTIFICATE_TYPE=0

Response: {
   "data": [
      {
```

```
            "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
            "CMO_CERTIFICATE_CRL_ID": "1",
            "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
            "CMO_CERTIFICATE_CRL_STATUS": "0",
            "CMO_CERTIFICATE_TYPE": "0",
            "vstoreId" : "0"
        },
        {
            "CMO_CERTIFICATE_CRL_EXPIRE_TIME": "--",
            "CMO_CERTIFICATE_CRL_ID": "2",
            "CMO_CERTIFICATE_CRL_ISSUER_NAME": "--",
            "CMO_CERTIFICATE_CRL_STATUS": "0",
            "CMO_CERTIFICATE_TYPE": "0",
            "vstoreId" : "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.5.5 Others

2.3.5.5.1 Interface for Activating a Certificate

Function

This interface is used to activate a certificate.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/certificate/active

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CA_CERTIFICATE_NAME	Conditional	string	CA certificate file name. **Note:**The certificate and CA certificate are required simultaneously for the key management center, HyperMetro arbitration, and CA server. The CA certificate is required for domain authentication, Syslog server authentication, NTP authentication, Call Home authentication, SSO authentication, email authentication, disk authentication, and OTP email authentication. The certificate is required for DeviceManager authentication, in-band management, and S3 authentication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_NAME	Conditional	string	Certificate file name. **Note:**The certificate and CA certificate are required simultaneously for the key management center, HyperMetro arbitration, and CA server. The CA certificate is required for domain authentication, Syslog server authentication, NTP authentication, Call Home authentication, SSO authentication, email authentication, disk authentication, and OTP email authentication. The certificate is required for DeviceManager authentication, in-band management, and S3 authentication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_TYPE	Mandatory	enum	Certificate type. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 4: HTTPS certificate 5: FTPS certificate 6: Syslog certificate 7: NTP certificate 8: Call Home certificate 14: DeviceManager certificate 18: SSO certificate 19: Email certificate 26: Disk authentication certificate 30: Email OTP certificate 38: File service domain authentication certificate 63: CA server certificate 68: In-band management certificate 70: S3 authentication certificate
PRIVATE_KEY_NAME	Optional	string	Private key file name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
USE_OF_CERTIFICATE	Conditional	string	Certificate usage. **The value is described as follows:** The value contains 1 to 127 characters including letters, characters of languages such as Chinese and Japanese, digits, underscores (_), hyphens (-), and periods (.). **Length:**127 **Note:**This parameter must be delivered when the value of "CERTIFICATE_TYPE" is 26 indicating the disk authentication certificate.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

N/A

Usage Guidelines

This interface can be normally delivered when the certificate file is successfully imported.

Example

- Activating a certificate.

```
Request: PUT /deviceManager/rest/210235843910E6000009/certificate/active
{
   "CERTIFICATE_TYPE": "2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.3.5.5.2 Interface for Activating a Certificate Revocation List

Function

This interface is used to activate the CRL.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/
OM_MSG_OP_ACTIVATE_CRLLIST

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_CERTIFICATE_TYPE	Mandatory	enum	Certificate revocation list scenario. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 8: Call Home certificate 18: SSO certificate 19: Email certificate 30: Email OTP certificate 68: In-band management certificate

Result

N/A

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Usage Guidelines

This interface can be normally delivered when the certificate revocation file is successfully imported.

Example

- Activating a CRL.

```
Request: PUT /deviceManager/rest/210235843910E6000009/OM_MSG_OP_ACTIVATE_CRLLIST
{
    "CMO_CERTIFICATE_TYPE":"2"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.5.5.3 Interface for Checking Certificate Security

Function

This interface is used to check certificate security.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/certificate/checksecurity

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CERTIFICATE_TYPE	Mandatory	enum	Certificate type. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 4: HTTPS certificate 5: FTPS certificate 6: Syslog certificate 7: NTP certificate 8: Call Home certificate 14: DeviceManager certificate 18: SSO certificate 19: Email certificate 26: Disk authentication certificate 30: Email OTP certificate 38: File service domain authentication certificate 63: CA server certificate 68: In-band management certificate 70: S3 authentication certificate

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Parameter	Mandatory/Optional/Conditional	Type	Description
USE_OF_CERTIFICATE	Conditional	string	Certificate usage. **The value is described as follows:** The value contains 1 to 127 characters including letters, characters of languages such as Chinese and Japanese, digits, underscores (_), hyphens (-), and periods (.). **Length:**127 **Note:**This parameter must be delivered when the value of "CERTIFICATE_TYPE" is 26 indicating the disk authentication certificate.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

Parameter	Mandatory/Conditional	Type	Description
isLowSecurity	Mandatory	string(bool)	Whether the certificate is insecure. **The value is described as follows:** 1: insecure 0: secure

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Parameter	Mandatory/ Conditional	Type	Description
reasonOfLowSecurity	Mandatory	string	Causes of the insecure certificate. **The value is described as follows:** 1. The certificate key length is insecure. 2. The certificate signature algorithm is insecure. 3. The certificate CN is not the same as the array SN. 4. The key length of the CA certificate is insecure. 5. The signature algorithm of the CA certificate is insecure. **Note:** When the certificate is insecure, this field is returned in the format of [cause 1, cause 2, cause 3, ...]. When the certificate is secure, "" is returned in this field. The format of the returned message: [cause 1, cause 2, cause 3, ...]. Example 1: [2,3] indicates that the certificate signature algorithm is insecure and the certificate CN is not the same as the array SN. Example 2: [5] indicates that the signature algorithm of the CA certificate is insecure.

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Usage Guidelines

This interface can be normally delivered when the certificate file is successfully imported.

Example

- Checking certificate security.

```
Request: POST /deviceManager/rest/210235843910E6000009/certificate/checksecurity
{
   "CERTIFICATE_TYPE": "2"
}

Response: {
   "data": {
      "isLowSecurity": "1",
      "reasonOfLowSecurity": "[3]"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.5.5.4 Interface for Importing a Certificate Revocation List

Function

This interface is used to import a CRL.

HighRisk

You are about to import the certificate revocation list. This operation will revoke the certificate file and may cause the SSL connection failure.

Suggestion: Before performing this operation, ensure that you accept the aforementioned risks and the certificate revocation list to be imported is correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/file/revokeCertificate?CMO_CERTIFICATE_TYPE=${CMO_CERTIFICATE_TYPE}

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_CERTIFICATE_TYPE	Mandatory	enum	Certificate revocation list scenario. **The value is described as follows:** 0: KMC certificate 2: Domain authentication certificate 3: HyperMetro arbitration certificate 8: Call Home certificate 18: SSO certificate 19: Email certificate 30: Email OTP certificate 68: In-band management certificate
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be delivered in the vStore scenario.

Result

N/A

Usage Guidelines

The certificate files and iBaseToken values imported through this interface must be delivered in the binary format so that the device can receive and authenticate the files and values normally.

Example

- Importing a CRL.

```
Request: POST /deviceManager/rest/deviceManager/rest/210235843710E7000007/file/
revokeCertificate?CMO_CERTIFICATE_TYPE=2

{
   Content-Type: multipart/form-data; boundary=----------------------------16117264629560
   Content-Length: 1087

   ----------------------------16117264629560
```

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```
  Content-Disposition: form-data; name="uploadRevokeCertificate_UPLOAD_FILE"; filename="test.crl"
  Content-Type: application/octet-stream

  -----BEGIN X509 CRL-----
  MIIB1TCBvgIBATANBgkqhkiG9w0BAQsFADBSMQswCQYDVQQGEwJjbjELMAkGA1UE
  CAwCc2MxCzAJBgNVBAcMAmNkMQswCQYDVQQKDAJodzELMAkGA1UECwwCZ3cxDzAN
  BgNVBAMMBjEyMzQ1NhcNMTcwNTEyMTMyNDM5WhcNMTcwNjExMTMyNDM5WjAoMBIC
  AQEXDTE3MDQxNTE2NTUwMlowEgIBAhcNMTcwNTEyMTMyMzU0WqAOMAwwCgYDVR0U
  BAMCAQEwDQYJKoZIhvcNAQELBQADggEBAFmMjWYdE0+z8naONKRZykbo/X9ZFeWJ
  DSVzdmRmdNqymOrf7RvdygLV2j11SdaJXoPyiDCl3MtsZp6Jz58il3b39GANNsj6
  jl3APZQS+gkhZLoCPdQJV8aFSKqIQyIgJeMHJuQhYQhSvyucIsrYjg7IsNqZp29S
  aON3bjAGUeYNueNdnD/e19ac78dDsd+I984a6ADa+Rmk4kwGTH1SU0H+jEiQkKLr
  OceOpbkBpuAa104tlNzITUhFwVcMHLniMbm6DS3R4bcdtvaCi41tIAOToCF0/fIW
  /PmjBMmdVgQg6130w6NUbbJx6uQ6q9ZRwXIqDO5nWNpBgULs1agSyJk=
  -----END X509 CRL-----

  ----------------------------16117264629560
  Content-Disposition: form-data; name="iBaseToken"

  EB314F2F946D56AD8A762E0E1D9BA7E20E6D6F0B6A44F1117B52E398FE581A18
  ----------------------------16117264629560--
}
```

Response: None

2.3.5.5.5 Interface for Testing CA Server Configurations

Function

This interface is used to test the CA server configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CA_SERVER/test_ca_server

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
caServerAddr	Mandatory	string	IP address of the CA server. **The value is described as follows:** - **Length:**128
caServerPort	Mandatory	uint32	Port number of the CA server. **The value is described as follows:** 1~65535

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Result

N/A

Example

- Test the CA server configuration.

```
Request: PUT /deviceManager/rest/210235843710E7000007/CA_SERVER/test_ca_server
{
        "CASERVERADDR": "192.168.1.1",
        "CASERVERPORT": "80"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.6 role

2.3.6.1 Add

2.3.6.1.1 Interface for Adding Permit List

Function

This interface is used to add permit list.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/add_permit_list

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
permitList	Mandatory	string	
id	Mandatory	uint32	

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Result

N/A

Example

- Adding permit list.

```
Request: PUT /deviceManager/rest/210235843910E6000009/add_permit_list
{
   "permitList": "lun:lun;",
   "id": "20"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.6.1.2 Interface for Creating a Custom Role

Function

Create a custom role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Role name. **Length:**1~63
description	Optional	string	Description. **Length:**0~255
permitList	Optional	string	Permission list. **Length:**0~2047

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Parameter	Mandatory/Optional/Conditional	Type	Description
roleOwnerGroup	Mandatory	enum	Owning group. **The value is described as follows:** 1: system group 2: vStore group

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: system group 2: vStore group
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: built-in 1: custom

Example

- Create a custom role.

```
Request: POST /deviceManager/rest/210235843910E6000009/role

{
   "description": "hello my role",
   "name": "myrole",
   "permitList": "lun:lun_W,lun_R;",
   "roleOwnerGroup": "1"
}

Response:
{
   "data": {
      "description": "hello my role",
      "id": "65",
      "name": "myrole",
      "permitList": "lun:lun_W,lun_R",
```

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```
        "roleOwnerGroup": "1",
        "roleSource": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.6.1.3 Interface for Creating Role

Function

This interface is used to create a role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Role name. **Length:**1~63
description	Optional	string	Description. **Length:**0~255
permitList	Optional	string	Permission list. **Length:**0~2047
roleOwnerGroup	Mandatory	enum	Owning group. **The value is described as follows:** 1: system group.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.

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Parameter	Mandatory/ Conditional	Type	Description
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: system group.
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: built-in 1: user-defined

Example

- Creating a role.

```
Request: POST /deviceManager/rest/210235843910E6000009/role

{
   "description": "hello my role",
   "name": "myrole",
   "permitList": "lun:lun_W,lun_R;",
   "roleOwnerGroup": "1"
}

Response:
{
   "data": {
      "description": "hello my role",
      "id": "65",
      "name": "myrole",
      "permitList": "lun:lun_W,lun_R",
      "roleOwnerGroup": "1",
      "roleSource": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.6.2 Delete

2.3.6.2.1 Interface for Deleting Role

Function

This interface is used to delete a role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Role ID.

Result

N/A

Example

- Deleting a role.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/role
{
    "id":20
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.6.2.2 Interface for Removing Permit List

Function

This interface is used to remove the permission list.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remove_permit_list

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
permitList	Mandatory	string	Permission list.

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Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Role ID.

Result

N/A

Example

- Removing the permission list.

```
Request: PUT /deviceManager/rest/210235843910E6000009/remove_permit_list
{
    "permitList": "lun:lun_W,lun_R;",
    "id":"20"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.6.3 Modify

2.3.6.3.1 Interface for Modifying Role

Function

This interface is used to modify the role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Role ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
description	Optional	string	Description. **Length:**0~255 **Note:**This field cannot be changed concurrently with the name field.
name	Optional	string	Role name. **Length:**1~63 **Note:**This field cannot be changed concurrently with the description field.

Result

N/A

Example

- Modifying the role.

```
Request: PUT /deviceManager/rest/210235843910E6000009/role/20
{
    "description": "hello test role"
}

Response: {
    "data": {
        "TYPE": 15367
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.3.6.4 Query

2.3.6.4.1 Interface for Batch Querying Role

Function

This interface is used to batch query roles.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role

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Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: System group.
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: Built-in 1: Custom

Example

- Batch querying roles.

```
Request: GET /deviceManager/rest/210235843910E6000009/role

Response:
{
   "data": [
      {
         "id": "1060",
         "description": "hello1",
         "name": "user1",
         "permitList": "lun:lun;",
         "roleOwnerGroup": "1",
         "roleSource": "0"
      },
      {
         "id": "4106",
         "description": "hello2",
         "name": "user1",
         "permitList": "share:share;",
         "roleOwnerGroup": "1",
         "roleSource": "0"
      }
   ],
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.3.6.4.2 Interface for Batch Querying Roles

Function

This interface is used to batch query roles.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: system group 2: vStore group
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: built-in 1: custom

Example

- Batch querying roles.

```
Request: GET /deviceManager/rest/210235843910E6000009/role
```

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```
Response:
{
   "data": [
      {
         "id": "1060",
         "description": "hello1",
         "name": "user1",
         "permitList": "lun:lun;",
         "roleOwnerGroup": "1",
         "roleSource": "0"
      },
      {
         "id": "4106",
         "description": "hello2",
         "name": "user1",
         "permitList": "share:share;",
         "roleOwnerGroup": "1",
         "roleSource": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.6.4.3 Interface for Querying a Role

Function

Query a role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Role ID.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.

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Parameter	Mandatory/ Conditional	Type	Description
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: system group 2: vStore group
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: built-in 1: custom

Example

- Query a role.

```
Request: GET/deviceManager/rest/210235843910E6000009/role/202

Response: {
   "data": {
      "id": "202",
      "description": "hello1",
      "name": "user1",
      "permitList": "lun:lun;",
      "roleOwnerGroup": "1",
      "roleSource": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.6.4.4 Interface for Querying Permissions Available for the User-Defined Role

Function

Query permissions available for the user-defined role.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/querying_permissions_available

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
roleOwnerGroup	Mandatory	enum	Owning group. **The value is described as follows:** 1: system group 2: vStore group

Result

Parameter	Mandatory/Conditional	Type	Description
permitList	Mandatory	string	Permission list.

Example

- Query permissions available for the user-defined role.

```
Request: GET /deviceManager/rest/2102353TXP10L8000009/querying_permissions_available?
roleOwnerGroup=1&t=1646120121670

Response: {
    "data": {
        "permitList":
"user:ldap_R,ldap_W,safe_strategy_R,safe_strategy_W;pool:disk_domain_R,disk_domain_W,storage_pool
_R,storage_pool_W,disk_R,disk_W,enclosure_R,enclosure_W;lun:lun_R,lun_W,recycle_bin_R,recycle_bin_
W;mapping_view:initiator_R,initiator_W,target_R,target_W,isns_R,isns_W,mapping_view_R,mapping_vie
w_W,lun_group_R,lun_group_W,host_group_R,host_group_W,host_R,host_W,port_group_R,port_group_
W;network:port_R,port_W,controller_R,controller_W,interface_module_R,interface_module_W,dns_zone_
R,dns_zone_W;local_data_protection:remote_device_R,remote_device_W,lun_snapshot_R,lun_snapshot_
W,hyper_cdp_R,hyper_cdp_W,snap_group_R,snap_group_W,hyper_clone_R,hyper_clone_W,hyper_clone_
group_R,hyper_clone_group_W,lun_consistency_group_R,lun_consistency_group_W;remote_data_protect
ion:lun_group_R,lun_group_W,remote_device_R,remote_device_W,remote_replication_R,remote_replicati
on_W,consistency_group_R,consistency_group_W,dr_star_R,dr_star_W;hyper_metro:remote_device_R,re
mote_device_W,hyper_metro_consistency_group_R,hyper_metro_consistency_group_W,hyper_metro_do
main_R,hyper_metro_domain_W,hyper_metro_pair_R,hyper_metro_pair_W,quorum_server_R,quorum_se
rver_W;resource_performance_tuning:disk_R,disk_W,smart_qos_R,smart_qos_W,smart_migration_R,smar
t_migration_W,enclosure_R,enclosure_W,smart_cache_R,smart_cache_W;smart_virtualization:remote_de
vice_R,remote_device_W,port_R,port_W;performance:storage_pool_R,storage_pool_W,disk_R,disk_W,lun_
R,lun_W,lun_group_R,lun_group_W,host_group_R,host_group_W,host_R,host_W,remote_device_R,remote
_device_W,lun_snapshot_R,lun_snapshot_W,remote_replication_R,remote_replication_W,consistency_gro
up_R,consistency_group_W,smart_qos_R,smart_qos_W,performance_R,performance_W,port_R,port_W,co
ntroller_R,controller_W,nfs_service_R,nfs_service_W,share_R,share_W,file_system_R,file_system_W,nfsv3_
R,nfsv3_W,domain_R,domain_W,fs_snapshot_R,fs_snapshot_W,smart_cache_R,smart_cache_W,cifs_servic
e_R,cifs_service_W;device:disk_R,disk_W,port_R,port_W,controller_R,controller_W,bbu_R,bbu_W,interface
_module_R,interface_module_W,fan_R,fan_W,expansion_module_R,expansion_module_W,enclosure_R,e
nclosure_W,power_supply_R,power_supply_W,storage_engine_R,storage_engine_W,cabinet_R,cabinet_W
;alarm:alarm_R,alarm_W;system:dns_server_R,dns_server_W,system_R,system_W,upgrade_R,upgrade_W,
version_R,version_W,license_R,license_W,logfile_R,logfile_W,configuration_data_R,configuration_data_W
,running_data_R,running_data_W,snmp_R,snmp_W,system_reporter_R,system_reporter_W,smis_R,smis_
W,mirror_domain_R,mirror_domain_W,ssh_R,ssh_W,call_home_R,call_home_W,boot_R,boot_W,task_R,ta
sk_W;security:safe_strategy_R,safe_strategy_W,security_rule_R,security_rule_W,certificate_R,certificate_
W,disk_destroy_data_R,disk_destroy_data_W,kmc_R,kmc_W,ssl_certificate_R,ssl_certificate_W,global_sec
ure_compliance_clock_R,global_secure_compliance_clock_W,antivirus_R,antivirus_W;support:support_m
ajor_R,support_major_W,support_minor_R,support_minor_W,user_mode_R,user_mode_W;protect_group:
```

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```
protect_group_R,protect_group_W;file_storage_service:nfs_service_R,nfs_service_W,share_R,share_W,file
_system_R,file_system_W,domain_R,domain_W,fs_snapshot_R,fs_snapshot_W,dtree_R,dtree_W,quota_R,
quota_W,cifs_service_R,cifs_service_W,kerberos_R,kerberos_W,worm_fingerprint_R,worm_fingerprint_W,
worm_legal_hold_R,worm_legal_hold_W;vstore:vstore_R,vstore_W;container:container_service_R,contai
ner_service_W,container_application_R,container_application_W,container_pod_R,container_pod_W,cont
ainer_node_R,container_node_W"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.3.6.4.5 Interface for Querying Role

Function

This interface is used to query roles.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/role/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Role ID.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string(int)	Role ID.
description	Mandatory	string	Description.
name	Mandatory	string	Role name.
permitList	Mandatory	string	Permission list.
roleOwnerGroup	Mandatory	string(enum)	Owning group. **The value is described as follows:** 1: System group.

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Parameter	Mandatory/ Conditional	Type	Description
roleSource	Mandatory	string(enum)	Role source. **The value is described as follows:** 0: Built-in 1: Custom

Example

- Querying roles.

```
Request: GET /deviceManager/rest/210235843910E6000009/role/202

Response: {
   "data": {
      "id": "202",
      "description": "hello1",
      "name": "user1",
      "permitList": "lun:lun;",
      "roleOwnerGroup": "1",
      "roleSource": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.3.6.5 Others

2.4 License management

2.4.1 license

2.4.1.1 Add

2.4.1.2 Delete

2.4.1.3 Modify

2.4.1.4 Query

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2.4.1.4.1 Interface for Batch Querying License Utilization

Function

This interface is used to batch query the utilization of licenses.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/license/activelicense

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CreatedTime	Mandatory	string	Time when a license file is created (UTC).
FileExist	Mandatory	string	Whether a file exists. **The value is described as follows:** 0: existent 1: nonexistent
LibVer	Mandatory	string	Version of a license file.
LicenseFunction	Mandatory	jsonarray	Function controlled by a license. **The value is described as follows:** FeatureId: license enumeration FuncSwitch: function switch (0: off; 1: on) RunTime: expiration date

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Parameter	Mandatory/ Conditional	Type	Description
LicenseResource	Mandatory	jsonarray	Resource controlled by a license. **The value is described as follows:** FeatureId: license enumeration FeatureName: feature name ResourceNum: number of supported resource items RunTime: expiration date
LicenseSerialNo	Mandatory	string	Serial number of a license.

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Parameter	Mandatory/ Conditional	Type	Description
LicenseUsageInfo	Mandatory	jsonarray	Information about license utilization. **The value is described as follows:** FeatureId: license enumeration OpenStatus: license status 0: not initialized 1: opened 2: closed State: license validity 1: valid 2: expired 3: invalid TotalNum: Total number of licenses. 0x7FFFFFFF indicates there is no limit on the number of resources. UsedNum: number of used licenses usedResourceUnit: unit enumeration. The default value is 72. **Note:**After the license expires, a 60-day trial period is available.
licenseType	Mandatory		This field has no service meaning. **Note:**This field is discarded.

Example

- Query license usage in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/license/activelicense

Response: {
   "data": {
      "CreatedTime": "2016-06-21 11:20:22",
      "FileExist": "0",
      "LibVer": "AdaptiveLMV100R002C05SPC007",
      "LicenseFunction": [
         {
```

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```
            "FeatureId": "28",
            "FuncSwitch": 1,
            "RunTime": "2016-09-30"
        },
        {
            "FeatureId": "25",
            "FuncSwitch": 1,
            "RunTime": "2016-09-30"
        },
        {
            "FeatureId": "16",
            "FuncSwitch": 1,
            "RunTime": "2016-09-30"
        }
    ],
    "LicenseResource": [
        {
            "FeatureId": "104",
            "FeatureName": "Effective Capacity",
            "ResourceNum": "200",
            "ResourceSysMaxNum": "500",
            "RunTime": "2016-09-30"
        }
    ],
    "LicenseSerialNo": "LIC2016062165VG50",
    "LicenseUsageInfo": [
        {
            "FeatureId": "28",
            "OpenStatus": "1",
            "State": "1",
            "TotalNum": "0",
            "UsedNum": "0",
            "usedResourceUnit": 72
        },
        {
            "FeatureId": "25",
            "OpenStatus": "1",
            "State": "1",
            "TotalNum": "0",
            "UsedNum": "0",
            "usedResourceUnit": 72
        },
        {
            "FeatureId": "16",
            "OpenStatus": "1",
            "State": "1",
            "TotalNum": "0",
            "UsedNum": "0",
            "usedResourceUnit": 1
        }
    ],
    "licenseType": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.4.1.4.2 Interface for Batch Querying the Inactive License File

Function

This interface is used to batch query the inactive license file.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/license/inactivelicense

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
FileExist	Mandatory	string	Whether a file exists. **The value is described as follows:** 0: existent 1: nonexistent
LicenseFunction	Mandatory	jsonarray	Function controlled by a license. **The value is described as follows:** FeatureId: license enumeration FuncSwitch: function switch (0: off; 1: on) RunTime: expiration date
LicenseSerialNo	Mandatory	string	Serial number of a license.
CreatedTime	Mandatory	string	Time when a license file is created (UTC).
LibVer	Mandatory	string	Version of a license file.

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Parameter	Mandatory/ Conditional	Type	Description
LicenseResource	Mandatory	jsonarray	Resource controlled by a license. **The value is described as follows:** FeatureId: license enumeration FeatureName: feature name ResourceNum: number of supported resource items RunTime: expiration date
LicenseUsageInfo	Mandatory	jsonarray	Information about license utilization **The value is described as follows:** FeatureId: license enumeration OpenStatus: license status 0: not initialized 1: opened 2: closed State: license validity 1: valid 2: expired 3: invalid TotalNum: total number of licenses. 0x7FFFFFFF indicates there is no limit on the number of resources. UsedNum: number of used licenses usedResourceUnit: unit enumeration. The default value is 72. **Note:**After the license expires, a 60-day trial period is available.

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Parameter	Mandatory/ Conditional	Type	Description
licenseType	Mandatory		This field has no service meaning. **Note:**This field is discarded.

Example

- Batch querying the inactive license file.

```
Request: GET /deviceManager/rest/210235843710E7000007/license/inactivelicense

Response: {
   "data": {
      "CreatedTime": "2022-03-15 10:33:03",
      "FileExist": "0",
      "LibVer": "AdaptiveLMV100R005C10SPC064",
      "LicenseFunction": [
         {
            "FeatureId": "28",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "25",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "5",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "22",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "2",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "24",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "3",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "29",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
         {
            "FeatureId": "63",
            "FuncSwitch": 1,
            "RunTime": "2022-05-23"
         },
```

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```
            {
                "FeatureId": "98",
                "FuncSwitch": 1,
                "RunTime": "2022-05-23"
            },
            {
                "FeatureId": "27",
                "FuncSwitch": 1,
                "RunTime": "2022-05-23"
            },
            {
                "FeatureId": "104",
                "FuncSwitch": 1,
                "RunTime": "2022-05-23"
            },
            {
                "FeatureId": "45",
                "FuncSwitch": 1,
                "RunTime": "2022-05-23"
            }
        ],
        "LicenseResource": [
            {
                "FeatureId": "104",
                "FeatureName": "Effective Capacity",
                "ResourceNum": "200",
                "ResourceSysMaxNum": "500",
                "RunTime": "2022-05-23"
            }
        ],
        "LicenseSerialNo": "LIC20220315QAS850",
        "LicenseUsageInfo": [

        ],
        "licenseType": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.4.1.5 Others

2.4.1.5.1 Interface for Activating a License File

Function

This interface is used to activate a license file.

HighRisk

You are about to activate a license file.

This operation will overwrite the previous license file. If a feature is deleted from the newly activated license, the feature configuration will not be lost, but you cannot perform any management operations, such as adding, deleting, or modifying the feature.

Suggestion: Before performing this operation, ensure that the license file to be activated is correct.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/license

Access Method

PUT

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
LicenseActiveResult	Conditional	enum	Activation result. **The value is described as follows:** 0: successful **Note:**This parameter is returned when the activation is successful.

Example

- Activating a license file.

```
Request: PUT /deviceManager/rest/210235843710E7000007/license

Response: {
    "data": {
        "LicenseActiveResult": 0
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.5 Performance management

2.5.1 audit_strategy

2.5.1.1 Add

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2.5.1.2 Delete

2.5.1.3 Modify

2.5.1.3.1 Interface for Modifying Audit Log Strategy

Function

This interface is used to modify the audit log policy.

HighRisk

You are about to disable the audit log function. This operation will uninstall the audit log file system, which contains important audit logs. The audit logs must be handled properly. Exercise caution when performing this operation. Suggestion: Note the following: 1. Before performing this operation, stop sharing the audit log file system. 2. After performing this operation, clear or migrate data in the audit log file system.
You are about to change the threshold of the audit log automatic deletion function. If the capacity specified by this parameter is greater than the capacity of the audit log file system, audit logs may fail to be recorded and services may be interrupted. Suggestion: Before performing this operation, ensure that the file system will have sufficient capacity.
You are about to configure the audit log strategy as the non-guarantee mode. The non-guarantee mode will give priority to service running. As a result, audit log record omissions may occur, causing security risks. Suggestion: Before performing this operation, ensure that the preceding risks are acceptable.
You are about to configure the audit log strategy as the guarantee mode. The guarantee mode will give priority to the audit function, causing risks of performance deterioration or service interruption. Suggestion: Before performing this operation, ensure that the preceding risks are acceptable.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AUDIT_STRATEGY

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
runEnable	Optional	bool	Whether to enable the audit log function. **The value is described as follows:** The value can be "On" or "Off", where: 0:"Off": disabled. 1:"On": enabled.
singleLogfileSize	Optional	uint32	Size of a single audit log file. **The value is described as follows:** 10 to 100 **Unit:**MB
reserveLogfileNum	Optional	uint32	Number of reserved log files. **The value is described as follows:** 1 to 1200 **Unit:**K
occupiedCapacity	Optional	uint32	Capacity used by the audit log file system. **The value is described as follows:** 5 to 33554432 **Unit:**GB
guaranteeMode	Optional	bool	Whether to enable the audit log guarantee mode. **The value is described as follows:** The value can be "Guarantee" or "Not-guarantee", where: 1:"Not-guarantee": Non-guarantee mode. 2:"Guarantee": Guarantee mode.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fileOps	Optional	bool	Whether to record SACL operations. **The value is described as follows:** The value can be "On" or "Off", where: 1:"Off": Do not record SACL operations. 2:"On": Record SACL operations.
smbLogonLogoff	Optional	bool	Whether to audit SMB login and logout. **The value is described as follows:** The value can be "On" or "Off", where: 1:"Off": Audit SMB login and logout. 2:"On": Do not audit SMB login and logout.
auditPolicyChange	Optional	bool	Whether to record SACL modification operations. **The value is described as follows:** The value can be "On" or "Off", where: 1:"Off": Do not record SACL modification operations. 2:"On": Record SACL modification operations.

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Parameter	Mandatory/Optional/Conditional	Type	Description
alogType	Optional	uint32	Output format of audit logs. **The value is described as follows:** The value can be "0" or "1", where: 1:"0": sets the output format to EVTX. 2:"1": sets the output format to XML. **Default:**0
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. The default value is 0. **Note:**vStore ID.
vstoreName	Conditional	string	vStore name. **Note:**vStore name.

Result

N/A

Example

- Modifying the audit log policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/AUDIT_STRATEGY
{
   "vstoreId": "0",
   "guaranteeMode": 1,
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.5.1.4 Query

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2.5.1.4.1 Interface for Querying Audit Log Strategy

Function

This interface is used to query the audit log policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AUDIT_STRATEGY

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional		vStore ID. **Note:**vStore ID.
vstoreName	Conditional	string	vStore name. **Note:**vStore name.

Result

Parameter	Mandatory/Conditional	Type	Description
runEnable	Mandatory	bool	Whether to enable the audit log function. **The value is described as follows:** The value can be "false" or "true", where: 0:"false": disabled. 1:"true": enabled.
singleLogfileSize	Mandatory	uint32	Size of a single audit log file. **The value is described as follows:** 10 to 100 **Unit:**MB

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Parameter	Mandatory/ Conditional	Type	Description
reserveLogfileNum	Mandatory	uint32	Number of reserved log files. **The value is described as follows:** 1 to 1200 **Unit:**K
auditFileSystemId	Mandatory	uint32	ID of the audit log file system.
auditFileSystemName	Mandatory	string	Name of the audit log file system.
occupiedCapacity	Mandatory	uint32	Capacity used by the audit log file system. **The value is described as follows:** 5 to 33554432 **Unit:**GB
guaranteeMode	Mandatory	bool	Whether to enable the audit log guarantee mode. **The value is described as follows:** The value can be "false" or "true", where: 0:"false": Non-guarantee mode. 1:"true": Guarantee mode.
fileOps	Mandatory	bool	Whether to record SACL operations. **The value is described as follows:** The value can be "false" or "true", where: 0:"false": Do not record SACL operations. 1:"true": Record SACL operations.

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Parameter	Mandatory/ Conditional	Type	Description
smbLogonLogoff	Mandatory	bool	Whether to audit SMB login and logout. **The value is described as follows:** The value can be "false" or "true", where: 0:"false": Do not audit SMB login and logout. 1:"true": Audit SMB login and logout.
auditPolicyChange	Mandatory	bool	Whether to record SACL modification operations. **The value is described as follows:** The value can be "false" or "true", where: 0:"false": Do not record SACL modification operations. 1:"true": Record SACL modification operations.
alogType	Mandatory	uint32	Output format of audit logs. **The value is described as follows:** The value can be "0" or "1", where: 1:"0": sets the output format to EVTX. 2:"1": sets the output format to XML.
vstoreId	Mandatory	uint32	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Querying the audit log policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/AUDIT_STRATEGY?vstoreId=0
```

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```
Response: {
   "data": {
      "auditFileSystemId": "4",
      "auditFileSystemName": "fs_audit",
      "singleLogfileSize": "100",
      "runEnable": "true",
      "reserveLogfileNum": "0",
      "occupiedCapacity": "5",
      "guaranteeMode": "true",
      "smbLogonLogoff": "true",
      "fileOps": "true",
      "auditPolicyChange": "true",
      "vstoreId": "0",
      "alogType": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.1.5 Others

2.5.2 performance

2.5.2.1 Add

2.5.2.2 Delete

2.5.2.3 Modify

2.5.2.4 Query

2.5.2.4.1 Interface for Querying Performance Data of a Managed Object

Function

This interface is used to query the specified performance data of a managed object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_statistic/cur_statistic_data

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_UUID	Mandatory	string	Universally unique identifier (UUID) of a managed object. **The value is described as follows:** The value is a character string in the format of object type:object ID. For example, if the controller's object type number is "207" and the controller ID is "0A", the UUID is "207:0A".
CMO_STATISTIC_DATA_ID_LIST	Mandatory	string	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the ID column in Object Performance Indicators. Multiple performance indicators are separated by commas (,). For example, to query the block bandwidth and IOPS of an object, enter CMO_STATISTIC_DATA_ID_LIST=21,22.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

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Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_DATA_LIST	Mandatory	string	List of performance collection values. **The value is described as follows:** The sequence is the same as that of CMO_STATISTIC_DATA_ID_LIST and is separated by commas (,).
CMO_STATISTIC_TIMESTAMP	Mandatory	string(uint64)	Performance collection time. **Unit:**s
CMO_STATISTIC_UUID	Mandatory	string	Universally unique identifier (UUID) of a managed object. **The value is described as follows:** It is expressed in the format of object type:object ID. For example, if the controller's object type number is "207" and the controller ID is "0A", the UUID is "207:0A".
CMO_STATISTIC_DATA_ID_LIST	Mandatory	string	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the object performance indicator enumeration list in the appendix. Multiple indicators are separated by commas (,).

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Example

- Querying the block bandwidth, total IOPS, and average I/O response time of the controller whose object type number is "207" and ID is "0A".

```
Request: GET /deviceManager/rest/210235843710E7000007/performance_statistic/cur_statistic_data?
CMO_STATISTIC_UUID=207:0A&CMO_STATISTIC_DATA_ID_LIST=21,22,370

Response:
{
   "data": [
      {
         "CMO_STATISTIC_DATA_ID_LIST": "21,22,370",
         "CMO_STATISTIC_DATA_LIST": "0,0,0",
         "CMO_STATISTIC_TIMESTAMP": "1488280219",
         "CMO_STATISTIC_UUID": "207:0A"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.2.4.2 Interface for Querying Performance Data of an Object

Function

This interface is used to query the performance data of a specified managed object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance/statdata

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_UUID	Mandatory	string	Uniquely identifies a managed object. **The value is described as follows:** The value is a character string in the format of object type:object ID. For example, if the controller's object type number is "207" and the controller ID is "0A", the UUID is "207:0A".
CMO_STATISTIC_DATA_ID	Optional	uint64	Performance indicator. **The value is described as follows:** For details, see the ID column in section "Object Performance Indicators." For example, to query the block bandwidth of an object, enter CMO_STATISTIC_DATA_ID=21.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_DATA_ID_LIST	Optional	string	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the ID column in Object Performance Indicators. Multiple performance indicators are separated by commas (,). For example, to query the block bandwidth and IOPS of an object, enter CMO_STATISTIC_DATA_ID_LIST=21,22.

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_STATISTIC_TIMESTAMP	Mandatory	uint64	Time when performance data is collected.
CMO_STATISTIC_DATA_ID_LIST	Conditional	string	Enumeration number of a performance indicator. **Note:**If CMO_STATISTIC_DATA_ID_LIST is selected, this parameter is returned.
CMO_STATISTIC_DATA_LIST	Conditional	string	List of collected performance data. **Note:**If CMO_STATISTIC_DATA_ID_LIST is selected, this parameter is returned.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_DATA	Conditional	uint64	Collected performance data. **Note:**If CMO_STATISTIC_DATA_ID is selected, this parameter is returned.
CMO_STATISTIC_DATA_ID	Conditional	uint64	Performance indicator. **Note:**If CMO_STATISTIC_DATA_ID is selected, this parameter is returned.
CMO_STATISTIC_UUID	Mandatory	string	Uniquely identifies a managed object.

Example

- Querying the performance data of a specified managed object.

```
Request: GET /deviceManager/rest/2102353TXP10L8000009/performance/statdata?
CMO_STATISTIC_UUID=207:0A&CMO_STATISTIC_DATA_ID_LIST=21,22

Response: {
   "data": [
      {
         "CMO_STATISTIC_DATA_ID_LIST": "21,22",
         "CMO_STATISTIC_DATA_LIST": "0,0",
         "CMO_STATISTIC_TIMESTAMP": "1618583905",
         "CMO_STATISTIC_UUID": "207:0A"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.2.4.3 Interface for Querying Performance Dump Settings

Function

This interface is used to query performance dump settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/perf_data_restore

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_RESTORE_ENABLE	Mandatory	string(uint32)	Switch of automatic dump. **The value is described as follows:** 0: off 1: on
CMO_STATISTIC_RESTORE_ADDRESS	Mandatory	string	Dumping server address. **The value is described as follows:** The domain name contains 1 to 63 case-insensitive letters, digits, and hyphens (-). Domain names at various levels are separated by periods (.) and cannot start or end with a hyphen (-). The top-level domain name cannot contain digits only.
CMO_STATISTIC_RESTORE_VISUALPATH	Mandatory	string	Path for storing dump files.
CMO_STATISTIC_RESTORE_ACCOUNT	Mandatory	string	User name.
CMO_STATISTIC_RESTORE_PROTOCOL	Mandatory	string(enum)	Protocol. **The value is described as follows:** 0: FTP 1: SFTP

Example

- Querying performance dump settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/perf_data_restore

Response: {
   "data": {
```

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```
        "CMO_STATISTIC_RESTORE_ACCOUNT": "admin",
        "CMO_STATISTIC_RESTORE_ADDRESS": "10.169.6.20",
        "CMO_STATISTIC_RESTORE_ENABLE": 1,
        "CMO_STATISTIC_RESTORE_PROTOCOL": 1,
        "CMO_STATISTIC_RESTORE_VISUALPATH": "/opt"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.5.2.4.4 Interface for Querying Performance Monitoring Statistics

Function

This interface is used to query performance monitoring statistics.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_statistic_strategy

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_ARCHIVE_SWITCH	Mandatory	string(uint64)	Whether or not to save performance monitoring data on the storage device. **The value is described as follows:** 0: disable 1: enable
CMO_STATISTIC_AUTO_STOP	Mandatory	string(uint64)	Automatic stop switch. **The value is described as follows:** 0: disable 1: enable
CMO_STATISTIC_INTERVAL	Mandatory	string(uint64)	Real-time performance data sampling interval.

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Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_ARCHIVE_TIME	Mandatory	string(uint64)	Historical performance monitoring period.
CMO_STATISTIC_MAX_TIME	Mandatory	string(uint64)	The validity period of the collection policy. **Note:**When the automatic stop function is enabled, the system automatically stops collecting monitoring data after the collection policy expires.

Example

- Querying performance monitoring statistics.

```
Request: GET /deviceManager/rest/210235843910E6000009/performance_statistic_strategy

Response: {
    "data": [
        {
            "CMO_STATISTIC_ARCHIVE_SWITCH": "1",
            "CMO_STATISTIC_ARCHIVE_TIME": "60",
            "CMO_STATISTIC_AUTO_STOP": "0",
            "CMO_STATISTIC_INTERVAL": "5",
            "CMO_STATISTIC_MAX_TIME": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.5.2.4.5 Interface for Querying Performance Monitoring Switch

Function

This interface is used to query the performance monitoring switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_statistic_switch

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_PERFORMANCE_BEGIN_TIME	Conditional	string(uint64)	Performance statistics start time. **Note:**Returns when performance monitoring is enabled.
CMO_PERFORMANCE_SWITCH	Mandatory	string(uint64)	Performance monitoring switch. **The value is described as follows:** 0: disabled 1: enabled **Note:**You can monitor the performance of the storage device only when the performance monitoring status is "Enabled".

Example

- Querying the performance monitoring switch.

```
Request: GET /deviceManager/rest/210235843910E6000009/performance_statistic_switch

Response:
{
   "data": [
      {
         "CMO_PERFORMANCE_BEGIN_TIME": "1478207205",
         "CMO_PERFORMANCE_SWITCH": "1"
      }
   ],
   "error": {
      "code": 0,
```

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```
        "description": "0"
    }
}
```

2.5.2.4.6 (Not Recommended)Interface for Querying Performance Data of a Managed Object

Function

This interface is used to query the specified performance data of a managed object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performace_statistic/cur_statistic_data

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_UUID	Mandatory	string	Universally unique identifier (UUID) of a managed object. **The value is described as follows:** The value is a character string in the format of object type:object ID. For example, if the controller's object type number is "207" and the controller ID is "0A", the UUID is "207:0A".

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_DATA_ID_LIST	Mandatory	string	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the ID column in Object Performance Indicators. Multiple performance indicators are separated by commas (,). For example, to query the block bandwidth and IOPS of an object, enter CMO_STATISTIC_DATA_ID_LIST=21,22.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_STATISTIC_DATA_LIST	Mandatory	string	List of performance collection values. **The value is described as follows:** The sequence is the same as that of CMO_STATISTIC_DATA_ID_LIST and is separated by commas (,).
CMO_STATISTIC_TIMESTAMP	Mandatory	string(uint64)	Performance collection time. **Unit:**s

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Parameter	Mandatory/ Conditional	Type	Description
CMO_STATISTIC_UUID	Mandatory	string	Universally unique identifier (UUID) of a managed object. **The value is described as follows:** It is expressed in the format of object type:object ID. For example, if the controller's object type number is "207" and the controller ID is "0A", the UUID is "207:0A".
CMO_STATISTIC_DATA_ID_LIST	Mandatory	string	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the object performance indicator enumeration list in the appendix. Multiple indicators are separated by commas (,).

Example

- Querying the block bandwidth, total IOPS, and average I/O response time of the controller whose object type number is "207" and ID is "0A".

```
Request: GET /deviceManager/rest/210235843710E7000007/performace_statistic/cur_statistic_data?
CMO_STATISTIC_UUID=207:0A&CMO_STATISTIC_DATA_ID_LIST=21,22,370

Response:
{
   "data": [
      {
         "CMO_STATISTIC_DATA_ID_LIST": "21,22,370",
         "CMO_STATISTIC_DATA_LIST": "0,0,0",
         "CMO_STATISTIC_TIMESTAMP": "1488280219",
         "CMO_STATISTIC_UUID": "207:0A"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.5.2.5 Others

2.5.2.5.1 Interface for Configuring Performance Monitoring Statistics

Function

This interface is used to configure performance monitoring statistics.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_statistic_strategy

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_ARCHIVE_SWITCH	Optional	uint64	Whether or not to save performance monitoring data on the storage device. **The value is described as follows:** 0: disables the function. 1: enables the function.
CMO_STATISTIC_AUTO_STOP	Optional	uint64	Switch for automatic stopping of performance statistics. **The value is described as follows:** 0: disables the function. 1: enables the function.
CMO_STATISTIC_INTERVAL	Optional	uint64	Real-time performance data sampling interval. **The value is described as follows:** 5, 10, 30, and 60 seconds.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_ARCHIVE_TIME	Optional	uint64	Historical performance data sampling interval. **The value is described as follows:** 5, 60, 120, 300, 600, 1800, and 3600 seconds.
CMO_STATISTIC_MAX_TIME	Conditional	uint64	Days after which automatic collection will stop. **The value is described as follows:** 1 to 31 days. **Note:** When the switch for automatic stopping of performance statistics is enabled, this parameter must be delivered. When the number of days after which automatic collection will stop is reached, the system automatically stops collecting monitoring data.

Result

N/A

Usage Guidelines

The performance monitoring parameters can be modified when the performance statistics switch is disabled.

Example

- Configuring performance monitoring statistics.

```
Request: PUT /deviceManager/rest/210235843910E6000009/performance_statistic_strategy

{
   "CMO_STATISTIC_INTERVAL": 10,
   "CMO_STATISTIC_ARCHIVE_SWITCH": 1,
   "CMO_STATISTIC_AUTO_STOP": 0,
```

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```
    "CMO_STATISTIC_ARCHIVE_TIME": 3600
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.5.2.5.2 Interface for Obtaining Performance Model Logs

Function

This interface is used to obtain performance model logs.

URL

https://${ip}:${port}/api/v2/rwp/get_rwp_data

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
start_day		uint32	Start day for obtaining performance model log data. **The value is described as follows:** The value is an unsigned integer ranging from 0 to 1000.
end_day		uint32	End day for obtaining performance model log data. **The value is described as follows:** The value is an unsigned integer ranging from 0 to 1000.

Result

N/A

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Example

- Obtaining performance model logs.

```
Request: GET https://${ip}:${port}/api/v2/rwp/get_rwp_data?start_day=0&end_day=1

Response:
{
   "data": [
    "12121", "454646"
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.2.5.3 Interface for Setting Performance Dump

Function

This interface is used to set performance dump.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/perf_data_restore

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_RESTORE_ADDRESS	Conditional	string	Dump server address. **The value is described as follows:** The value can be an IP address (IPv4 or IPv6). **Length:**1~63 **Note:**This parameter is required when the switch of automatic dump is not 0.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_RESTORE_VISUALPATH	Conditional	string	Path for storing the performance monitoring statistics to be dumped. **Length:**1~255 **Note:**This parameter is required when the switch of automatic dump is not 0.
CMO_STATISTIC_RESTORE_ENABLE	Mandatory	uint32	Switch of automatic dump. **The value is described as follows:** 0: off 1: on
CMO_STATISTIC_RESTORE_ACCOUNT	Conditional	string	User name. **Length:**1~63 **Note:**This parameter is required when the switch of automatic dump is not 0.
CMO_STATISTIC_RESTORE_PASSWD	Conditional	string	Password. **Length:**1~63 **Note:**If the dump server address, dump file save path, user name, or protocol is different from the original configuration, the password is mandatory.
CMO_STATISTIC_RESTORE_PROTOCOL	Conditional	enum	Protocol. **The value is described as follows:** 0: FTP 1: SFTP **Note:**This parameter is required when the switch of automatic dump is not 0.

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Result

N/A

Example

- Setting performance dump.

```
Request: PUT /deviceManager/rest/210235843910E6000009/perf_data_restore

{
   "CMO_STATISTIC_RESTORE_ACCOUNT": "admin",
   "CMO_STATISTIC_RESTORE_ADDRESS": "10.169.6.20",
   "CMO_STATISTIC_RESTORE_ENABLE": 1,
   "CMO_STATISTIC_RESTORE_PASSWD": "123456",
   "CMO_STATISTIC_RESTORE_PROTOCOL": 1,
   "CMO_STATISTIC_RESTORE_VISUALPATH": "/opt"
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.2.5.4 Interface for Setting Performance Monitoring Switch

Function

This interface is used to set the performance monitoring switch.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_statistic_switch

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_PERFORMANCE_SWITCH	Mandatory	uint64	Performance monitoring switch. **The value is described as follows:** 0: disable 1: enable **Note:**You can monitor the performance of the storage device only when the performance monitoring status is "Enabled".

Result

N/A

Example

- Setting the performance monitoring switch.

```
Request: PUT /deviceManager/rest/210235843910E6000009/performance_statistic_switch

{
   "CMO_PERFORMANCE_SWITCH": "1"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.2.5.5 Interface for Testing Performance Dump Settings

Function

This interface is used to test performance dump settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/test_perf_data_restore

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_STATISTIC_RESTORE_ADDRESS	Mandatory	string	Dump server address. **The value is described as follows:** The value can be an IP address (IPv4 or IPv6). **Length:**1~63
CMO_STATISTIC_RESTORE_VISUALPATH	Mandatory	string	Path for storing the performance monitoring statistics to be dumped. **Length:**1~255
CMO_STATISTIC_RESTORE_ENABLE	Mandatory	uint32	Switch of automatic dump. **The value is described as follows:** 0: disabled 1: enabled
CMO_STATISTIC_RESTORE_ACCOUNT	Mandatory	string	User name. **Length:**1~63
CMO_STATISTIC_RESTORE_PROTOCOL	Mandatory	enum	Protocol. **The value is described as follows:** 0: FTP 1: SFTP
CMO_STATISTIC_RESTORE_PASSWD	Conditional	string	Password. **Note:**If the dump server address, dump file save path, user name, or protocol is different from the original configuration, the password is mandatory.

Result

N/A

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Example

- Testing performance dump settings.

```
Request: POST /deviceManager/rest/210235843910E6000009/test_perf_data_restore

{
   "CMO_STATISTIC_RESTORE_ACCOUNT": "admin",
   "CMO_STATISTIC_RESTORE_ADDRESS": "10.169.6.20",
   "CMO_STATISTIC_RESTORE_ENABLE": 1,
   "CMO_STATISTIC_RESTORE_PASSWD":123456,
   "CMO_STATISTIC_RESTORE_PROTOCOL": 1,
   "CMO_STATISTIC_RESTORE_VISUALPATH": "/opt"
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.5.3 power_supply

2.5.3.1 Add

2.5.3.2 Delete

2.5.3.3 Modify

2.5.3.4 Query

2.5.3.4.1 Interface for Querying Power Consumption

Function

This interface is used to query power consumption.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get/powerconsumption?START_TIME=${START_TIME}&TIME_TYPE=${TIME_TYPE}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TIME_TYPE	Mandatory	uint32	Statistics type. **The value is described as follows:** 0: year 1: month 2: day
START_TIME	Mandatory	uint64	Start time. **The value is described as follows:** The number of milliseconds in a date since midnight of January 1, 1970, according to UTC time.

Result

Parameter	Mandatory/Conditional	Type	Description
POWER_CONSUMPTION_VALUE	Mandatory	string(uint32)	Power consumption.
TIME_STAMP	Mandatory	string(uint64)	UTC timestamp.

Example

- Querying power consumption.

```
Request: GET /deviceManager/rest/210235843710E7000007/get/powerconsumption?
START_TIME=1451692800&TIME_TYPE=2

Response: {
   "data": [
      {
         POWER_CONSUMPTION_VALUE: "0",
         TIME_STAMP: "1451606400"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   },
}
```

2.5.3.5 Others

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2.5.4 nas

2.5.4.1 Add

2.5.4.2 Delete

2.5.4.3 Modify

2.5.4.4 Query

2.5.4.5 Others

2.5.4.5.1 Interface for Activating the NAS Service

Function

Activate the NAS service.

HighRisk

You are about to activate the NAS service. This operation will cause all controllers to be upgraded and restarted in batches, and the read/write performance may deteriorate.

Suggestion: Before performing this operation, ensure that the preceding risks are acceptable.

URL

https://${ip}:${port}/api/v2/task/nasService/activate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
password	Mandatory	string	User password.

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Result

Parameter	Mandatory/ Conditional	Type	Description
taskId	Mandatory	string	Task ID.
displayName	Mandatory	string	Task name displayed to users.
name	Mandatory	string	Task name.
target	Mandatory	string	Operation object of a task.

Example

- Activate the NAS service status.

```
Request: POST /api/v2/task/nasService/activate
{
   "password": "123456"
}

Response: {
   "result": {
      "code": 0,
      "description": "",
      "suggestion": ""
   },
   "data": {
      "taskId": "10",
      "target": "--",
      "name": "activateNasService",
      "displayName": "Activate NAS Service"
   }
}
```

2.6 System information management

2.6.1 enclosure

2.6.1.1 Add

2.6.1.2 Delete

2.6.1.3 Modify

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2.6.1.3.1 Interface for Modifying Enclosure Information

Function

This interface is used to modify enclosure information.

HighRisk

You are about to modify the ID of a disk enclosure. This operation will change the locations of all components in the disk enclosure. Suggestion: Before performing this operation, ensure that the operation is necessary.
You are about to change the location of an enclosure in the cabinet. This operation will affect the enclosure location in the cabinet displayed on DeviceManager. Suggestion: Before performing this operation, ensure that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ENCLOSURE/{id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID.
NAME	Optional	string	Name. **Range:** (DAE[\dABCDEF][\dABCDEF][\dABCDEF])
LOCATION	Optional	string	Location. **Range:**((SMB[\d]|DKB[\d]_[\d])\.[0-9]+U)

Result

N/A

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Example

- Change the location of disk enclosure "64" to "SMB0.40U" and name it "DAE888".

```
Request: PUT/deviceManager/rest/210235843910E6000009/ENCLOSURE/64
{
   "NAME": "DAE888",
   "LOCATION": "SMB0.40U"
}Response: {
   "data": {
      "TYPE": 206
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.1.4 Query

2.6.1.4.1 Interface for Batch Querying Enclosure Information

Function

This interface is used to batch query basic information about enclosures.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/enclosure

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 206: enclosure
ID	Mandatory	string	Enclosure ID.
NAME	Mandatory	string	Enclosure name.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 205: cabinet
PARENTID	Mandatory	string	Cabinet ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 5: Sleep in high temperature 27: Online 28: Offline

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 39: 4 U 75-slot 3.5-inch 12 Gbit/s SAS disk enclosure 67: 2 U 25-slot 2.5-inch SAS disk enclosure 69: 4 U 24-slot 3.5-inch SAS disk enclosure 112: 4 U 4-controller controller enclosure 113: 2 U 2-controller 25-slot 2.5-inch SAS controller enclosure 114: 2 U 2-controller 12-slot 3.5-inch SAS controller enclosure 115: 2 U 2-controller 36-slot NVMe controller enclosure 116: 2 U 2-controller 25-slot 2.5-inch SAS controller enclosure 117: 2 U 2-controller 12-slot 3.5-inch SAS controller enclosure 118: 2 U 25-slot 2.5-inch smart SAS disk enclosure 119: 2 U 12-slot 3.5-inch smart SAS disk enclosure 120: 2 U 36-slot smart NVMe disk enclosure

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logic type. **The value is described as follows:** 0: expansion enclosure (disk enclosure) 1: controller enclosure 2: data switch 3: management switch 4: management server
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C
SERIALNUM	Mandatory	string	SN.
MACADDRESS	Mandatory	string	MAC address.
HEIGHT	Mandatory	string(uint32)	Enclosure height.
EXPANDERDEPTH	Mandatory	string(uint32)	Cascading level (This parameter is available only for disk enclosures.).
EXPANDERPORT	Mandatory	string	Back-end disk port (This parameter is available only for disk enclosures and specifies the SAS domain or Fibre Channel loop where the disk resides.).
SWITCHSTATUS	Mandatory	string(enum)	Status. **The value is described as follows:** 1: on 2: off
ELABEL	Mandatory	string	Electronic label.
visibleAreaId	Mandatory	uint32	Controller enclosure. **The value is described as follows:** 0..4294967295

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Parameter	Mandatory/ Conditional	Type	Description
idType	Mandatory	enum	Type of the user enclosure ID. **The value is described as follows:** 1:User-defined ID;2:Temporary ID allocated by the system;3:Official ID allocated by the system.
isCfgLocation	Mandatory	bool	Whether the user configured the location attribute. **The value is described as follows:** 0:No;1:Yes
sn	Mandatory	string	Serial number.

Example

- Batch querying enclosure information.

```
Request: GET /deviceManager/rest/210235843910E6000009/enclosure

Response: {
   "data": [
      {
         "ELABEL": "[Board Properties]\nBoardType=STLZA9SPE
\nBarCode=210235843910E6000009\nItem=02358439\nDescription=PANGEA,STLZA9SPE,PANGEA
Controller Enclosure&#40;2U,Dual
Controller,AC,6*8GB,12*3.5\",SPE33C0212&#41;,V2R1C00\nManufactured=2014-06-18\nVendorName=
Huawei\nIssueNumber=00\nCLEICode=\nBOM=\n",
         "EXPANDERDEPTH": "0",
         "EXPANDERPORT": "2039808",
         "HEALTHSTATUS": "1",
         "HEIGHT": "2",
         "ID": "0",
         "LOCATION": "0.1",
         "LOGICTYPE": "1",
         "MACADDRESS": "30:d1:7e:b4:f7:61",
         "MODEL": "23",
         "NAME": "CTE0",
         "PARENTID": "0",
         "PARENTTYPE": 205,
         "RUNNINGSTATUS": "27",
         "SERIALNUM": "210235843910E6000009",
         "SWITCHSTATUS": "2",
         "TEMPERATURE": "30",
         "TYPE": 206,
         "visibleAreaId": "0",
         "idType": 3,
         "isCfgLocation": 0,
         "sn": "210235843910E6000009"
      },
```

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```
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.1.4.2 Interface for Querying Enclosure Information

Function

This interface is used to query enclosure information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/enclosure/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Enclosure ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 206: enclosure
ID	Mandatory	string	Enclosure ID.
NAME	Mandatory	string	Enclosure name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 205: cabinet
PARENTID	Mandatory	string	Cabinet ID.
LOCATION	Mandatory	string	Location.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty
RUNNINGSTATUS	Mandatory	string(enum)	Operating status. **The value is described as follows:** 0: unknown 1: normal 2: running 5: sleep in high temperature 27: online 28: offline

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 67: 2 U 25-slot 2.5-inch SAS disk enclosure 69: 4 U 24-slot 3.5-inch SAS disk enclosure 112: 4 U 4-controller controller enclosure 113: 2 U 2-controller 25-slot 2.5-inch SAS controller enclosure 114: 2 U 2-controller 12-slot 3.5-inch SAS controller enclosure 115: 2 U 2-controller 36-slot NVMe controller enclosure 116: 2 U 2-controller 25-slot 2.5-inch SAS controller enclosure 117: 2 U 2-controller 12-slot 3.5-inch SAS controller enclosure 118: 2 U 25-slot 2.5-inch smart SAS disk enclosure 119: 2 U 12-slot 3.5-inch smart SAS disk enclosure 120: 2 U 36-slot smart NVMe disk enclosure 130: 2 U 2-controller 25-slot 2.5-inch SAS controller enclosure 131: 2 U 2-controller 12-slot 3.5-inch SAS controller enclosure 132: 4 U 2-controller 10-slot 3.5-inch controller enclosure

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logic type. **The value is described as follows:** 0: expansion controller (disk enclosure) 1: controller enclosure 2: data switch 3: management switch 4: management server
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C
SERIALNUM	Mandatory	string	SN.
MACADDRESS	Mandatory	string	MAC address.
HEIGHT	Mandatory	string(uint32)	Enclosure height.
EXPANDERDEPTH	Mandatory	string(uint32)	Cascading level (This parameter is available only for disk enclosures.).
EXPANDERPORT	Mandatory	string	Back-end disk port (This parameter is available only for disk enclosures and specifies the SAS domain or Fibre Channel loop where the disk resides.).
SWITCHSTATUS	Mandatory	string(enum)	Switch status. **The value is described as follows:** 1: on 2: off
ELABEL	Mandatory	string	Electronic label.
visibleAreaId	Mandatory	uint32	Controller enclosure. **The value is described as follows:** 0..4294967295

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Parameter	Mandatory/ Conditional	Type	Description
idType	Mandatory	enum	Type of the user enclosure ID. **The value is described as follows:** 1:User-defined ID;2:Temporary ID allocated by the system;3:Official ID allocated by the system.
isCfgLocation	Mandatory	bool	Whether the user configured the location attribute. **The value is described as follows:** 0:No;1:Yes
sn	Mandatory	string	Serial number.

Example

- Querying basic information about the enclosure whose ID is 0.

```
Request: GET /deviceManager/rest/210235843910E6000009/enclosure/0

Response: {
   "data": {
      "ELABEL": "[Board Properties]\nBoardType=STLZA9SPE
\nBarCode=210235843910E6000009\nItem=02358439\nDescription=PANGEA,STLZA9SPE,PANGEA
Controller Enclosure&#40;2U,Dual
Controller,AC,6*8GB,12*3.5\",SPE33C0212&#41;,V2R1C00\nManufactured=2014-06-18\nVendorName=
Huawei\nIssueNumber=00\nCLEICode=\nBOM=\n",
      "EXPANDERDEPTH": "0",
      "EXPANDERPORT": "2039808",
      "HEALTHSTATUS": "1",
      "HEIGHT": "2",
      "ID": "0",
      "LOCATION": "0.1",
      "LOGICTYPE": "1",
      "MACADDRESS": "30:d1:7e:b4:f7:61",
      "MODEL": "23",
      "NAME": "CTE0",
      "PARENTID": "0",
      "PARENTTYPE": 205,
      "RUNNINGSTATUS": "27",
      "SERIALNUM": "210235843910E6000009",
      "SWITCHSTATUS": "2",
      "TEMPERATURE": "31",
      "TYPE": 206,
      "visibleAreaId": "0",
      "idType": 3,
      "isCfgLocation": 0,
      "sn": "210235843910E6000009"
   },
   "error": {
      "code": 0,
```

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```
    "description": "0"
  }
}
```

2.6.1.4.3 Interface for Querying the Number of Enclosures

Function

This interface is used to query the number of enclosures.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ENCLOSURE/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of enclosures.

Example

- Querying the number of enclosures whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/ENCLOSURE/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "1"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

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2.6.1.5 Others

2.6.1.5.1 Interface for Setting the Status of Enclosure Location

Function

This interface is used to set the status of enclosure location.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/enclosure/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID.
SWITCHSTATUS	Optional	enum	Status of the location indicator. **The value is described as follows:** 1: on 2: off

Result

N/A

Example

- Locate the enclosure whose ID is "0".

```
Request: PUT /deviceManager/rest/210235843910E6000009/enclosure/0
{
 "SWITCHSTATUS": 1
}

Response:
{
 "data": {},
 "error": {
  "code": 0,
  "description": "0"
 }
}
```

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2.6.2 controller

2.6.2.1 Add

2.6.2.2 Delete

2.6.2.3 Modify

2.6.2.4 Query

2.6.2.4.1 Interface for Batch Querying Controller Information

Function

This interface is used to batch query basic information about controllers.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/controller

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type of the managed object. **The value is described as follows:** 207: controller
ID	Mandatory	string	Controller ID.
NAME	Mandatory	string	Controller name.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 9: Inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 27: Online 28: Offline
DESCRIPTION	Mandatory	string	Description.
SOFTVER	Mandatory	string	Firmware version.
ISMASTER	Mandatory	string(bool)	Primary/secondary status. **The value is described as follows:** true: primary false: secondary **Note:**This field has been discarded.
ELABEL	Mandatory	string	Electronic label.
PCBVER	Mandatory	string	PCB version.
SESVER	Mandatory	string	SES version.
BMCVER	Mandatory	string	BMC version.
LOGICVER	Mandatory	string	Logic version.

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Parameter	Mandatory/ Conditional	Type	Description
BIOSVER	Mandatory	string	BIOS version.
MEMORYSIZE	Mandatory	string(uint32)	Cache size.
CPUINFO	Mandatory	string	CPU information.
ROLE	Mandatory	string(enum)	Role. **The value is described as follows:** 0: ordinary member 1: cluster primary node 2: cluster secondary node
CPUUSAGE	Mandatory	string(uint32)	CPU utilization.
MEMORYUSAGE	Mandatory	string(uint32)	Memory utilization.
VOLTAGE	Mandatory	string(uint32)	Voltage.
LIGHT_STATUS	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 1: off 2: on
DIRTYDATARATE	Mandatory	string(uint32)	Dirty page usage.
MULTMODE	Mandatory	string(bool)	Multi-working mode supported or not. **The value is described as follows:** true: supported false: not supported
RUNMODE	Mandatory	string(enum)	Operating mode of the interface module. **The value is described as follows:** 1: Fibre Channel 2: Ethernet (support for iSCSI and FCoE protocols) **Note:**Other values are invalid.
RUNMODELIST	Mandatory	array	List of supported working modes.

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Parameter	Mandatory/ Conditional	Type	Description
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C
MODEL	Mandatory	string(uint32)	Controller type. **The value is described as follows:** 4127: V6R1C00 2U2C mid-range PALM control board 4128: V6R1C00 2U2C mid-range_SAS control board 4129: V6R1C00 2U2C SAS entry-level control board (Hi1620S) 4132: V6R1C00 4U4C mission-critical control board 4135: V6R1C00 2U2C mid-range PALM1711 control board 4136: V6R1C00 2U2C mid-range SAS1711 control board 4137: V6R1C00 2U2C SAS 1711 entry-level control board (Hi1620S) 4140: V6R1C00 4U4C mission-critical 1711 control board 4141: V6R1C00 2U2C mid-range SAS 1711 control board (100GE extension board) 4142: V6R1C00 2U2C mid-range SAS control board (100GE extension board) 4144: V6R3C00 2U2C low-end NVMe control board

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Parameter	Mandatory/ Conditional	Type	Description
startingPointDate	Mandatory	string	Service start date **The value is described as follows:** The format of the start time (UTC) of the e-insurance service is as follows: YYYY-MM-DD YYYY: The start year format is supported in 1970 and later. MM: start month. DD: start date.
session	Mandatory	string	Service duration. **The value is described as follows:** The unit of the service time of the controller e-insurance policy is month. The value ranges from 0 to 600. **Unit:**Month
sn	Mandatory	string	Serial number.

Example

- Batch querying controllers.

```
Request: GET /deviceManager/rest/210235843910E6000009/controller

Response: {
   "data": [
      {
         "BIOSVER": "20.03.60T72",
         "BMCVER": "64.11.01T45",
         "CPUINFO": "Kunpeng920 24 Cores 2.6GHz",
         "CPUUSAGE": "14",
         "DESCRIPTION": "Kunpeng920 24 Cores 2.6GHz",
         "DIRTYDATARATE": "0",
         "ELABEL": "[Board Properties]
\nBoardType=STL6SPCK29\nBarCode=2103050CCJ10LA000013\nItem=03050CCJ
\nDescription=Finished Board Unit,PANGEA,STL6SPCK29,NVME Service Processing Controller
Unit&#40;,3*32G Cache,4*10GE,TPM&#40;Outside
China&#41;&#41;\nManufactured=2020-11-02\nVendorName=Huawei\r
\nIssueNumber=00\nCLEICode=\nBOM=\nModel=\n",
         "HEALTHSTATUS": "1",
         "ID": "0A",
         "ISMASTER": "true",
         "LIGHT_STATUS": "2",
         "LOCATION": "CTE0.A",
         "LOGICVER": "00.01.100T11",
```

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```
            "MEMORYSIZE": "98304",
            "MEMORYUSAGE": "89",
            "MODEL": "4144",
            "MULTMODE": "false",
            "NAME": "A",
            "PARENTID": "0",
            "PARENTTYPE": 206,
            "PCBVER": "VER.A",
            "ROLE": "1",
            "RUNMODE": "9",
            "RUNMODELIST": "--",
            "RUNNINGSTATUS": "27",
            "SESVER": "--",
            "SOFTVER": "7.60.05.051",
            "TEMPERATURE": "-1",
            "TYPE": 207,
            "VOLTAGE": "120",
            "session": "160",
            "startingPointDate": "2020-02-02",
            "sn": "2103050CCJ10LA000013"
        },
        {
            "BIOSVER": "20.03.60T72",
            "BMCVER": "64.11.01T45",
            "CPUINFO": "Kunpeng920 24 Cores 2.6GHz",
            "CPUUSAGE": "8",
            "DESCRIPTION": "Kunpeng920 24 Cores 2.6GHz",
            "DIRTYDATARATE": "0",
            "ELABEL": "[Board Properties]
\nBoardType=STL6SPCK29\nBarCode=2103050CCJ10LA000014\nItem=03050CCJ
\nDescription=Finished Board Unit,PANGEA,STL6SPCK29,NVME Service Processing Controller
Unit&#40;,3*32G Cache,4*10GE,TPM&#40;Outside
China&#41;&#41;\nManufactured=2020-11-02\nVendorName=Huawei\r
\nIssueNumber=00\nCLEICode=\nBOM=\nModel=\n",
            "HEALTHSTATUS": "1",
            "ID": "0B",
            "ISMASTER": "false",
            "LIGHT_STATUS": "2",
            "LOCATION": "CTE0.B",
            "LOGICVER": "00.01.100T11",
            "MEMORYSIZE": "98304",
            "MEMORYUSAGE": "96",
            "MODEL": "4144",
            "MULTMODE": "false",
            "NAME": "B",
            "PARENTID": "0",
            "PARENTTYPE": 206,
            "PCBVER": "VER.A",
            "ROLE": "2",
            "RUNMODE": "9",
            "RUNMODELIST": "--",
            "RUNNINGSTATUS": "27",
            "SESVER": "--",
            "SOFTVER": "7.60.05.051",
            "TEMPERATURE": "-1",
            "TYPE": 207,
            "VOLTAGE": "160",
            "session": "160",
            "startingPointDate": "2020-02-02",
            "sn": "027HDS10L4003379"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.2.4.2 Interface for Batch Querying NFSv3 Controller Information

Function

Batch query the controller information of a device.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ControllerNFSV3

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
type	Mandatory	enum	Indicates the type of a managed object.
id	Conditional	string	Controller ID. **Note:**Controller ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Indicates the type of a managed object. **The value is described as follows:** 1003: NFSv3 controller.
id	Mandatory	string	Controller ID.
name	Mandatory	string	Name of a controller.
parentType	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller.
parentID	Mandatory	string	Parent object ID.

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Example

- Query controller information in batches.

```
Request: GET /deviceManager/rest/ST000000000000000009/ControllerNFSV3

Response: {
   "data": [
      {
         "ID": "0A",
         "NAME": "0A",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "TYPE": 1003
      },
      {
         "ID": "0B",
         "NAME": "0B",
         "PARENTID": "0B",
         "PARENTTYPE": 207,
         "TYPE": 1003
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.2.4.3 Interface for Batch Querying NFSv4.x Controller Information

Function

Batch query the controller information of a device.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ControllerNFSV41

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
type	Mandatory	enum	Indicates the type of a managed object.
id	Conditional	string	Controller ID. **Note:**Controller ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Indicates the type of a managed object. **The value is described as follows:** 1003: NFSv4.x controller.
id	Mandatory	string	Controller ID.
name	Mandatory	string	Name of a controller.
parentType	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller.
parentID	Mandatory	string	Parent object ID.

Example

- Query controller information in batches.

```
Request: GET /deviceManager/rest/ST000000000000000009/ControllerNFSV41

Response: {
   "data": [
      {
         "ID": "0A",
         "NAME": "0A",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "TYPE": 1003
      },
      {
         "ID": "0B",
         "NAME": "0B",
         "PARENTID": "0B",
         "PARENTTYPE": 207,
         "TYPE": 1003
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.2.4.4 Interface for Batch Querying SMBv2 Controller Information

Function

This interface is used to batch query basic information about controllers.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ControllerSMBV2

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Type of the managed object. **The value is described as follows:** 1003: SMBv2 controller.
id	Mandatory	string	Controller ID.
name	Mandatory	string	Controller name.
parentType	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller.
parentID	Mandatory	string	ID of the parent object.

Example

- Batch querying controllers.

```
Request: GET/deviceManager/rest/ST000000000000000009/ControllerSMBV2
Response: {
   "data": [
      {
         "ID": "0A",
         "NAME": "0A",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "TYPE": 1003
      },
      {
         "ID": "0B",
         "NAME": "0B",
         "PARENTID": "0B",
         "PARENTTYPE": 207,
         "TYPE": 1003
```

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```
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.2.4.5 Interface for Querying Container Resource Information

Function

This interface is used to query the number of CPU cores and memory size used by the container service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DEVICE_GLOBAL_CONF/get_container_resource_info

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ctrlNodeId	Optional	string	Controller node. **The value is described as follows:** XY: X ranges from 0 to 7, and Y ranges from A to D. **Length:**2

Result

Parameter	Mandatory/Conditional	Type	Description
containerCpu	Mandatory	uint64	Querying the number of CPU cores of the container service.
containerMemory	Mandatory	uint64	Querying the memory of the container service. **Note:**Unit: byte.

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Parameter	Mandatory/ Conditional	Type	Description
containerMaxPodNum	Mandatory	uint32	Maximum number of pods supported by a container node. **The value is described as follows:** 0..42949697295

Example

- Querying the number of CPU cores and memory size used by the container service.

```
Request: PUT /deviceManager/rest/2102353JMM10KA000024/DEVICE_GLOBAL_CONF/
get_container_resource_info
{
    "ctrlNodeId":"0A"
}

Response: {
    "data": {
        "containerCpu": "8",
        "containerMemory": "17179869184",
        "containerMaxPodNum": "7"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.2.4.6 Interface for Querying Controller Information

Function

This interface is used to query basic information about a controller.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/controller/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
ID	Mandatory	string	Controller ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 207: controller
ID	Mandatory	string	Controller ID.
NAME	Mandatory	string	Name of a controller.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 27: online 28: offline
DESCRIPTION	Mandatory	string	Description.
SOFTVER	Mandatory	string	Firmware version.

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Parameter	Mandatory/ Conditional	Type	Description
ISMASTER	Mandatory	string(bool)	Primary/secondary status. **The value is described as follows:** true: primary false: secondary **Note:**This field has been discarded.
ELABEL	Mandatory	string	Electronic label.
PCBVER	Mandatory	string	PCB version.
SESVER	Mandatory	string	SES version.
BMCVER	Mandatory	string	BMC version.
LOGICVER	Mandatory	string	Logic version.
BIOSVER	Mandatory	string	BIOS version.
MEMORYSIZE	Mandatory	string(uint32)	Cache size.
CPUINFO	Mandatory	string	CPU information.
ROLE	Mandatory	string(enum)	Role. **The value is described as follows:** 0: ordinary member 1: cluster primary node 2: cluster secondary node
CPUUSAGE	Mandatory	string(uint32)	CPU utilization.
MEMORYUSAGE	Mandatory	string(uint32)	Memory utilization.
VOLTAGE	Mandatory	string(uint32)	Voltage.
LIGHT_STATUS	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 1: on 2: off
DIRTYDATARATE	Mandatory	string(uint32)	Dirty page usage.

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Parameter	Mandatory/ Conditional	Type	Description
MULTMODE	Mandatory	string(bool)	Multi-working mode supported or not. **The value is described as follows:** true: supported false: not supported
RUNMODE	Mandatory	string(enum)	Operating mode of the interface module. **The value is described as follows:** 1: Fibre Channel 2: Ethernet (support for iSCSI and FCoE protocols) **Note:**Other values are invalid.
RUNMODELIST	Mandatory	array	List of supported working modes.
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(uint32)	Controller type. **The value is described as follows:** 4127: V6R1C00 2U2C mid-range PALM control board 4128: V6R1C00 2U2C mid-range_SAS control board 4129: V6R1C00 2U2C SAS entry-level control board (Hi1620S) 4132: V6R1C00 4U4C mission-critical control board 4135: V6R1C00 2U2C mid-range PALM1711 control board 4136: V6R1C00 2U2C mid-range SAS1711 control board 4137: V6R1C00 2U2C SAS 1711 entry-level control board (Hi1620S) 4140: V6R1C00 4U4C mission-critical 1711 control board 4141: V6R1C00 2U2C mid-range SAS 1711 control board (100GE extension board) 4142: V6R1C00 2U2C mid-range SAS control board (100GE extension board) 4144: V6R3C00 2U2C entry-level NVMe control board

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Parameter	Mandatory/ Conditional	Type	Description
startingPointDate	Mandatory	string	Service start date **The value is described as follows:** The format of the start time (UTC) of the e-insurance service is as follows: YYYY-MM-DD YYYY: The start year format is supported in 1970 and later. MM: start month. DD: start date.
session	Mandatory	string	Service duration. **The value is described as follows:** The unit of the service time of the controller e-insurance policy is month. The value ranges from 0 to 600. **Unit:**Month
sn	Mandatory	string	Serial number.

Example

- Querying basic information about a controller.

```
Request: GET /deviceManager/rest/210235843910E6000009/controller/0A

Response: {
   "data": {
      "BIOSVER": "10.01.07T02",
      "BMCVER": "--",
      "CPUINFO": "Intel 6core 2.1GHz *1",
      "CPUUSAGE": "52",
      "DESCRIPTION": "Intel 6core 2.1GHz *1",
      "DIRTYDATARATE": "0",
      "ELABEL": "[Board Properties]
       BoardType=STL2CONT01
       BarCode=210305573810E6000026
       Item=03055738
       Description=Finished Board Unit,PANGEA,STL2CONT01,SAS        Service Processing Controller
Unit&#40;1*Intel E5 2603 V2,3*        8G Cache&#41;,V2R1C00
       Manufactured=2014-06-18
       VendorName=Huawei
       IssueNumber=00
       CLEICode=
      BOM=
      ",
      "HEALTHSTATUS": "2",
```

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```
        "ID": "0A",
        "ISMASTER": "false",
        "LIGHT_STATUS": "0",
        "LOCATION": "CTE0.A",
        "LOGICVER": "130T08",
        "MEMORYSIZE": "24576",
        "MEMORYUSAGE": "74",
        "MODEL": "4360",
        "MULTMODE": "false",
        "NAME": "A",
        "PARENTID": "0",
        "PARENTTYPE": 206,
        "PCBVER": "VER.A",
        "ROLE": "1",
        "RUNMODE": "1",
        "RUNMODELIST": "--",
        "RUNNINGSTATUS": "27",
        "SESVER": "20.70T33",
        "SOFTVER": "3.20.05.100",
        "TEMPERATURE": "-1",
        "TYPE": 207,
        "VOLTAGE": "120",
        "session": "160",
        "startingPointDate": "2520-02-29",
        "sn": "210305573810E6000026"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.2.4.7 Interface for Querying SMBv2 Controller Information

Function

This interface is used to query basic information about a controller.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ControllerSMBV2/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	Controller ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 1003: SMBv2 controller.
id	Mandatory	string	Controller ID.
name	Mandatory	string	Controller name.
parentType	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller.
parentID	Mandatory	string	ID of the parent object.

Example

- Querying basic information about a controller.

```
Request: GET/deviceManager/rest/ST000000000000000009/ControllerSMBV2/0A
Response: {
   "data": {
      "ID": "0A",
      "NAME": "0A",
      "PARENTID": "0A",
      "PARENTTYPE": 207,
      "TYPE": 1003
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.2.4.8 Interface for Querying the Number of Controllers

Function

This interface is used to query the number of controllers.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONTROLLER/count

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	uint32	Number of controllers.

Example

- Querying the number of controllers.

```
Request: GET /deviceManager/rest/210425612544525214 32/CONTROLLER/count

Response:
{
  "data": {
    "COUNT": "2"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.2.4.9 Interface for Querying the Number of Controllers and the List of Controller Nodes

Function

Query the number of controllers and the list of controller nodes.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DEVICE_GLOBAL_CONF/get_ctrltotal_and_ctrlnodeidlist

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CTRLTOTAL	Mandatory	uint32	Number of controllers.

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Parameter	Mandatory/ Conditional	Type	Description
CTRLNODEIDLIST	Mandatory	string	List of controller nodes.

Example

- Query the number of controllers and the list of controller nodes.

```
Request: GET /deviceManager/rest/2102353JMM10KA000024/DEVICE_GLOBAL_CONF/
get_ctrltotal_and_ctrlnodeidlist

Response: {
    "data": {
        "CTRLNODEIDLIST": "[0:0,1]",
        "CTRLTOTAL": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.2.5 Others

2.6.2.5.1 Interface for Checking Container Pod Redundancy

Function

Check whether the pod is redundant.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NET_GLOBAL/check_pod_redundance

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
checkRedundancyType	Mandatory	uint32	Redundancy type check. **The value is described as follows:** 0: port redundancy check 1: card redundancy check 2: controller node redundancy check
redundancyPortName	Conditional	string	Port name for redundancy check. **The value is described as follows:** Port name. **Length:**32
redundancyCardId	Conditional	string	ID of the card for redundancy check. **The value is described as follows:** Card ID. **Length:**32
redundancyNodeId	Conditional	string	Node for redundancy check. **The value is described as follows:** XY, where X ranges from 0 to 7 and Y ranges from A to D. **Length:**2 **Note:**XY, where X ranges from 0 to 7 and Y ranges from A to D.

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Result

Parameter	Mandatory/ Conditional	Type	Description
redundancyCheckResult	Mandatory	uint32	Redundancy check result. **The value is described as follows:** 0: not redundant 1: redundant
noRedundantpodList	Conditional	string	Information of the non-redundant pod. **The value is described as follows:** [podName,podNamespace] **Note:**Returned when the pod is checked to be not redundant.

Example

- Check whether the pod on port "CTE0.IOM.H6.P0" is redundant.

```
Request: PUT/deviceManager/rest/2102353JMM10KA000024/NET_GLOBAL/check_pod_redundance
{
    "checkRedundancyType":"0",
    "redundancyPortName":"CTE0.IOM.H6.P0"
}

Response: {
  "data": {
    "noRedundantpodList": "busybox-kata-67875c8b87-dfhsb,default;",
    "redundancyCheckResult": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

- Check whether the pod on card "0A, 0" is redundant.

```
Request: PUT/deviceManager/rest/2102353JMM10KA000024/NET_GLOBAL/check_pod_redundance
{
    "checkRedundancyType":"1",
    "redundancyCardId":"0A.0"
}

Response: {
  "data": {
    "noRedundantpodList": "busybox-kata-67875c8b87-dfhsb,default;",
    "redundancyCheckResult": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

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- Check whether the pod on controller "0A" is redundant.

```
Request: PUT/deviceManager/rest/2102353JMM10KA000024/NET_GLOBAL/check_pod_redundance
{
    "checkRedundancyType":"2",
    "redundancyNodeId":"0A"
}

Response: {
  "data": {
    "noRedundantpodList": "busybox-kata-67875c8b87-dfhsb,default;",
    "redundancyCheckResult": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.3 expansion_module

2.6.3.1 Add

2.6.3.2 Delete

2.6.3.3 Modify

2.6.3.3.1 Interface for Modifying Expansion Module Information

Function

This interface is used to modify basic information about the expansion module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/EXPBOARD/{id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	ID of an expansion module.

Parameter	Mandatory/Optional/Conditional	Type	Description
LIGHTSTATUS	Optional	enum	Indicates the status of the location indicator. **The value is described as follows:** 1: on 0: off

Result

Parameter	Mandatory/Conditional	Type	Description
LIGHTSTATUS	Conditional	string(enum)	Indicates the status of the location indicator. **The value is described as follows:** 1: on 0: off
TYPE	Mandatory	uint32	Type of the expansion board.
ID	Mandatory	string	ID of an expansion module.

Example

- Turning on the location indicator of the expansion module.

```
Request: PUT /deviceManager/rest/210235843910E6000009/EXPBOARD/64.0
{
    "LIGHTSTATUS": 1
}
Response:
{
  "data": {
    "ID": "64.0",
    "LIGHTSTATUS": "1",
    "TYPE": 208
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.3.4 Query

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2.6.3.4.1 Interface for Batch Querying Expansion Board Information

Function

This interface is used to batch query basic information about expansion boards.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/expboard

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 208: expansion board
ID	Mandatory	string	Expansion module ID.
NAME	Mandatory	string	Name of the expansion module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	ID of the enclosure.
LOCATION	Mandatory	string	Expansion board location, which is in the format of enclosure ID.slot silkscreen of the expansion board.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 12: Powering on 13: Powered off 27: Online 28: Offline
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 0: SAS 1: FC 5: NVMe 6: smart SAS 7: smart NVMe
LOGICVER	Mandatory	string	Logic version.
PCBVER	Mandatory	string	PCB version.
SESVER	Mandatory	string	SES version.
ELABEL	Mandatory	string	Electronic label.
LIGHTSTATUS	Mandatory	enum	Indicates the status of the location indicator.
sn	Mandatory	string	SN.

Example

- Batch querying all expansion boards of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/expboard

Response: {
   "data": [
```

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```
        {
            "ELABEL": "[Board Properties]
\nBoardType=STL6DESB02\nBarCode=033ENH10KA000157\nItem=03033ENH\nDescription=Finished
Board,PANGEA,STL6DESB02,IP NVMe Disk Array Enclosure Expansion Module&#40;Kunpeng920 24
Cores,2*8G Cache,4*100GE&#41;,for High-end only
\nManufactured=2019-11-03\nVendorName=Huawei\nIssueNumber=00\nCLEICode=\nBOM=\nModel=
\n",
            "HEALTHSTATUS": "1",
            "ID": "64.0",
            "LIGHTSTATUS": "0",
            "LOCATION": "DAE030.A",
            "LOGICVER": "00.02.100T46",
            "MODEL": "7",
            "NAME": "A",
            "PARENTID": "64",
            "PARENTTYPE": 206,
            "PCBVER": "VER.A",
            "RUNNINGSTATUS": "2",
            "SESVER": "7.60.05.081",
            "TYPE": 208,
            "sn": "033ENH10KA000157"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.3.4.2 Interface for Querying Expansion Board Information

Function

This interface is used to query basic information about an expansion board.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/expboard/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Expansion board ID.

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 208: expansion board
ID	Mandatory	string	Expansion module ID.
NAME	Mandatory	string	Name of the expansion module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Expansion board location, which is in the format of enclosure ID.slot silkscreen of the expansion board.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 12: Powering on 13: Powered off 27: Online 28: Offline

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 0: SAS 1: FC 5: NVMe 6: smart SAS 7: smart NVMe
LOGICVER	Mandatory	string	Logic version.
PCBVER	Mandatory	string	PCB version.
SESVER	Mandatory	string	SES version.
ELABEL	Mandatory	string	Electronic label.
LIGHTSTATUS	Mandatory	enum	Indicates the status of the location indicator.
sn	Mandatory	string	SN.

Example

- Querying basic information about the expansion board whose ID is 2.0.

```
Request: GET /deviceManager/rest/210235843910E6000009/expboard/2.0

Response: {
   "data": {
      "ELABEL": "[Board Properties]
\nBoardType=STL6DESB02\nBarCode=033ENH10KA000157\nItem=03033ENH\nDescription=Finished
Board,PANGEA,STL6DESB02,IP NVMe Disk Array Enclosure Expansion Module&#40;Kunpeng920 24
Cores,2*8G Cache,4*100GE&#41;,for High-end only
\nManufactured=2019-11-03\nVendorName=Huawei\nIssueNumber=00\nCLEICode=\nBOM=\nModel=
\n",
      "HEALTHSTATUS": "1",
      "ID": "64.0",
      "LIGHTSTATUS": "0",
      "LOCATION": "DAE030.A",
      "LOGICVER": "00.02.100T46",
      "MODEL": "7",
      "NAME": "A",
      "PARENTID": "64",
      "PARENTTYPE": 206,
      "PCBVER": "VER.A",
      "RUNNINGSTATUS": "2",
      "SESVER": "7.60.05.081",
      "TYPE": 208,
      "sn": "033ENH10KA000157"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.3.4.3 Interface for Querying the Number of Expansion Modules

Function

This interface is used to query the number of expansion modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/EXPBOARD/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of expansion modules.

Example

- Querying the number of expansion modules.

```
Request: GET /deviceManager/rest/210425612544525214 32/EXPBOARD/count

Response:
{
  "data": {
    "COUNT": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.3.5 Others

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2.6.4 interface_module

2.6.4.1 Add

2.6.4.2 Delete

2.6.4.3 Modify

2.6.4.3.1 Interface for Modifying Interface Module Information

Function

This interface is used to modify interface module information.

HighRisk

You are about to change the security type of the interface module to IPsec.

This operation will disable the TOE capability of all ports on the interface module and disconnect existing TOE links, which may interrupt services.

Suggestion: Ensure that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/INTF_MODULE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Interface module ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RUNMODE	Optional	enum	Working mode. **The value is described as follows:** 1: FC 2: Ethernet (support for iSCSI and FCoE protocols) **Note:**You need to query the value of the RUNMODELIST field of the interface module to know the supported working mode.
LIGHTSTATUS	Optional	enum	Location indicator status. **The value is described as follows:** 0: off 1: on
CNTRMODE	Optional	enum	Usage type. **The value is described as follows:** 1: array mode 2: front-end container mode 3: back-end container mode **Note:**Either CNTRMODE or securityType can be set.
securityType	Optional	enum	Security type. **The value is described as follows:** 0: None; 1: IPsec. **Note:**Either CNTRMODE or securityType can be set.

Result

N/A

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Example

- Modifying interface module information.

```
Request: PUT /deviceManager/rest/210235843910E6000009/INTF_MODULE/0A.0
{
   "RUNMODE":1,
   "LIGHTSTATUS":1,
   "CNTRMODE":2
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.4.4 Query

2.6.4.4.1 Interface for Batch Querying Interface Module Information

Function

This interface is used to batch query basic information about interface modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/intf_module

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 209: interface module
ID	Mandatory	string	Interface module ID.
NAME	Mandatory	string	Interface module name.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller
PARENTID	Mandatory	string	Enclosure ID or controller ID.
LOCATION	Mandatory	string	Expansion module location, which is in the format of enclosure ID.slot silkscreen of the expansion module.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 12: Powering on 13: Powered off 27: Online 28: Offline 103: Power-on failed

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 516: 4-port FE 1 Gbit/s ETH I/O module 518: 4-port BE 12 Gbit/s SAS I/O module 529: AI accelerator card 535: AI accelerator card 537: 4-port FE 1 Gbit/s ETH I/O module 538: 4-port BE 12 Gbit/s SAS I/O module 580: 4-port FE 1 Gbit/s ETH I/O module 583: 4-port BE 12 Gbit/s SAS V2 I/O module 601: 4-port FE 1 Gbit/s ETH I/O module 2304: 4-port FE 8 Gbit/s Fibre Channel I/O module 2305: 4-port FE 16 Gbit/s Fibre Channel I/O module 2306: 4-port FE 32 Gbit/s Fibre Channel I/O module 2307: 4-port FE 10 Gbit/s ETH I/O module 2308: 4-port FE 25 Gbit/s ETH I/O module 2309: 4-port SO 25 Gbit/s RDMA I/O module 2310: 4-port FE 8 Gbit/s Fibre Channel I/O module 2311: 4-port FE 16 Gbit/s Fibre Channel I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2312: 4-port FE 32 Gbit/s Fibre Channel I/O module 2313: 4-port FE 10 Gbit/s ETH I/O module 2314: 4-port FE 25 Gbit/s ETH I/O module 2315: 2-port FE 40 Gbit/s ETH I/O module 2316: 2-port FE 100 Gbit/s ETH I/O module 2317: 2-port BE 100 Gbit/s RDMA I/O module 2318: 2-port SO 100 Gbit/s RDMA I/O module 2319: 2-port FE 40 Gbit/s ETH I/O module 2320: 2-port FE 100 Gbit/s ETH I/O module 2321: 2-port BE 100 Gbit/s RDMA I/O module 2322: 2-port SO 100 Gbit/s RDMA I/O module 2323: 4-port FE 10 Gbit/s RoCE I/O module 2324: 4-port FE 25 Gbit/s RoCE I/O module 2325: 4-port FE 10 Gbit/s RoCE I/O module 2326: 4-port FE 25 Gbit/s RoCE I/O module 2327: 2-port FE 40 Gbit/s RoCE I/O module 2328: 2-port FE 100 Gbit/s RoCE I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2329: 2-port FE 40 Gbit/s RoCE I/O module 2330: 2-port FE 100 Gbit/s RoCE I/O module 2331: 4-port FE 10 Gbit/s ETH I/O module 2332: 4-port FE 10 Gbit/s ETH I/O module 2333: 4-port FE 8 Gbit/s Fibre Channel I/O module 2334: 4-port FE 16 Gbit/s Fibre Channel I/O module 2335: 4-port FE 32 Gbit/s Fibre Channel I/O module 2336: 4-port FE 10 Gbit/s ETH I/O module 2337: 4-port FE 25 Gbit/s ETH I/O module 2338: 4-port SO 25 Gbit/s RDMA I/O module 2339: 4-port FE 10 Gbit/s RoCE I/O module 2340: 4-port FE 25 Gbit/s RoCE I/O module 2341: 4-port FE 8 Gbit/s Fibre Channel I/O module 2342: 4-port FE 16 Gbit/s Fibre Channel I/O module 2343: 4-port FE 32 Gbit/s Fibre Channel I/O module 2344: 4-port FE 10 Gbit/s ETH I/O module 2345: 4-port FE 25 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2346: 4-port FE 10 Gbit/s RoCE I/O module 2347: 4-port FE 25 Gbit/s RoCE I/O module 2348: 2-port FE 40 Gbit/s ETH I/O module 2349: 2-port FE 100 Gbit/s ETH I/O module 2350: 2-port BE 100 Gbit/s RDMA I/O module 2351: 2-port SO 100 Gbit/s RDMA I/O module 2352: 2-port FE 40 Gbit/s RoCE I/O module 2353: 2-port FE 100 Gbit/s RoCE I/O module 2354: 2-port FE 40 Gbit/s ETH I/O module 2355: 2-port FE 100 Gbit/s ETH I/O module 2356: 2-port BE 100 Gbit/s RDMA I/O module 2357: 2-port SO 100 Gbit/s RDMA I/O module 2358: 2-port FE 40 Gbit/s RoCE I/O module 2359: 2-port FE 100 Gbit/s RoCE I/O module 2360: 4-port FE 10 Gbit/s ETH I/O module 2361: 4-port SO 25 Gbit/s RDMA I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2362: 2-port SO 100 Gbit/s RDMA I/O module 2363: 2-port SO 100 Gbit/s RDMA I/O module 2364: 4-port FE 10 Gbit/s ETH I/O module 2365: 4-port FE 25 Gbit/s ETH I/O module 2366: 4-port FE 10 Gbit/s ETH I/O module 2367: 4-port FE 25 Gbit/s RoCE I/O module 2368: 4-port FE 8 Gbit/s Fibre Channel I/O module 2369: 4-port FE 16 Gbit/s Fibre Channel I/O module 2370: 4-port FE 32 Gbit/s Fibre Channel I/O module 2371: 4-port FE 10 Gbit/s ETH I/O module 2372: 4-port FE 25 Gbit/s ETH I/O module 2373: 4-port FE 25 Gbit/s RoCE I/O module 2375: 4-port FE 8 Gbit/s Fibre Channel I/O module 2376: 4-port FE 16 Gbit/s Fibre Channel I/O module 2377: 4-port FE 32 Gbit/s Fibre Channel I/O module 2378: 4-port FE 10 Gbit/s ETH I/O module 2379: 4-port FE 25 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2380: 4-port FE 10 Gbit/s RoCE I/O module 2381: 4-port FE 25 Gbit/s NoF I/O module 2382: 2-port FE 40 Gbit/s ETH I/O module 2383: 2-port FE 100 Gbit/s ETH I/O module 2384: 2-port BE 100 Gbit/s RDMA I/O module 2385: 2-port SO 100 Gbit/s RDMA I/O module 2386: 2-port FE 40 Gbit/s RoCE I/O module 2387: 2-port FE 100 Gbit/s RoCE I/O module 2388: 2-port FE 100 Gbit/s NoF I/O module 2389: 4-port BE 12 Gbit/s SAS I/O module 2390: 4-port FE 1 Gbit/s ETH I/O module 2391: 2-port FE 1 Gbit/s ETH I/O module 2393: 4-port FE 25 Gbit/s RoCE I/O module 2394: 4-port FE 8 Gbit/s Fibre Channel I/O module 2395: 4-port FE 16 Gbit/s Fibre Channel I/O module 2396: 4-port FE 32 Gbit/s Fibre Channel I/O module 2397: 4-port FE 10 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2398: 4-port FE 25 Gbit/s ETH I/O module 2399: 4-port SO 25 Gbit/s RDMA I/O module 2400: 4-port FE 10 Gbit/s RoCE I/O module 2401: 4-port FE 25 Gbit/s RoCE I/O module 2402: 2-port FE 40 Gbit/s ETH I/O module 2403: 2-port FE 100 Gbit/s ETH I/O module 2404: 2-port BE 100 Gbit/s RDMA I/O module 2405: 2-port SO 100 Gbit/s RDMA I/O module 2406: 2-port FE 40 Gbit/s RoCE I/O module 2407: 2-port FE 100 Gbit/s RoCE I/O module 2408: 4-port FE 10 Gbit/s ETH I/O module 2409: 4-port FE 25 Gbit/s ETH I/O module 2410: 4-port FE 25 Gbit/s RoCE I/O module 2411: 4-port FE 10 Gbit/s ETH I/O module 2412: 4-port FE 10 Gbit/s ETH I/O module 2413: 4-port FE 25 Gbit/s ETH I/O module 2414: 4-port FE 25 Gbit/s RoCE I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			4133: management module 4134: management module 2415: 4-port FE 10 Gbit/s ETH I/O module 2416: 4-port FE 10 Gbit/s ETH I/O module
ELABEL	Mandatory	string	Electronic label.
LOGICVER	Mandatory	string	Logic version.
PCBVER	Mandatory	string	PCB version.
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C
MULTMODE	Mandatory	string(bool)	Multi-working mode supported or not. **The value is described as follows:** true: supported false: not supported
RUNMODE	Mandatory	string(enum)	Working mode. **The value is described as follows:** 1: FC 2: FCoE/iSCSI 3: Cluster 4: Ethernet 5: RDMA 6: NoF 9: NoF 10: RoCE **Note:**Other values are invalid.
RUNMODELIST	Mandatory	array	List of supported working modes (If a working mode is not supported, -- is returned.).

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Parameter	Mandatory/ Conditional	Type	Description
LIGHTSTATUS	Mandatory	string(enum)	Indicator status. **The value is described as follows:** 0: off 1: on
SERVICEMODE	Mandatory	enum	Usage mode. **The value is described as follows:** 1:Front-End;2:Back-End;3:ScaleOut;4:Back Up;5:Front-NoF;6:Container-Front-End;7:Container-Back-End;8:Front-NoF-Active
sn	Mandatory	string	Serial number.
securityType	Mandatory	enum	Security type. **The value is described as follows:** 0: None; 1: IPsec.

Example

- Batch querying all interface modules of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/intf_module

Response: {
   "data": [
      {
         "ELABEL": "[Board Properties]
\nBoardType=STL2IEG4\nBarCode=022LPR10E3000094\nItem=03022LPR\nDescription=Manufactured
Board,PANGEA hardware platform,STL2IEG4,4 ports Gbps Ethernet I/O
modules-4*1\nManufactured=2014-03-13\nVendorName=Huawei\nIssueNumber=00\nCLEICode=
\nBOM=\n\n",
         "HEALTHSTATUS": "1",
         "ID": "0A.1",
         "LIGHTSTATUS": "0",
         "LOCATION": "CTE0.A.IOM1",
         "LOGICVER": "--",
         "MODEL": "12",
         "MULTMODE": "false",
         "NAME": "A.IOM1",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "PCBVER": "VER.A",
         "RUNMODE": "1",
         "RUNMODELIST": "--",
         "RUNNINGSTATUS": "2",
         "TEMPERATURE": "-1",
         "TYPE": 209,
         "SERVICEMODE": 7,
         "sn": "022LPR10E3000094",
```

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```
            "securityType": "0"
        },

    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.4.4.2 Interface for Querying Interface Module Information

Function

This interface is used to query basic information about an interface module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/intf_module/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Interface module ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 209: interface module
ID	Mandatory	string	Interface module ID.
NAME	Mandatory	string	Interface module name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	Enclosure ID or controller ID.
LOCATION	Mandatory	string	Expansion module location, which is in the format of enclosure ID.slot silkscreen of the expansion module.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 12: Powering on 13: Powered off 27: Online 28: Offline 103: Power-on failed

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string(enum)	Model. **The value is described as follows:** 516: 4-port FE 1 Gbit/s ETH I/O module 518: 4-port BE 12 Gbit/s SAS I/O module 529: AI accelerator card 535: AI accelerator card 537: 4-port FE 1 Gbit/s ETH I/O module 538: 4-port BE 12 Gbit/s SAS I/O module 580: 4-port FE 1 Gbit/s ETH I/O module 583: 4-port BE 12 Gbit/s SAS V2 I/O module 601: 4-port FE 1 Gbit/s ETH I/O module 2304: 4-port FE 8 Gbit/s Fibre Channel I/O module 2305: 4-port FE 16 Gbit/s Fibre Channel I/O module 2306: 4-port FE 32 Gbit/s Fibre Channel I/O module 2307: 4-port FE 10 Gbit/s ETH I/O module 2308: 4-port FE 25 Gbit/s ETH I/O module 2309: 4-port SO 25 Gbit/s RDMA I/O module 2310: 4-port FE 8 Gbit/s Fibre Channel I/O module 2311: 4-port FE 16 Gbit/s Fibre Channel I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2312: 4-port FE 32 Gbit/s Fibre Channel I/O module 2313: 4-port FE 10 Gbit/s ETH I/O module 2314: 4-port FE 25 Gbit/s ETH I/O module 2315: 2-port FE 40 Gbit/s ETH I/O module 2316: 2-port FE 100 Gbit/s ETH I/O module 2317: 2-port BE 100 Gbit/s RDMA I/O module 2318: 2-port SO 100 Gbit/s RDMA I/O module 2319: 2-port FE 40 Gbit/s ETH I/O module 2320: 2-port FE 100 Gbit/s ETH I/O module 2321: 2-port BE 100 Gbit/s RDMA I/O module 2322: 2-port SO 100 Gbit/s RDMA I/O module 2323: 4-port FE 10 Gbit/s RoCE I/O module 2324: 4-port FE 25 Gbit/s RoCE I/O module 2325: 4-port FE 10 Gbit/s RoCE I/O module 2326: 4-port FE 25 Gbit/s RoCE I/O module 2327: 2-port FE 40 Gbit/s RoCE I/O module 2328: 2-port FE 100 Gbit/s RoCE I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2329: 2-port FE 40 Gbit/s RoCE I/O module 2330: 2-port FE 100 Gbit/s RoCE I/O module 2331: 4-port FE 10 Gbit/s ETH I/O module 2332: 4-port FE 10 Gbit/s ETH I/O module 2333: 4-port FE 8 Gbit/s Fibre Channel I/O module 2334: 4-port FE 16 Gbit/s Fibre Channel I/O module 2335: 4-port FE 32 Gbit/s Fibre Channel I/O module 2336: 4-port FE 10 Gbit/s ETH I/O module 2337: 4-port FE 25 Gbit/s ETH I/O module 2338: 4-port SO 25 Gbit/s RDMA I/O module 2339: 4-port FE 10 Gbit/s RoCE I/O module 2340: 4-port FE 25 Gbit/s RoCE I/O module 2341: 4-port FE 8 Gbit/s Fibre Channel I/O module 2342: 4-port FE 16 Gbit/s Fibre Channel I/O module 2343: 4-port FE 32 Gbit/s Fibre Channel I/O module 2344: 4-port FE 10 Gbit/s ETH I/O module 2345: 4-port FE 25 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2346: 4-port FE 10 Gbit/s RoCE I/O module 2347: 4-port FE 25 Gbit/s RoCE I/O module 2348: 2-port FE 40 Gbit/s ETH I/O module 2349: 2-port FE 100 Gbit/s ETH I/O module 2350: 2-port BE 100 Gbit/s RDMA I/O module 2351: 2-port SO 100 Gbit/s RDMA I/O module 2352: 2-port FE 40 Gbit/s RoCE I/O module 2353: 2-port FE 100 Gbit/s RoCE I/O module 2354: 2-port FE 40 Gbit/s ETH I/O module 2355: 2-port FE 100 Gbit/s ETH I/O module 2356: 2-port BE 100 Gbit/s RDMA I/O module 2357: 2-port SO 100 Gbit/s RDMA I/O module 2358: 2-port FE 40 Gbit/s RoCE I/O module 2359: 2-port FE 100 Gbit/s RoCE I/O module 2360: 4-port FE 10 Gbit/s ETH I/O module 2361: 4-port SO 25 Gbit/s RDMA I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2362: 2-port SO 100 Gbit/s RDMA I/O module 2363: 2-port SO 100 Gbit/s RDMA I/O module 2364: 4-port FE 10 Gbit/s ETH I/O module 2365: 4-port FE 25 Gbit/s ETH I/O module 2366: 4-port FE 10 Gbit/s ETH I/O module 2367: 4-port FE 25 Gbit/s RoCE I/O module 2368: 4-port FE 8 Gbit/s Fibre Channel I/O module 2369: 4-port FE 16 Gbit/s Fibre Channel I/O module 2370: 4-port FE 32 Gbit/s Fibre Channel I/O module 2371: 4-port FE 10 Gbit/s ETH I/O module 2372: 4-port FE 25 Gbit/s ETH I/O module 2373: 4-port FE 25 Gbit/s RoCE I/O module 2375: 4-port FE 8 Gbit/s Fibre Channel I/O module 2376: 4-port FE 16 Gbit/s Fibre Channel I/O module 2377: 4-port FE 32 Gbit/s Fibre Channel I/O module 2378: 4-port FE 10 Gbit/s ETH I/O module 2379: 4-port FE 25 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2380: 4-port FE 10 Gbit/s RoCE I/O module 2381: 4-port FE 25 Gbit/s NoF I/O module 2382: 2-port FE 40 Gbit/s ETH I/O module 2383: 2-port FE 100 Gbit/s ETH I/O module 2384: 2-port BE 100 Gbit/s RDMA I/O module 2385: 2-port SO 100 Gbit/s RDMA I/O module 2386: 2-port FE 40 Gbit/s RoCE I/O module 2387: 2-port FE 100 Gbit/s RoCE I/O module 2388: 2-port FE 100 Gbit/s NoF I/O module 2389: 4-port BE 12 Gbit/s SAS I/O module 2390: 4-port FE 1 Gbit/s ETH I/O module 2391: 2-port FE 1 Gbit/s ETH I/O module 2393: 4-port FE 25 Gbit/s RoCE I/O module 2394: 4-port FE 8 Gbit/s Fibre Channel I/O module 2395: 4-port FE 16 Gbit/s Fibre Channel I/O module 2396: 4-port FE 32 Gbit/s Fibre Channel I/O module 2397: 4-port FE 10 Gbit/s ETH I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			2398: 4-port FE 25 Gbit/s ETH I/O module 2399: 4-port SO 25 Gbit/s RDMA I/O module 2400: 4-port FE 10 Gbit/s RoCE I/O module 2401: 4-port FE 25 Gbit/s RoCE I/O module 2402: 2-port FE 40 Gbit/s ETH I/O module 2403: 2-port FE 100 Gbit/s ETH I/O module 2404: 2-port BE 100 Gbit/s RDMA I/O module 2405: 2-port SO 100 Gbit/s RDMA I/O module 2406: 2-port FE 40 Gbit/s RoCE I/O module 2407: 2-port FE 100 Gbit/s RoCE I/O module 2408: 4-port FE 10 Gbit/s ETH I/O module 2409: 4-port FE 25 Gbit/s ETH I/O module 2410: 4-port FE 25 Gbit/s RoCE I/O module 2411: 4-port FE 10 Gbit/s ETH I/O module 2412: 4-port FE 10 Gbit/s ETH I/O module 2413: 4-port FE 25 Gbit/s ETH I/O module 2414: 4-port FE 25 Gbit/s RoCE I/O module

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Parameter	Mandatory/ Conditional	Type	Description
			4133: management module 4134: management module 2415: 4-port FE 10 Gbit/s ETH I/O module 2416: 4-port FE 10 Gbit/s ETH I/O module
ELABEL	Mandatory	string	Electronic label.
LOGICVER	Mandatory	string	Logic version.
PCBVER	Mandatory	string	PCB version.
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**°C
MULTMODE	Mandatory	string(bool)	Multi-working mode supported or not. **The value is described as follows:** true: supported false: not supported
RUNMODE	Mandatory	string(enum)	Working mode. **The value is described as follows:** 1: FC 2: FCoE/iSCSI 3: Cluster 4: Ethernet 5: RDMA 6: NoF 9: NoF 10: RoCE **Note:**Other values are invalid.
RUNMODELIST	Mandatory	array	List of supported working modes (If a working mode is not supported, -- is returned.).

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Parameter	Mandatory/ Conditional	Type	Description
LIGHTSTATUS	Mandatory	string(enum)	Indicator status. **The value is described as follows:** 0: off 1: on
SERVICEMODE	Mandatory	enum	Usage mode. **The value is described as follows:** 1:Front-End;2:Back-End;3:ScaleOut;4:Back Up;5:Front-NoF;6:Container-Front-End;7:Container-Back-End;8:Front-NoF-Active
sn	Mandatory	string	Serial number.
securityType	Mandatory	enum	Security type. **The value is described as follows:** 0: None; 1: IPsec.

Example

- Querying basic information about the interface module whose ID is 0A.1.

```
Request: GET /deviceManager/rest/210235843910E6000009/intf_module/0A.1

Response: {
   "data": {
      "ELABEL": "[Board Properties]
\nBoardType=STL2IEG4\nBarCode=022LPR10E3000094\nItem=03022LPR\nDescription=Manufactured Board,PANGEA hardware platform,STL2IEG4,4 ports Gbps Ethernet I/O modules-4*1\nManufactured=2014-03-13\nVendorName=Huawei\nIssueNumber=00\nCLEICode=\nBOM=\n\n",
      "HEALTHSTATUS": "1",
      "ID": "0A.1",
      "LIGHTSTATUS": "0",
      "LOCATION": "CTE0.A.IOM1",
      "LOGICVER": "--",
      "MODEL": "12",
      "MULTMODE": "false",
      "NAME": "A.IOM1",
      "PARENTID": "0A",
      "PARENTTYPE": 207,
      "PCBVER": "VER.A",
      "RUNMODE": "1",
      "RUNMODELIST": "--",
      "RUNNINGSTATUS": "2",
      "TEMPERATURE": "-1",
      "TYPE": 209,
      "SERVICEMODE": 7,
      "sn": "022LPR10E3000094",
      "securityType": "0"
```

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```
  },
  "error": {
     "code": 0,
     "description": "0"
  }
}
```

2.6.4.4.3 Interface for Querying the Number of Interface Modules

Function

This interface is used to query the number of interface modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/INTF_MODULE/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of interface modules.

Example

- Querying the number of interface modules whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/INTF_MODULE/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
```

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```
 }
}
```

2.6.4.5 Others

2.6.4.5.1 Interface for Powering Off Interface Modules

Function

This interface is used to power off interface modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/INTF_MODULE/INTF_MODULE_POWER_OFF

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Interface module ID.

Result

N/A

Example

- Power off interface module.

```
Request: PUT /deviceManager/rest/210235843910E6000009/INTF_MODULE/INTF_MODULE_POWER_OFF
{
   "ID":"0A.0"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.4.5.2 Interface for Powering On Interface Modules

Function

This interface is used to power on interface modules.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/INTF_MODULE/INTF_MODULE_POWER_ON

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Interface module ID.

Result

N/A

Example

- Power on interface module.

```
Request: PUT /deviceManager/rest/210235843910E6000009/INTF_MODULE/INTF_MODULE_POWER_ON
{
    "ID":"0A.0"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.5 disk

2.6.5.1 Add

2.6.5.2 Delete

2.6.5.3 Modify

2.6.5.4 Query

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2.6.5.4.1 Interface for Batch Querying Disk Information

Function

This interface is used to batch query basic information about disks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/disk

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Optional	string	Enclosure ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 10: disk
ID	Mandatory	string	Disk ID.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 3: About to fail 17: Single link
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 14: Pre-copy 16: Rebuilt 27: Online 28: Offline 114: Erasing 115: Verifying 117: Removing
DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM SSD
SECTORS	Mandatory	string(uint64)	Number of sectors.
BANDWIDTH	Mandatory	string(uint64)	Interface bandwidth. **Unit:**Mbit/s
SECTORSIZE	Mandatory	string(uint32)	Sector size. **Unit:**bytes
SPEEDRPM	Mandatory	string(uint32)	Rotational speed. **Unit:**RPM
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**℃

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string	Model. **Note:**The format of models varies with providers. For example, the format of a Seagate disk model is as follows: ST +Disk size+Capacity +Primary label +Secondary label +Interface type.
FIRMWAREVER	Mandatory	string	Firmware version.
MANUFACTURER	Mandatory	string	Manufacturer.
SERIALNUMBER	Mandatory	string	SN.
LIGHTSTATUS	Mandatory	string(enum)	Indicator status. **The value is described as follows:** 0: off 1: The location indicator is blinking. 2: The fault indicator is steady on.
LOGICTYPE	Mandatory	string(enum)	Logical type. **The value is described as follows:** 1: free disk 2: member disk 3: hot spare disk 4: cache disk
POOLID	Mandatory	string	Pool ID.
POOLNAME	Mandatory	string	Pool name.
POOLTIERID	Mandatory	string	ID of the tier where the disk resides.
ISCOFFERDISK	Mandatory	string(bool)	Coffer disk or not. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
RUNTIME	Mandatory	string(uint32)	Number of operating days. **Unit:**day
PROGRESS	Mandatory	string(uint32)	Progresses of reconstruction, copyback, pre-copy, and destruction. **Unit:**%
barcode	Mandatory	string	Huawei 21 code.
CAPACITYUSAGE	Mandatory	string(uint32)	Capacity usage. **Unit:**%
MULTIPATH	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.
HEALTHMARK	Mandatory	string(uint32)	Health score of the disk.
DISKIFTYPE	Mandatory	string(enum)	Disk interface type. **The value is described as follows:** 0: Not Available 1: FC SSD 2: SAS SSD 3: NL-SAS SSD 4: SATA SSD 5: SATA2 SSD 6: SATA3 SSD
DISKFORM	Mandatory	string(enum)	Disk dimensions. **The value is described as follows:** 0: unknown 1: 5.25 inch 2: 3.5 inch 3: 2.5 inch 4: 1.8 inch

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Parameter	Mandatory/ Conditional	Type	Description
DISKPORTADDR	Mandatory	string	The value varies with the disk interface type. **The value is described as follows:** FC: WWN of a Fibre Channel port SAS: SAS address (a 16-digit hexadecimal number) SATA: The field is left empty.
SMARTCACHEPOOLID	Mandatory	string	ID of the SmartCache pool where the disk resides (This parameter is configured for cache disks.).
ABRASIONRATE	Mandatory	string(int)	Wear (Wear is the percentage of used service life to total service life.). **Unit:**%
REMAINLIFE	Mandatory	string(int)	Remaining service life. **Unit:**days
formatProgress	Conditional	string(int)	Formatting progress. **Unit:**% **Note:**This field is returned only when the value of the formatting progress is valid.
formatRemainTime	Conditional	string(int)	Remaining formatting time. **Unit:**seconds **Note:**This field is returned only when the value of the formatting progress is valid.
AUTOLOCKSTATUS	Mandatory	string(bool)	Disk AK switch status.
KEYEXPIRATIONTIME	Mandatory	string(uint64)	Self-encrypting disk key expiration time.

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Parameter	Mandatory/ Conditional	Type	Description
ENCRYPTDISKTYPE	Mandatory	string(enum)	Encryption type. **The value is described as follows:** 0: common disk 1: self-encrypting disk
STORAGEENGINEID	Mandatory	string	Storage engine ID.
ITEM	Mandatory	string	Disk BOM.
ELABEL	Mandatory	string	Electronic label.
REDUCESECTORS	Mandatory	string(int)	Number of reduced sectors. **Note:**This field is not supported in this version, and its value is invalid.
eraseProgess	Mandatory	uint32	Progress of data erasure. **The value is described as follows:** 0..100
manuCapacity	Mandatory	string(uint64)	Capacity provided by the manufacturer (1 GB = 1000 x 1000 x 1000 bytes).
diskDataPath	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.
performanceLayerId	Mandatory	uint32	ID of the performance layer. **The value is described as follows:** 0-63 **Note:**When the parameter is invalid, an empty character string is filled in the output field.

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Parameter	Mandatory/ Conditional	Type	Description
performanceLayer-Name	Mandatory	string	Name of the performance layer.

Example

- Querying all disks of the storage array.


```
Request: GET/deviceManager/rest/210235843910E6000009/diskResponse: {
   "data": [
      {
         "ABRASIONRATE": "0",
         "AUTOLOCKSTATUS": "true",
         "BANDWIDTH": "6000",
         "CAPACITYUSAGE": "0",
         "DISKFORM": "2",
         "DISKIFTYPE": "0",
         "DISKPORTADDR": "530D17EB4F761000",
         "DISKTYPE": "3",
         "ELABEL": "[
            BoardProperties
         ]\r\nBoardType=STLZ5S500\r\nBarCode=210235G6BB1000000007\r\nItem=0235G6BB\r
\nDescription=PANGEA,
         STLZ5S500,
         500GB7.2KRPM3GSATADiskUnit(2.5\")\r\nManufactured=2012-05-31\r
\nVendorName=Huawei\r\nIssueNumber=00\r\nCLEICode=\r\nBOM=\r\n",
         "ENCRYPTDISKTYPE": "0",
         "FIRMWAREVER": "0003",
         "HEALTHMARK": "255",
         "HEALTHSTATUS": "1",
         "ID": "0",
         "ISCOFFERDISK": "true",
         "ITEM": "0235G6BB",
         " KEYEXPIRATIONTIME": "-1",
         "LIGHTSTATUS": "0",
         "LOCATION": "CTE0.0",
         "LOGICTYPE": "1",
         "MANUFACTURER": "Seagate",
         "MODEL": "ST2000NM0023",
         "MULTIPATH": "[
            \"A\",
            \"B\"
         ]",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "POOLID": "",
         "POOLNAME": "",
         "POOLTIERID": "",
         "PROGRESS": "0",
         "REDUCESECTORS": "0",
         "REMAINLIFE": "0",
         "RUNNINGSTATUS": "27",
         "RUNTIME": "500",
         "SECTORS": "3812691536",
         "SECTORSIZE": "520",
         "SERIALNUMBER": "Z1X2F480000094381WYN",
         "SMARTCACHEPOOLID": "4294967295",
         "SPEEDRPM": "7200",
         "STORAGEENGINEID": "0",
         "TEMPERATURE": "37",
         "TYPE": 10,
         "barcode": "210235G6BB1000000007",
         "dataPath": "0A:normal,
          0B:normal",
```


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```
            "formatProgress": "0",
            "formatRemainTime": "0",
            "eraseProgess": "30",
            "manuCapacity": "600000000000",
            "performanceLayerId": "",
            "performanceLayerName": ""
        },
        ...
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.5.4.2 Interface for Querying Disk Information

Function

This interface is used to query basic information about a disk.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/disk/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Disk ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 10: disk
ID	Mandatory	string	Disk ID.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 3: About to fail 17: Single link
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 14: Pre-copy 16: Rebuilt 27: Online 28: Offline 114: Erasing 115: Verifying 117: Removing
DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 1: SAS 3: SSD 4: NearLine SAS 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM SSD
SECTORS	Mandatory	string(uint64)	Number of sectors.
BANDWIDTH	Mandatory	string(uint64)	Interface bandwidth.
SECTORSIZE	Mandatory	string(uint32)	Sector size.
SPEEDRPM	Mandatory	string(uint32)	Rotational speed.
TEMPERATURE	Mandatory	string(uint32)	Temperature.

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string	Model. **Note:**The format of models varies with providers. For example, the format of a Seagate disk model is as follows: ST +Disk size+Capacity +Primary label +Secondary label +Interface type.
FIRMWAREVER	Mandatory	string	Firmware version.
MANUFACTURER	Mandatory	string	Manufacturer.
SERIALNUMBER	Mandatory	string	SN.
LIGHTSTATUS	Mandatory	string(enum)	Indicator status. **The value is described as follows:** 0: off 1: The location indicator is blinking. 2: The fault indicator is steady on.
LOGICTYPE	Mandatory	string(enum)	Logical type. **The value is described as follows:** 1: free disk 2: member disk 3: hot spare disk 4: cache disk
POOLID	Mandatory	string	Pool ID.
POOLNAME	Mandatory	string	Pool name.
POOLTIERID	Mandatory	string	ID of the tier where the disk resides.
ISCOFFERDISK	Mandatory	string(bool)	Coffer disk or not. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
RUNTIME	Mandatory	string(uint32)	Number of operating days.
PROGRESS	Mandatory	string(uint32)	Progresses of reconstruction, copyback, pre-copy, and destruction.
barcode	Mandatory	string	Huawei 21 code.
CAPACITYUSAGE	Mandatory	string(uint32)	Capacity usage.
MULTIPATH	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.
HEALTHMARK	Mandatory	string(uint32)	Health score of the disk.
DISKIFTYPE	Mandatory	string(enum)	Disk interface type. **The value is described as follows:** 0: Not Available 1: FC SSD 2: SAS SSD 3: NL-SAS SSD 4: SATA SSD 5: SATA2 SSD 6: SATA3 SSD
DISKFORM	Mandatory	string(enum)	Disk dimensions. **The value is described as follows:** 0: unknown 1: 5.25 inch 2: 3.5 inch 3: 2.5 inch 4: 1.8 inch

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Parameter	Mandatory/ Conditional	Type	Description
DISKPORTADDR	Mandatory	string	The value varies with the disk interface type. **The value is described as follows:** FC: WWN of a Fibre Channel port SAS: SAS address (a 16-digit hexadecimal number) SATA: The field is left empty.
SMARTCACHEPOOLID	Mandatory	string	ID of the SmartCache pool where the disk resides (This parameter is configured for cache disks.).
ABRASIONRATE	Mandatory	string(int)	Wear (Wear is the percentage of used service life to total service life.).
REMAINLIFE	Mandatory	string(int)	Remaining service life.
formatProgress	Conditional	string(int)	Formatting progress. **Note:**This field is returned only when the value of the formatting progress is valid.
formatRemainTime	Conditional	string(int)	Remaining formatting time. **Note:**This field is returned only when the value of the formatting progress is valid.
AUTOLOCKSTATUS	Mandatory	string(bool)	Disk AK switch status.
KEYEXPIRATIONTIME	Mandatory	string(uint64)	Self-encrypting disk key expiration time.

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Parameter	Mandatory/ Conditional	Type	Description
ENCRYPTDISKTYPE	Mandatory	string(enum)	Encryption type. **The value is described as follows:** 0: common disk 1: self-encrypting disk
STORAGEENGINEID	Mandatory	string	Storage engine ID.
ITEM	Mandatory	string	Disk BOM.
ELABEL	Mandatory	string	Electronic label.
REDUCESECTORS	Mandatory	string(int)	Number of reduced sectors. **Note:**This field is not supported in this version, and its value is invalid.
eraseProgess	Mandatory	uint32	Progress of data erasure. **The value is described as follows:** 0..100
manuCapacity	Mandatory	string(uint64)	Capacity provided by the manufacturer (1 GB = 1000 x 1000 x 1000 bytes).
diskDataPath	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.
performanceLayerId	Mandatory	uint32	ID of the performance layer. **The value is described as follows:** 0-63 **Note:**When the parameter is invalid, an empty character string is filled in the output field.

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Parameter	Mandatory/ Conditional	Type	Description
performanceLayer-Name	Mandatory	string	Name of the performance layer.

Example

- Querying basic information about the disk whose ID is 0.

Request: GET/deviceManager/rest/210235843910E6000009/disk/0Response: {
"data": {
"ABRASIONRATE": "0",
"AUTOLOCKSTATUS": "true",
"BANDWIDTH": "6000",
"CAPACITYUSAGE": "0",
"DISKFORM": "2",
"DISKIFTYPE": "0",
"DISKPORTADDR": "530D17EB4F761000",
"DISKTYPE": "3",
"ELABEL": "[Board Properties]\r\nBoardType=STLZ5S500\r\nBarCode=210235G6BB1000000007\r\nItem=0235G6BB\r\nDescription=PANGEA,STLZ5S500,500GB 7.2K RPM 3G SATA Disk Unit(2.5\")\r\nManufactured=2012-05-31\r\nVendorName=Huawei\r\nIssueNumber=00\r\nCLEICode=\r\nBOM=\r\n",
"ENCRYPTDISKTYPE": "0",
"FIRMWAREVER": "0003",
"HEALTHMARK": "255",
"HEALTHSTATUS": "1",
"ID": "0",
"ISCOFFERDISK": "true",
"ITEM": "0235G6BB",
"KEYEXPIRATIONTIME": "-1",
"LIGHTSTATUS": "0",
"LOCATION": "CTE0.0",
"LOGICTYPE": "1",
"MANUFACTURER": "Seagate",
"MODEL": "ST2000NM0023",
"MULTIPATH": "[\"A\",\"B\"]",
"PARENTID": "0",
"PARENTTYPE": 206,
"POOLID": "",
"POOLNAME": "",
"POOLTIERID": "",
"PROGRESS": "0",
"REDUCESECTORS": "0",
"REMAINLIFE": "0",
"RUNNINGSTATUS": "27",
"RUNTIME": "500",
"SECTORS": "3812691536",
"SECTORSIZE": "520",
"SERIALNUMBER": "Z1X2F480000094381WYN",
"SMARTCACHEPOOLID": "4294967295",
"SPEEDRPM": "7200",
"STORAGEENGINEID": "0",
"TEMPERATURE": "37",
"TYPE": 10,
"barcode": "210235G6BB1000000007",
"dataPath": "0A:normal,
0B:normal",
"formatProgress": "0",
"formatRemainTime": "0",
"eraseProgess": "30",
"manuCapacity": "600000000000",
"performanceLayerId": "",
"performanceLayerName": ""
},

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.5.4.3 (Not Recommended) Interface for Batch Querying Disk Information

Function

This interface is used to batch query basic information about disks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskfromdev

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Optional	string	Enclosure ID.
morpha	Optional	enum	Physical form. **The value is described as follows:** 0: disk; 1: card

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 10: disk
ID	Mandatory	string	Disk ID.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 3: About to fail 17: Single link
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 14: Pre-copy 16: Rebuilding 27: Online 28: Offline 114: Erasing 115: Verifying 117: Removing
DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM SSD
SECTORS	Mandatory	string(uint64)	Number of sectors.
BANDWIDTH	Mandatory	string(uint64)	Interface bandwidth. **Unit:**Mbit/s

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Parameter	Mandatory/ Conditional	Type	Description
SECTORSIZE	Mandatory	string(uint32)	Sector size. **Unit:**bytes
SPEEDRPM	Mandatory	string(uint32)	Rotational speed. **Unit:**RPM
TEMPERATURE	Mandatory	string(uint32)	Temperature. **Unit:**℃
MODEL	Mandatory	string	Model. **Note:**The format of models varies with providers. For example, the format of a Seagate disk model is as follows: ST +Disk size+Capacity +Primary label +Secondary label +Interface type.
FIRMWAREVER	Mandatory	string	Firmware version.
MANUFACTURER	Mandatory	string	Manufacturer.
SERIALNUMBER	Mandatory	string	SN.
LIGHTSTATUS	Mandatory	string(enum)	Indicator status. **The value is described as follows:** 0: off 1: The location indicator is blinking. 2: The fault indicator is steady on.
LOGICTYPE	Mandatory	string(enum)	Logical type. **The value is described as follows:** 1: free disk 2: member disk 3: hot spare disk 4: cache disk
POOLID	Mandatory	string	Pool ID.
POOLNAME	Mandatory	string	Pool name.

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Parameter	Mandatory/ Conditional	Type	Description
POOLTIERID	Mandatory	string	ID of the tier where the disk resides.
ISCOFFERDISK	Mandatory	string(bool)	Coffer disk or not. **The value is described as follows:** true: yes false: no
RUNTIME	Mandatory	string(uint32)	Number of operating days. **Unit:**day
PROGRESS	Mandatory	string(uint32)	Progresses of reconstruction, copyback, pre-copy, and destruction. **Unit:**%
barcode	Mandatory	string	Huawei 21 code.
CAPACITYUSAGE	Mandatory	string(uint32)	Capacity usage. **Unit:**%
MULTIPATH	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.
HEALTHMARK	Mandatory	string(uint32)	Health score of the disk.
DISKIFTYPE	Mandatory	string(enum)	Disk interface type. **The value is described as follows:** 0: Not Available 1: FC SSD 2: SAS SSD 3: NL-SAS SSD 4: SATA SSD 5: SATA2 SSD 6: SATA3 SSD

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Parameter	Mandatory/ Conditional	Type	Description
DISKFORM	Mandatory	string(enum)	Disk dimensions. **The value is described as follows:** 0: unknown 1: 5.25 inch 2: 3.5 inch 3: 2.5 inch 4: 1.8 inch
DISKPORTADDR	Mandatory	string	The value varies with the disk interface type. **The value is described as follows:** FC: WWN of a Fibre Channel port SAS: SAS address (a 16-digit hexadecimal number) SATA: The parameter is left empty.
SMARTCACHEPOOLID	Mandatory	string	ID of the SmartCache pool where the disk resides (This parameter is configured for cache disks.).
ABRASIONRATE	Mandatory	string(int)	Wear (Wear is the percentage of used service life to total service life.). **Unit:**%
REMAINLIFE	Mandatory	string(int)	Remaining service life. **Unit:**days
formatProgress	Conditional	string(int)	Formatting progress. **Unit:**% **Note:**This parameter is returned only when the formatting progress is a valid value.

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Parameter	Mandatory/ Conditional	Type	Description
formatRemainTime	Conditional	string(int)	Remaining formatting time. **Unit:**seconds **Note:**This parameter is returned only when the formatting progress is a valid value.
AUTOLOCKSTATUS	Mandatory	string(bool)	Disk AK switch status.
KEYEXPIRATIONTIME	Mandatory	string(uint64)	Self-encrypting disk key expiration time.
ENCRYPTDISKTYPE	Mandatory	string(enum)	Encryption type. **The value is described as follows:** 0: common disk 1: self-encrypting disk
STORAGEENGINEID	Mandatory	string	Storage engine ID.
ITEM	Mandatory	string	Disk BOM.
ELABEL	Mandatory	string	Electronic label
REDUCESECTORS	Mandatory	string(int)	Number of reduced sectors. **Note:**The field is not used.
eraseProgess	Mandatory	uint32	Progress of data erasure. **The value is described as follows:** 0..100
manuCapacity	Mandatory	string(uint64)	Capacity provided by the manufacturer (1 GB = 1000 x 1000 x 1000 bytes).
diskDataPath	Mandatory	string	Disk path information. **The value is described as follows:** A0 controller ID|B0 controller ID, A1 controller ID|B1 controller ID, and so on.

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Example

- Query the information of all disks in a storage array.

```
Request: GET/deviceManager/rest/2102358439l0E6000009/diskResponse: {
   "data": [
      {
         "ABRASIONRATE": "0",
         "AUTOLOCKSTATUS": "true",
         "BANDWIDTH": "6000",
         "CAPACITYUSAGE": "0",
         "DISKFORM": "2",
         "DISKIFTYPE": "0",
         "DISKPORTADDR": "530D17EB4F761000",
         "DISKTYPE": "3",
         "ELABEL": "[
            BoardProperties
         ]\r\nBoardType=STLZ5S500\r\nBarCode=210235G6BB1000000007\r\nItem=0235G6BB\r
\nDescription=PANGEA,
         STLZ5S500,
         500GB7.2KRPM3GSATADiskUnit(2.5\")\r\nManufactured=2012-05-31\r
\nVendorName=Huawei\r\nIssueNumber=00\r\nCLEICode=\r\nBOM=\r\n",
         "ENCRYPTDISKTYPE": "0",
         "FIRMWAREVER": "0003",
         "HEALTHMARK": "255",
         "HEALTHSTATUS": "1",
         "ID": "0",
         "ISCOFFERDISK": "true",
         "ITEM": "0235G6BB",
         " KEYEXPIRATIONTIME": "-1",
         "LIGHTSTATUS": "0",
         "LOCATION": "CTE0.0",
         "LOGICTYPE": "1",
         "MANUFACTURER": "Seagate",
         "MODEL": "ST2000NM0023",
         "MULTIPATH": "[
            \"A\",
            \"B\"
         ]",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "POOLID": "",
         "POOLNAME": "",
         "POOLTIERID": "",
         "PROGRESS": "0",
         "REDUCESECTORS": "0",
         "REMAINLIFE": "0",
         "RUNNINGSTATUS": "27",
         "RUNTIME": "500",
         "SECTORS": "3812691536",
         "SECTORSIZE": "520",
         "SERIALNUMBER": "Z1X2F480000094381WYN",
         "SMARTCACHEPOOLID": "4294967295",
         "SPEEDRPM": "7200",
         "STORAGEENGINEID": "0",
         "TEMPERATURE": "37",
         "TYPE": 10,
         "barcode": "210235G6BB1000000007",
         "dataPath": "0A:normal,
          0B:normal",
         "formatProgress": "0",
         "formatRemainTime": "0",
         "eraseProgess": "30",
         "manuCapacity": "600000000000"
      },
      ...
   ],
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.5.5 Others

2.6.5.5.1 Interface for Destroying Data of a Single Disk

Function

The interface is used to destroy data of a single disk.

HighRisk

You are about to erase data on disks in a specified list. The erased data cannot be restored and the disks may fail to be reconnected with the system. To obtain the final data erasure result, export data erasure records or view data erasure operation logs. This operation will power on-off the disk. Multiple data erasing modes are supported, and the processes may take several minutes to several hours depending on different modes and parameters. Suggestion: Before performing this operation, confirm that you need to erase the data on disks in the list and check whether the disks are still in use.
You are about to erase data on disks in a specified list and verify erased data. This operation will permanently erase data on disks in the list and cannot be undone. The disks may fail to be reconnected to the system. Besides, it takes a long time to verify erased data. To obtain the final data erasure result, export data erasure records or view data erasure operation logs. This operation will power on-off the disk. Multiple data erasing modes are supported, and the processes may take several minutes to several hours depending on different modes and parameters. Suggestion: Before performing this operation, confirm that you need to erase data on disks in the list and the data is no longer required. Estimate the time required for verifying erased data, and then determine whether to select the verification function or select a proper proportion of data to be verified. For SSDs, about 200 MB to 350 MB data can be verified per second.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/disk/erase_autolock_disk_data

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	ID list of the disks that will start erasing data.
eraseAction	Optional	enum	Data erasure mechanism. **The value is described as follows:** 0:overwrite 1:block 2:cryptographic **Default:**block
eraseStandards	Optional	enum	Data erasure standard. **The value is described as follows:** 0:dod(e) 1:dod(ece) 2:vsitr 3:custom **Default:**dod(e)
eraseVerify	Optional	bool	Whether to verify erased data. **The value is described as follows:** 0:no 1:yes **Default:**0
eraseCount	Optional	uint32	Times of erasing overwrites. **The value is described as follows:** 1..15 **Default:**1
erasePatternList	Optional	array	Pattern list. **Default:**r **Length:**10

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Parameter	Mandatory/Optional/Conditional	Type	Description
eraseVerifyDataPercentage	Optional	uint32	Percentage of erased data to be verified to the total capacity of a disk. **The value is described as follows:** 1..100 **Default:**10

Result

N/A

Example

- Destroying data of the disk whose ID is "20".

```
Request: PUT /deviceManager/rest/210235843910E6000009/disk/erase_autolock_disk_data
{
    "ID": "20"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.5.5.2 Interface for Turning On or Off the Disk Locating Indicator

Function

This interface is used to turn on or off the disk locating indicator.

URL

https://${ip}:8088/deviceManager/rest/${deviceId}/disk/set_disk_lithtsw

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Disk ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
LIGHTSTATUS	Mandatory	enum	Locating indicator status. **The value is described as follows:** 0:off 1:location indicator is blinking

Result

N/A

Example

- Turn on or off disk locating indicator.

```
Request: PUT /deviceManager/rest/210235843910E6000009/disk/set_disk_lithtsw
{
    "ID": "1",
    "LIGHTSTATUS": 1
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.6 power

2.6.6.1 Add

2.6.6.2 Delete

2.6.6.3 Modify

2.6.6.4 Query

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2.6.6.4.1 Interface for Batch Querying Power Information

Function

This interface is used to batch query basic information about power modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/power

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 23: power
ID	Mandatory	string	Indicates the power supply ID.
NAME	Mandatory	string	Indicates the power supply name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 9: inconsistent 11: no input
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 27: online 28: offline
TEMPERATURE	Mandatory	string(uint32)	Temperature.
POWERTYPE	Mandatory	string(enum)	Type of the power supply. **The value is described as follows:** 0: DC 1: AC 2: HV
INPUTVOLTAGE	Mandatory	string(uint32)	Input voltage.
OUTPUTVOLTAGE	Mandatory	string(uint32)	Output voltage.
MANUFACTURER	Mandatory	string	Manufacturer.
MODEL	Mandatory	string	Model.
VERSION	Mandatory	string	Version.
PRODUCEDATE	Mandatory	string	Production date.
SERIALNUMBER	Mandatory	string	SN.
BUNDLEID	Conditional	string	ID of the slot for integrated hardware. Non-integrated hardware is deployed if the field is left empty.

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Parameter	Mandatory/ Conditional	Type	Description
BOMCODE	Mandatory	string	BOM code.
elabel	Mandatory	string	Electronic label.
sn	Mandatory	string	Serial number.

Example

- Batch querying all power modules.

```
Request: GET /deviceManager/rest/210235843910E6000009/power

Response: {
   "data": [
      {
         "BOMCODE": "02270132",
         "BUNDLEID": "0",
         "HEALTHSTATUS": "11",
         "ID": "0.0B.0",
         "INPUTVOLTAGE": "0",
         "LOCATION": "CTE0.PSU 0",
         "MANUFACTURER": "VAPEL",
         "MODEL": "HSP960-D1205D",
         "NAME": "PSU 0",
         "OUTPUTVOLTAGE": "0",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "POWERTYPE": "0",
         "PRODUCEDATE": "2014-05-03",
         "RUNNINGSTATUS": "28",
         "SERIALNUMBER": "21022701328NE5000004",
         "TEMPERATURE": "0",
         "TYPE": 23,
         "VERSION": "11",
         "elabel": "[Board Properties]\nBoardType=STLZA1PWR
\nBarCode=210235855110E5000120\nItem=02358551\nDescription=Assembling
Components,PANGEA,STLZA1PWR,Battery Backup
Unit,V2R1C00\nManufactured=2014-06-01\nVendorName=Huawei\nIssueNumber=00\nCLEICode=
\nBOM=\n",
         "sn": "210235855110E5000120"
      },

   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.6.4.2 Interface for Querying Power Information

Function

This interface is used to query basic information about a power module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/power/${id}

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Indicates the power supply ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 23: power
ID	Mandatory	string	Indicates the power supply ID.
NAME	Mandatory	string	Indicates the power supply name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 9: inconsistent 11: no input

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 27: online 28: offline
TEMPERATURE	Mandatory	string(uint32)	Temperature.
POWERTYPE	Mandatory	string(enum)	Type of the power supply. **The value is described as follows:** 0: DC 1: AC 2: HV
INPUTVOLTAGE	Mandatory	string(uint32)	Input voltage.
OUTPUTVOLTAGE	Mandatory	string(uint32)	Output voltage.
MANUFACTURER	Mandatory	string	Manufacturer.
MODEL	Mandatory	string	Model.
VERSION	Mandatory	string	Version.
PRODUCEDATE	Mandatory	string	Production date.
SERIALNUMBER	Mandatory	string	SN.
BUNDLEID	Conditional	string	ID of the slot for integrated hardware. Non-integrated hardware is deployed if the field is left empty.
BOMCODE	Mandatory	string	BOM code.
elabel	Mandatory	string	Electronic label.
sn	Mandatory	string	Serial number.

Example

- Querying basic information about the power module whose ID is 0.0A.0.

  ```
  Request: GET /deviceManager/rest/210235843910E6000009/power/0.0A.0
  ```

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```
Response: {
    "data": {
        "BOMCODE": "02270132",
        "BUNDLEID": "0",
        "HEALTHSTATUS": "11",
        "ID": "0.0A.0",
        "INPUTVOLTAGE": "0",
        "LOCATION": "CTE0.PSU 0",
        "MANUFACTURER": "VAPEL",
        "MODEL": "HSP960-D1205D",
        "NAME": "PSU 0",
        "OUTPUTVOLTAGE": "0",
        "PARENTID": "0",
        "PARENTTYPE": 206,
        "POWERTYPE": "0",
        "PRODUCEDATE": "2014-05-03",
        "RUNNINGSTATUS": "28",
        "SERIALNUMBER": "21022701328NE5000004",
        "TEMPERATURE": "0",
        "TYPE": 23,
        "VERSION": "11",
        "elabel": "[Board Properties]\nBoardType=STLZA1PWR
\nBarCode=210235855110E5000120\nItem=02358551\nDescription=Assembling
Components,PANGEA,STLZA1PWR,Battery Backup
Unit,V2R1C00\nManufactured=2014-06-01\nVendorName=Huawei\nIssueNumber=00\nCLEICode=
\nBOM=\n",
        "sn": "210235855110E5000120"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.6.4.3 Interface for Querying the Number of Power Supplies

Function

This interface is used to query the number of power supplies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/POWER/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	uint32	Number of power supplies.

Example

- Querying the number of power supplies whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/POWER/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "1"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.6.5 Others

2.6.7 bbu

2.6.7.1 Add

2.6.7.2 Delete

2.6.7.3 Modify

2.6.7.4 Query

2.6.7.4.1 Interface for Batch Querying Backup Power Module Information

Function

This interface is used to batch query basic information about backup power modules.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/backup_power

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type of the managed object. **The value is described as follows:** 210: BBU
ID	Mandatory	string	ID of the backup power module.
NAME	Mandatory	string	Name of the backup power module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 12: low battery

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 27: online 28: offline 48: charging 49: charging completed 50: discharging
BACKUPPOWERTYPE	Mandatory	string(enum)	Model. **The value is described as follows:** 0: backup battery unit (BBU)
VOLTAGE	Mandatory	string(uint32)	Current voltage (Actual voltage = Returned Voltage/10). **Unit:**V/10
REMAINLIFEDAYS	Mandatory	string(uint32)	Remaining service life. **Unit:**days
CHARGETIMES	Mandatory	string(uint32)	Discharge count.
FIRMWAREVER	Mandatory	string	Firmware version.
ELABEL	Mandatory	string	Electronic label.
MANUFACTUREDDATE	Mandatory	string	Data of production.
CONTROLLERID	Mandatory	string	Controller ID.
BUNDLEID	Mandatory	string	Non-integrated hardware is deployed if the parameter is left empty. ID of the slot for integrated hardware.
sn	Mandatory	string	Serial number.

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Example

- Batch querying all backup power modules of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/backup_power

Response: {
   "data": [
      {
         "BACKUPPOWERTYPE": "0",
         "BUNDLEID": "0",
         "CHARGETIMES": "7",
         "CONTROLLERID": "0A",
         "ELABEL": "[Board Properties]\nBoardType=STLZA1PWR
\nBarCode=210235855110E5000120\nItem=02358551\nDescription=Assembling
Components,PANGEA,STLZA1PWR,Battery Backup
Unit,V2R1C00\nManufactured=2014-06-01\nVendorName=Huawei\nIssueNumber=00\nCLEICode=
\nBOM=\n",
         "FIRMWAREVER": "20.06T4",
         "HEALTHSTATUS": "1",
         "ID": "0.0A.0",
         "LOCATION": "CTE0.PSU 0",
         "MANUFACTUREDDATE": "2014-3-25",
         "NAME": "PSU 0",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "REMAINLIFEDAYS": "1971",
         "RUNNINGSTATUS": "27",
         "TYPE": 210,
         "VOLTAGE": "161",
         "sn": "210235855110E5000120"
      },

   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.7.4.2 Interface for Querying Backup Power Module Information

Function

This interface is used to query basic information about a backup power module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/backup_power/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	BBU ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 210: BBU.
ID	Mandatory	string	ID of the backup power module.
NAME	Mandatory	string	Name of the backup power module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 12: low battery
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 27: online 28: offline 48: charging 49: charging completed 50: discharging

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Parameter	Mandatory/ Conditional	Type	Description
BACKUPPOWERTYPE	Mandatory	string(enum)	Model. **The value is described as follows:** 0: backup battery unit (BBU)
VOLTAGE	Mandatory	string(uint32)	Current voltage (Actual voltage = Returned Voltage/10). **Unit:**V/10
REMAINLIFEDAYS	Mandatory	string(uint32)	Remaining service life. **Unit:**days
CHARGETIMES	Mandatory	string(uint32)	Discharge count.
FIRMWAREVER	Mandatory	string	Firmware version.
ELABEL	Mandatory	string	Electronic label.
MANUFACTUREDDATE	Mandatory	string	Data of production.
CONTROLLERID	Mandatory	string	Controller ID.
BUNDLEID	Mandatory	string	Non-integrated hardware is deployed if the parameter is left empty. ID of the slot for integrated hardware.
sn	Mandatory	string	Serial number.

Example

- Querying basic information about the backup power module whose ID is 0.0A.0.

```
Request: GET /deviceManager/rest/210235843910E6000009/backup_power/0.0A.0

Response: {
   "data": {
      "BACKUPPOWERTYPE": "0",
      "BUNDLEID": "0",
      "CHARGETIMES": "7",
      "CONTROLLERID": "0A",
      "ELABEL": "[Board Properties]\nBoardType=STLZA1PWR
\nBarCode=210235855110E5000120\nItem=02358551\nDescription=Assembling
Components,PANGEA,STLZA1PWR,Battery Backup
Unit,V2R1C00\nManufactured=2014-06-01\nVendorName=Huawei\nIssueNumber=00\nCLEICode=
\nBOM=\n",
      "FIRMWAREVER": "20.06T4",
      "HEALTHSTATUS": "1",
      "ID": "0.0A.0",
```

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```
        "LOCATION": "CTE0.PSU 0",
        "MANUFACTUREDDATE": "2014-3-25",
        "NAME": "PSU 0",
        "PARENTID": "0",
        "PARENTTYPE": 206,
        "REMAINLIFEDAYS": "1971",
        "RUNNINGSTATUS": "27",
        "TYPE": 210,
        "VOLTAGE": "161",
        "sn": "210235855110E5000120"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.7.4.3 Interface for Querying the Number of Backup Power Modules

Function

This interface is used to query the number of backup power modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/BACKUP_POWER/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of backup power modules.

Example

- Querying the number of backup power modules whose names contain 1.

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```
Request: GET /deviceManager/rest/210425612544525214 32/BACKUP_POWER/count?filter=NAME:1

{
  "data": {
    "COUNT": "1"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
}
```

2.6.7.5 Others

2.6.8 fan

2.6.8.1 Add

2.6.8.2 Delete

2.6.8.3 Modify

2.6.8.4 Query

2.6.8.4.1 Interface for Batch Querying Fan Control Module Information

Function

This interface is used to batch query basic information about fan control modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fan_ctrl_module

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 306: fan control module
ID	Mandatory	string	Indicates the ID of the fan control module.
NAME	Mandatory	string	Indicates the name of the fan control module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 12: powering on 13: powered off 27: online 28: offline 103: power-on failed
ELABEL	Mandatory	string	Electronic label.
PCBVER	Mandatory	string	PCB version.

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Parameter	Mandatory/ Conditional	Type	Description
sn	Mandatory	string	Serial number.

Example

- Batch querying all fan control modules of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/fan_ctrl_module

Response: {
   "data": [
      {
         "ELABEL": "--",
         "HEALTHSTATUS": "1",
         "ID": "CTE0.C",
         "LOCATION": "CTE0.C",
         "NAME": "ACU.C",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "PCBVER": "VER.B",
         "RUNNINGSTATUS": "27",
         "TYPE": 306,
         "sn": ""
      },

   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.8.4.2 Interface for Batch Querying Fan Information

Function

This interface is used to batch query basic information about fan modules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fan

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 211: fan module
ID	Mandatory	string	Indicates the fan ID.
NAME	Mandatory	string	Fan name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller
PARENTID	Mandatory	string	Enclosure ID or controller ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 3: not running 8: spin down 27: online 28: offline

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Parameter	Mandatory/ Conditional	Type	Description
RUNLEVEL	Mandatory	string(enum)	Increment. **The value is described as follows:** 0: low 1: normal 2: high
ELABEL	Mandatory	string	Electronic label.
BUNDLEID	Mandatory	string	Non-integrated hardware is deployed if the parameter is left empty. ID of the slot for integrated hardware.

Example

- Batch querying all fan modules of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/fan

Response:
{
   "data": [
      {
         "BUNDLEID": "0",
         "ELABEL": "",
         "HEALTHSTATUS": "1",
         "ID": "0.0B.0",
         "LOCATION": "CTE0.PSU 0",
         "NAME": "PSU 0",
         "PARENTID": "0",
         "PARENTTYPE": 206,
         "RUNLEVEL": "0",
         "RUNNINGSTATUS": "2",
         "TYPE": 211
      }, ...
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.8.4.3 Interface for Querying Fan Control Module Information

Function

This interface is used to query basic information about a fan control module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fan_ctrl_module/${id}

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 306: fan control module
ID	Mandatory	string	Indicates the ID of the fan control module.
NAME	Mandatory	string	Indicates the name of the fan control module.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure
PARENTID	Mandatory	string	Enclosure ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 12: powering on 13: powered off 27: online 28: offline 103: power-on failed
ELABEL	Mandatory	string	Electronic label.
PCBVER	Mandatory	string	PCB version.
sn	Mandatory	string	Serial number.

Example

- Querying basic information about the fan control module whose ID is CTE0.C.

```
Request: GET /deviceManager/rest/210235843910E6000009/fan_ctrl_module/CTE0.C

Response: {
   "data": {
      "ELABEL": "--",
      "HEALTHSTATUS": "1",
      "ID": "CTE0.C",
      "LOCATION": "CTE0.C",
      "NAME": "ACU.C",
      "PARENTID": "0",
      "PARENTTYPE": 206,
      "PCBVER": "VER.B",
      "RUNNINGSTATUS": "27",
      "TYPE": 306,
      "sn": ""
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.8.4.4 Interface for Querying Fan Information

Function

This interface is used to query basic information about a fan module.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fan/${id}

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fan ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type of the managed object. **The value is described as follows:** 211: fan module
ID	Mandatory	string	Fan ID.
NAME	Mandatory	string	Fan name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller
PARENTID	Mandatory	string	ID of an enclosure or controller.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 3: not running 8: spin down 27: online 28: offline
RUNLEVEL	Mandatory	string(enum)	Increment. **The value is described as follows:** 0: low 1: normal 2: high
ELABEL	Mandatory	string	Electronic label.
BUNDLEID	Conditional	string	Non-integrated hardware is deployed if the parameter is left empty. ID of the slot for integrated hardware.

Example

- Querying basic information about the fan module whose ID is 0.0B.0.

```
Request: GET /deviceManager/rest/210235843910E6000009/fan/0.0B.0

Response:
{
    "data": {
        "BUNDLEID": "0",
        "ELABEL": "",
        "HEALTHSTATUS": "1",
        "ID": "0.0B.0",
        "LOCATION": "CTE0.PSU 0",
        "NAME": "PSU 0",
        "PARENTID": "0",
        "PARENTTYPE": 206,
        "RUNLEVEL": "0",
        "RUNNINGSTATUS": "2",
        "TYPE": 211
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.6.8.4.5 Interface for Querying the Number of Fans

Function

This interface is used to query the number of fans.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FAN/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of fans.

Example

- Querying the number of fans whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/FAN/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "2"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

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2.6.8.5 Others

2.6.9 port

2.6.9.1 Add

2.6.9.1.1 Interface for Adding a Network Plane Member Association

Function

This interface is used to add a network plane member association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane/create_associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Network plane ID. **The value is described as follows:** 1~1024 **Length:**4
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 213: Ethernet port **Length:**4
associateObjID	Mandatory	string	Associated object ID. **The value is described as follows:** Ethernet port ID. **Length:**128

Result

N/A

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Example

- Adding a network plane member whose ID is "3".

```
Request: POST /deviceManager/rest/210235843710E7000007/netplane/create_associate
{
    "id":"3",
    "associateObjType":"213",
    "associateObjID":"549772722432"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.1.2 Interface for Adding a Route

Function

This interface is used to add a route.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port_route

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PORTID	Conditional	string	Port ID. **Note:**If PORTNAME is not specified, PORTID must be specified.
PORTNAME	Conditional	string	Port name. **Length:**1~255 **Note:**If PORTID is not specified, PORTNAME must be specified.
DESTINATION	Mandatory	string	Destination address.
MASK	Mandatory	string	Destination mask. IPv4 and IPv6 are supported.
GATEWAY	Mandatory	string	IPv4 or IPv6 gateway.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Mandatory	enum	Type. **The value is described as follows:** 0: network segment route 1: host route 2: default route **Note:**The management network port supports only the network segment route and host route.
PORTTYPE	Optional	enum	Port type. **The value is described as follows:** 1: Ethernet port 7: bond port 9: logical port **Default:**1: Ethernet port

Result

Parameter	Mandatory/Conditional	Type	Description
PORTID	Conditional	string	Port ID.
PORTNAME	Mandatory	string	Port name.
DESTINATION	Mandatory	string	Destination address.
MASK	Mandatory	string	Destination mask. **Note:**If TYPE is a host route, the default IPv4 address is 255.255.255.255, and the default IPv6 address prefix is 128. If TYPE is a default route, the IPv4 address is 0.0.0.0, and the IPv6 address is 0.
GATEWAY	Mandatory	string	IPv4 or IPv6 gateway.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Route type. **The value is described as follows:** 0: network segment route 1: host route 2: default route **Note:**The management network port supports only the network segment route and host route.
PORTTYPE	Mandatory	enum	Port type. **The value is described as follows:** 1: Ethernet port 7: bond port 9: logical port
TABLETYPE	Conditional	string(enum)	Route table type. **The value is described as follows:** 1: default route table and strategy route table 2: strategy route table 3: default route table

Usage Guidelines

Do not add routes to the management network port and maintenance network port.

Example

- Adding a default route.

```
Request: POST /deviceManager/rest/210235843710E7000007/eth_port_route
{
   "DESTINATION": "0.0.0.0",
   "GATEWAY": "1.0.0.1",
   "MASK": "0.0.0.0",
   "PORTID": "4278321154",
   "PORTTYPE": 1,
   "TYPE": 2
}

Response: {
```

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```
    "data": {
        "DESTINATION": "0.0.0.0",
        "GATEWAY": "1.0.0.1",
        "MASK": "0.0.0.0",
        "PORTNAME": "CTE0.A7.P0",
        "PORTTYPE":"1",
        "RUNNINGSTATUS":"",
        "TYPE": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a network segment route.

```
Request: POST /deviceManager/rest/210235843710E7000007/eth_port_route
{
    "DESTINATION": "8.47.0.0",
    "GATEWAY": "8.47.64.1",
    "MASK": "255.255.224.0",
    "PORTID": "4278321154",
    "TYPE": 0
}

Response: {
    "data": {
        "DESTINATION": "8.47.0.0",
        "GATEWAY": "8.47.64.1",
        "MASK": "255.255.224.0",
        "PORTNAME": "CTE0.A7.P0",
        "PORTTYPE":"1",
        "RUNNINGSTATUS": "",
        "TYPE":  "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a host route.

```
Request: POST /deviceManager/rest/210235843710E7000007/eth_port_route
{
    "DESTINATION": "1.0.0.2",
    "GATEWAY": "1.0.0.1",
    "MASK": "255.255.255.255",
    "PORTID": "4278321154",
    "PORTTYPE": 1,
    "TYPE": 1
}

Response: {
    "data": {
        "DESTINATION": "1.0.0.2",
        "GATEWAY": "1.0.0.1",
        "MASK": "255.255.255.255",
        "PORTNAME": "CTE0.A7.P0",
        "PORTTYPE":"1",
        "RUNNINGSTATUS":"",
        "TYPE": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
 }
```

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2.6.9.1.3 Interface for Adding Member association from Failover Group

Function

This interface is used to add a failover group member.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port 235: bond port 280: VLAN
ASSOCIATEOBJID	Mandatory	string	ID of the associated object.
ID	Mandatory	string	ID of the failover group.

Result

N/A

Example

- Adding the failover group member whose ID is 4.

```
Request: POST /deviceManager/rest/210235843710E7000007/failovergroup/associate
{
    "ID":"4",
    "ASSOCIATEOBJTYPE":213,
    "ASSOCIATEOBJID":"549772722432"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.6.9.1.4 Interface for Adding Members to the Remote IP Address List of an IPsec Policy

Function

Add a member to the remote IP address list of the IPsec policy.

HighRisk

You are about to add members to the remote IP address list of the IPsec policy.

If the logical port corresponding to the IPsec policy is in use, services carried on the logical port will fluctuate for a short period of time.

Suggestion: Before performing this operation, ensure that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/add_ipsec_policy_member

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255
remoteIP	Mandatory	string	Remote IP address. **The value is described as follows:** Valid IPv4 address **Length:**64

Result

N/A

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Application Scope

For internal use by R&D engineers.

Example

- Add a member to the remote IP address list of the IPsec policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/add_ipsec_policy_member
{
    "name": "testIPsec1",
    "remoteIP": "11.11.11.11"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.1.5 Interface for Creating a Bond Port

Function

This interface is used to create a bond port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Bond port name. **The value is described as follows:** The value contains letters, digits, periods (.), underscores (_), and hyphens (-). **Length:**1~31 **Note:** If the NAME parameter is not delivered, the system will automatically generate a name combining the controller number and the controller's existing bond port number. For example, "bond_0_1" indicates bond port 1 of controller 0.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
PORTIDLIST	Mandatory	array	ID of the Ethernet port. Use commas (,) to separate multiple IDs from one other.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 235: bond port
ID	Mandatory	string	Bond port ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Bond port name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 4: partially damaged
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down
PORTIDLIST	Mandatory	string(array)	List of Ethernet ports.
MTU	Mandatory	string(uint32)	Maximum transmission unit.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 prefix.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Conditional	string(enum)	Operating system (OS) type of the port service. The port is used by the storage system OS by default. **The value is described as follows:** 1: applies to the storage operating system. 2: applies to the VM system. **Note:** This field is returned for VMs only. This field is not supported by OceanStor Dorado V3 all-flash array series. This field is not supported by OceanStor 2200 V3, 2600 V3, and 2600 V3 for Video.
DEVICENAME	Conditional	string	Device name of the port. **Note:** This field is returned for VMs only. This field is not supported by OceanStor Dorado V3 all-flash array series. This field is not supported by OceanStor 2200 V3, 2600 V3, and 2600 V3 for Video.

Usage Guidelines

Do not use the Ethernet ports on the FCoE interface module to create bond ports.

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Example

- Creating a bond port.

```
Request: POST /deviceManager/rest/210235843910E6000009/bond_port
{
   "PORTIDLIST": [
      "131074",
      "131075"
   ],
   "NAME": "bond"
}

Response: {
   "data": {
      "DEVICENAME": "",
      "HEALTHSTATUS": "0",
      "ID": "139009",
      "IPV4ADDR": "",
      "IPV4MASK": "",
      "IPV6ADDR": "",
      "IPV6MASK": "",
      "MTU": "0",
      "NAME": "bond",
      "PORTIDLIST": "[\"131074\", \"131075\"]",
      "RUNNINGSTATUS": "33",
      "TYPE": 235,
      "USEDTYPE": "-1",
      "numberOfInitiators": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.1.6 Interface for Creating a Failover Group

Function

This interface is used to create a failover group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
FAILOVERGROUPTYPE	Mandatory	enum	Type of the failover group. **The value is described as follows:** 3: customized

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of the failover group. **The value is described as follows:** The value contains only letters, digits, periods (.), underscores (_), and hyphens (-). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~127 **Note:**If this parameter is not delivered, the default value is Customized-FailoverGroup.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: asynchronous 1: synchronous **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
failoverGroupService-Type	Optional	enum	Service type of the failover group. **The value is described as follows:** 0: NAS 3: BGP
failoverGroupIpType	Optional	enum	IP address type of the failover group. **The value is described as follows:** 0: IPv4 **Note:**This parameter is supported and mandatory only when the service type of the failover group is BGP.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 289: failover group
ID	Mandatory	string	Failover group ID.
NAME	Mandatory	string	Name of the failover group.
DESCRIPTION	Mandatory	string	Description.
FAILOVERGROUPTYPE	Mandatory	string(enum)	Type of the failover group. **The value is described as follows:** 1: system 2: VLAN 3: customized
failoverGroupService-Type	Mandatory	enum	Service type of the failover group. **The value is described as follows:** 0: NAS 3: BGP
failoverGroupIpType	Conditional	enum	IP address type of the failover group. **The value is described as follows:** 0: IPv4 **Note:**This parameter is returned only when the service type of the failover group is BGP.

Example

- Creating a failover group.

```
Request: POST /deviceManager/rest/210235843910E6000009/failovergroup
{
   "DESCRIPTION": "description",
```

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```
    "FAILOVERGROUPTYPE": 3,
    "NAME": "FAILOVERGROUP002"
}
Response:
{
    "data": {
        "ID": "1",
        "DESCRIPTION": "description",
        "FAILOVERGROUPTYPE": 3,
        "NAME": "FAILOVERGROUP002",
        "TYPE":289
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.1.7 Interface for Creating a Logical Port

Function

This interface is used to create a logical port.

HighRisk

You are about to create a logical port.

If a port is faulty, the logical port cannot be accessed because failover is not supported.

Suggestion:

Before performing this operation, check whether the failover function is required. If yes, set the data protocol to NFS, CIFS, or NFS_and_CIFS.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
IPV4ADDR	Conditional	string	Logical port IPv4 address. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv4 address is added.
IPV4MASK	Conditional	string	Logical port IPv4 mask. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv4 address is added.
IPV4GATEWAY	Optional	string	Logical port IPv4 gateway. **The value is described as follows:** -
IPV6ADDR	Conditional	string	Logical port IPv6 address. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv6 address is added.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IPV6MASK	Conditional	string	Logical port IPv6 prefix. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv6 address is added.
IPV6GATEWAY	Optional	string	Logical port IPv6 gateway. **The value is described as follows:** -
ROLE	Optional	enum	Role of a logical port. **The value is described as follows:** 1: management 2: service 3: management + service 4: replication **Default:**2: service

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Parameter	Mandatory/Optional/Conditional	Type	Description
SUPPORTPROTOCOL	Optional	enum	Supported protocol. **The value is described as follows:** 0: NONE 1: NFS (bit 0 for the NFS switch) 2: CIFS (bit 1 for the CIFS switch) 3: NFS + CIFS 4: iSCSI (bit 2 for the iSCSI switch) 8: FC/FCoE (bit 3 for the FC/FCoE switch) 64: NVMe (bit 6 for the NVMe switch) 512: BGP (bit 9 for the BGP switch) If the bit switch is 0, the protocol is not supported. If the bit switch is 1, the protocol is supported. It is convenient for expanding subsequent protocols.

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Parameter	Mandatory/Optional/Conditional	Type	Description
HOMEPORTTYPE	Mandatory	enum	Indicates the parent port type. [Note:To create a VIP LIF, you need to associate it with a failover group.] **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP **Note:**When HOMEPORTTYPE is set to VIP, HOMEPORTID and HOMEPORTNAME do not need to be delivered, and HOMECONTROLLERID must be delivered.
HOMEPORTID	Conditional	string	ID of the parent port. **The value is described as follows:** - **Note:**Only one of HOMEPORTID and HOMEPORTNAME can be delivered.
HOMEPORTNAME	Conditional	string	Name of the parent port. **The value is described as follows:** - **Note:**Only one of HOMEPORTID and HOMEPORTNAME can be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
HOMECONTROLLERID	Conditional	string	Owning controller. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**64 **Note:**This parameter is mandatory when HOMEPORTTYPE is set to VIP.
OPERATIONALSTATUS	Optional	bool	Activated. [NOTE:This parameter is supported only by logical ports of the NFS, CIFS, and NFS_and_CIFS protocols or management roles.] **The value is described as follows:** true: activated false: not activated
ADDRESSFAMILY	Mandatory	enum	Internet protocol version. **The value is described as follows:** 0: IPv4 1: IPv6

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISPRIVATE	Optional	bool	Whether it is configurable. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** true: not configurable false: configurable **Default:**false: configurable
FAILOVERGROUPID	Optional	string	ID of the owning failover group. **The value is described as follows:** -
CANFAILOVER	Optional	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
FAILBACKMODE	Optional	enum	Failback mode. **The value is described as follows:** 0: not supported 1: manual 2: auto **Default:**2: auto
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ddnsStatus	Optional	enum	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Default:**1: enabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".
dnsZoneName	Optional	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255
listenDnsQueryEnabled	Optional	enum	Whether to listen for DNS query requests. **The value is described as follows:** 0: disabled 1: enabled **Default:**0: NO
HOMESITEWWN	Optional	string	Home site WWN of the LIF. **The value is described as follows:** - **Length:**64

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 279: LIF
ID	Mandatory	string	ID of a logical port. **The value is described as follows:** -
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 10: Link up 11: Link down 53: Initializing
IPV4ADDR	Mandatory	string	Logical port IPv4 address. **The value is described as follows:** -
IPV4MASK	Mandatory	string	Logical port IPv4 mask. **The value is described as follows:** -
IPV4GATEWAY	Mandatory	string	Logical port IPv4 gateway. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
IPV6MASK	Mandatory	string	Logical port IPv6 prefix. **The value is described as follows:** -
IPV6ADDR	Mandatory	string	Logical port IPv6 address. **The value is described as follows:** -
IPV6GATEWAY	Mandatory	string	Logical port IPv6 gateway. **The value is described as follows:** -
ROLE	Mandatory	string(enum)	Role of a logical port. **The value is described as follows:** 1: management 2: service 3: management + service

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Parameter	Mandatory/ Conditional	Type	Description
SUPPORTPROTOCOL	Mandatory	string(uint32)	Supported protocol. **The value is described as follows:** 0: NONE 1: NFS (bit 0 for the NFS switch) 2: CIFS (bit 1 for the CIFS switch) 3: NFS + CIFS 4: iSCSI (bit 2 for the iSCSI switch) 8: FC/FCoE (bit 3 for the FC/FCoE switch) 512: BGP (bit 9 for the BGP switch) If the bit switch is 0, the protocol is not supported. If the bit switch is 1, the protocol is supported. It is convenient for expanding subsequent protocols. **Note:**Currently, this field is not supported.
HOMEPORTTYPE	Mandatory	string(enum)	Type of the parent port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
HOMEPORTID	Mandatory	string	ID of the parent port. **The value is described as follows:** -
HOMEPORTNAME	Mandatory	string	Name of the parent port. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
HOMECONTROLLERID	Mandatory	string	ID of the parent controller. **The value is described as follows:** -
CURRENTPORTID	Mandatory	string	ID of the current port. **The value is described as follows:** -
CURRENTPORTNAME	Mandatory	string	Name of the current port. **The value is described as follows:** -
CURRENTCONTROLLERID	Mandatory	string	ID of the current controller. **The value is described as follows:** -
CURRENTPORTTYPE	Mandatory	string(enum)	Type of the current port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
ADDRESSFAMILY	Mandatory	string(enum)	TCP/IP version. **The value is described as follows:** 0: IPv4 1: IPv6
FAILBACKMODE	Mandatory	enum	Failback mode. **The value is described as follows:** 0: not supported 1: manual 2: auto

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERGROUPID	Mandatory	string	ID of the owning failover group. **The value is described as follows:** -
FAILOVERGROUPNAME	Mandatory	string	Name of the owning failover group. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
ISPRIVATE	Mandatory	string(bool)	Whether it is configurable. **The value is described as follows:** true: not configurable false: configurable
MANAGEMENTACCESS	Mandatory	string	Manages the access mode. **The value is described as follows:** -
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
ddnsStatus	Mandatory	string(enum)	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".
dnsZoneName	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.
listenDnsQueryEnabled	Conditional	string(enum)	Whether to listen for DNS query requests. **The value is described as follows:** 0: disabled 1: enabled
isDefLif	Mandatory	bool	Whether it is created by default. **The value is described as follows:** false: not created by default true: created by default

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Parameter	Mandatory/ Conditional	Type	Description
LogicalType	Mandatory	enum	Logical type. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
HOMESITEWWN	Mandatory	string	Home site WWN of the LIF. **The value is described as follows:** -

Example

- Configure an IPv4 logical port.

```
Request: POST /deviceManager/rest/210235843910E6000009/lif
{
   "ADDRESSFAMILY": 0,
   "HOMEPORTNAME": "CTE0.A.IOM1.P2",
   "HOMEPORTTYPE": 1,
   "IPV4ADDR": "2.2.2.2",
   "IPV4GATEWAY": "",
   "IPV4MASK": "255.0.0.0",
   "NAME": "LIF01",
   "SUPPORTPROTOCOL": 4
}

Response: {
   "data": {
      "ADDRESSFAMILY": "0",
      "CANFAILOVER": "false",
      "CURRENTCONTROLLERID": "0A",
      "CURRENTPORTID": "281475791593472",
      "CURRENTPORTNAME": "CTE0.A.MGMT",
      "CURRENTPORTTYPE": "1",
      "FAILBACKMODE": "0",
      "FAILOVERGROUPID": "0",
      "FAILOVERGROUPNAME": "--",
      "HOMECONTROLLERID": "0A",
      "HOMEPORTID": "281475791593472",
      "HOMEPORTNAME": "CTE0.A.MGMT",
      "HOMEPORTTYPE": "1",
      "HOMESITEWWN": "",
      "ID": "4614219297499119616",
      "IPV4ADDR": "8.46.16.66",
      "IPV4GATEWAY": "8.46.0.1",
      "IPV4MASK": "255.255.224.0",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISPRIVATE": "false",
      "LogicalType": "2",
      "MANAGEMENTACCESS": "--",
      "NAME": "CTE0.A.MGMT.V4",
      "OPERATIONALSTATUS": "true",
```

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```
        "ROLE": "6",
        "RUNNINGSTATUS": "10",
        "SUPPORTPROTOCOL": "0",
        "TYPE": 279,
        "ddnsStatus": "0",
        "dnsZoneName": "",
        "isDefLif": "true",
        "version": "0",
        "vstoreId": "-1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Configuring an IPv6 logical port.


```
Request: POST /deviceManager/rest/210235843910E6000009/lif
{
    "ADDRESSFAMILY": 1,
    "HOMEPORTNAME": "bond0",
    "HOMEPORTTYPE": 7,
    "IPV6ADDR": "abc::1",
    "IPV6GATEWAY": "ab::1",
    "IPV6MASK": "1",
    "NAME": "LIF_OF_IPV6"
}

Response:
{
    "data": {
        "ADDRESSFAMILY": "1",
        "CANFAILOVER": "true",
        "CURRENTCONTROLLERID": "0B",
        "CURRENTPORTID": "549772730113",
        "CURRENTPORTNAME": "bond0",
        "CURRENTPORTTYPE": "7",
        "FAILBACKMODE": "--",
        "FAILOVERGROUPID": "0",
        "FAILOVERGROUPNAME": "--",
        "HOMECONTROLLERID": "0B",
        "HOMEPORTID": "549772730113",
        "HOMEPORTNAME": "bond0",
        "HOMEPORTTYPE": "7",
        "ID": "4278321154",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "abc::1",
        "IPV6GATEWAY": "",
        "IPV6MASK": "1",
        "ISPRIVATE": "false",
        "MANAGEMENTACCESS": "--",
        "NAME": "LIF_OF_IPV6",
        "OPERATIONALSTATUS": "true",
        "ROLE": "2",
        "RUNNINGSTATUS": "53",
        "SUPPORTPROTOCOL": "4",
        "TYPE": 279,
        "ddnsStatus": "--",
        "dnsZoneName": "--",
        "isDefLif": "false",
        "LogicalType": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
```


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```
    }
}
```

- Configure a logical port of the VIP type.

```
Request: POST /deviceManager/rest/2102353JMM10KA000002/lif
{
     "ADDRESSFAMILY": "0",
     "FAILOVERGROUPID": "1",
     "HOMECONTROLLERID": "0A",
     "HOMEPORTTYPE": "25",
     "IPV4ADDR": "5.5.5.5",
     "NAME": "LIF04",
     "ROLE": "2",
     "SUPPORTPROTOCOL": "1"
}

Response: {
    "data": {
        "ADDRESSFAMILY": "0",
        "CANFAILOVER": "true",
        "CURRENTCONTROLLERID": "0A",
        "CURRENTPORTID": "7036874417766401",
        "CURRENTPORTNAME": "VIP_PORT_0_1",
        "CURRENTPORTTYPE": "25",
        "FAILBACKMODE": "2",
        "FAILOVERGROUPID": "1",
        "FAILOVERGROUPNAME": "bgpfg",
        "HOMECONTROLLERID": "0A",
        "HOMEPORTID": "7036874417766401",
        "HOMEPORTNAME": "VIP_PORT_0_1",
        "HOMEPORTTYPE": "25",
        "HOMESITEWWN": "",
        "ID": "4614219297510653957",
        "IPV4ADDR": "5.5.5.5",
        "IPV4GATEWAY": "",
        "IPV4MASK": "255.255.255.255",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISPRIVATE": "false",
        "LogicalType": "0",
        "MANAGEMENTACCESS": "--",
        "NAME": "LIF04",
        "OPERATIONALSTATUS": "true",
        "ROLE": "2",
        "RUNNINGSTATUS": "33",
        "SUPPORTPROTOCOL": "1",
        "TYPE": 279,
        "ddnsStatus": "1",
        "dnsZoneName": "",
        "isDefLif": "false",
        "listenDnsQueryEnabled": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.1.8 Interface for Creating a Route for the Container Network Plane

Function

Create a route for the container network plane.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane_route

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
parentID	Mandatory	string	Network plane ID. **The value is described as follows:** 1..1024 **Length:**128
destination	Mandatory	string	Destination network segment. **The value is described as follows:** The value is an IP address in character string format. **Length:**64
mask	Mandatory	string	Subnet mask. **The value is described as follows:** Mask of the IP address. **Length:**64
gateWay	Mandatory	string	Gateway address. **The value is described as follows:** The value is an IP address in character string format. **Length:**64

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Result

Parameter	Mandatory/ Conditional	Type	Description
parentID	Mandatory	string	Network plane ID. **The value is described as follows:** 1..1024
destination	Mandatory	string	Destination network segment. **The value is described as follows:** The value is an IP address in character string format.
mask	Mandatory	string	Subnet mask. **The value is described as follows:** The value is an IP address in character string format.
gateWay	Mandatory	string	Gateway address. **The value is described as follows:** The value is an IP address in character string format.

Example

- Create a route for the container network plane.

```
Request: POST /deviceManager/rest/210235843910E6000009/netplane_route
{
   "parentID": "1",
   "destination": "199.168.10.0",
   "mask": "255.255.255.0",
   "gateWay": "192.168.10.100"
}

Response: {
   "data": {
      "destination": "199.168.10.0",
      "gateWay": "192.168.10.100",
      "mask": "255.255.255.0",
      "parentID": "1",
      "objtype": "316"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.1.9 Interface for Creating a VLAN

Function

This interface is used to create a VLAN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TAG	Mandatory	uint32	VLAN tag. **The value is described as follows:** [1,4094]
PORTTYPE	Mandatory	enum	Port type. **The value is described as follows:** 1: 1: ETH port 2: 7: bond port
PORTID	Mandatory	string	Port ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 1: 280: VLAN
ID	Mandatory	string	VLAN ID.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: 0: unknown 2: 1: normal 3: 2: running 4: 10: link up 5: 11: link down 6: 53: Initializing
TAG	Mandatory	string(uint32)	VLAN tag. **The value is described as follows:** [1,4094]
MTU	Mandatory	string(uint32)	Maximum transmission unit. **The value is described as follows:** The value of an MTU cannot exceed that of the MTU on the corresponding physical port, and must be in a range from 1500 to 9000.
PORTTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: 1: ETH port 2: 7: bond port
PORTID	Mandatory	string	Port ID.
fatherDrvType	Mandatory		Driver type of the VLAN parent port. **The value is described as follows:** 1: ETH interface module; 2: RoCE interface module.

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Usage Guidelines

Do not use the management network port or maintenance network port to create a VLAN.

Example

- Creating a VLAN based on Ethernet ports.

```
Request: POST /deviceManager/rest/210235843910E6000009/vlan
{
   "TAG": "123",
   "PORTTYPE": 1,
   "PORTID": "131328"
}

Response:
{
   "data": {
      "ID": "4261543936",
      "MTU": "1500",
      "NAME": "CTE0.A.IOM1.P0.123",
      "PORTID": "131328",
      "PORTTYPE": "1",
      "RUNNINGSTATUS": "53",
      "TAG": "123",
      "TYPE": 280,
      "fatherDrvType": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.1.10 Interface for Creating an IP Address Range

Function

Create an IP address range.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/IP_RANGE

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}
parentType	Mandatory	enum	Indicates the parent object type of the IP address range. **The value is described as follows:** Currently, only the network plane is supported. The value is 57888. **Length:**4
parentName	Mandatory	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}

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Parameter	Mandatory/Optional/Conditional	Type	Description
ipv4Range	Conditional	string	IPv4 address range. **The value is described as follows:** Available start IPv4 address to end IPv4 address. **Length:**1-127 **Range:**((25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])-((25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?\d?[0-9]) **Note:**If the value of the addressFamily field is 0, the ipv4Range field must be delivered.
ipv6Range	Conditional	string	IPv6 address range. **The value is described as follows:** Available start IPv6 address to end IPv6 address. **Length:**1-127 **Range:**.* **Note:**If the value of the addressFamily field is 1, the ipv6Range field must be delivered.
addressFamily	Mandatory	uint32	Address family of the IP address range. **The value is described as follows:** 0: IPv4. 1: IPv6. **Length:**4 **Range:**[0-1]{1}

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Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Object type. **The value is described as follows:** 388
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
parentType	Mandatory	enum	Indicates the parent object type of the IP address range. **The value is described as follows:** Currently, only the network plane is supported. The value is 57888.
parentID	Mandatory	string	Parent object ID of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
parentName	Mandatory	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
ipv4Range	Mandatory	string	IPv4 address range. **The value is described as follows:** The value ranges from the start IPv4 address to the end IPv4 address.
ipv6Range	Mandatory	string	IPv6 address range. **The value is described as follows:** The value ranges from the start IPv6 address to the end IPv6 address.
addressFamily	Mandatory	uint32	Address family of the IP address range. **The value is described as follows:** 0: IPv4. 1: IPv6.

Usage Guidelines

An IP address range can be created only on a network plane.

Example

- Create an IP address range.

```
Request: POST /deviceManager/rest/2102353ASCFSLB000006/IP_RANGE
{
    "name": "cnp",
    "parentType": "57888",
    "parentName": "cnp_ipv4",
    "addressFamily": "0",
    "ipv4Range": "192.168.2.101-192.168.2.102"
```

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```
}

Response: {
    "data": {
        "addressFamily": "0",
        "ipv4Range": "192.168.2.101-192.168.2.102",
        "ipv6Range": "",
        "name": "cnp",
        "parentID": "1",
        "parentName": "cnp_ipv4",
        "parentType": 57888,
        "type": 388
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.1.11 Interface for Creating an IPsec Policy

Function

Create an IPsec policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
logicalPortName	Mandatory	string	Name of a logical port. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), periods (.), and hyphens (-). **Length:**255
ipsecMode	Mandatory	enum	Encryption algorithm template. **The value is described as follows:** 0:AES;1:SM4 **Length:**4
psk	Mandatory	string	Pre-shared key. **The value is described as follows:** The value consists of 16 to 127 characters and must contain at least two of the following: lowercase letters, uppercase letters, digits, and special characters. Special characters include `~!@#$ %^&*()-_=+| [{}];:'",<.>/? and spaces. **Length:**127

Result

N/A

Usage Guidelines

1: IPsec policies can be created only on replication logical ports.

2: The TOE mode must be disabled for the physical port where the logical port is located.

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Application Scope

For internal use by R&D engineers.

Example

- Create an IPsec policy.

```
Request: POST /deviceManager/rest/210235843710E7000007/ipsec_policy
{
    "name": "testIPsec1",
    "logicalPortName": "testLif",
    "ipsecMode": "0",
    "psk": "abcdefghijkl123456789"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.2 Delete

2.6.9.2.1 Interface for Deleting a Bond Port

Function

This interface is used to delete a bond port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	Bond port ID. **Note:**Either "ID" or "NAME" must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Name. **The value is described as follows:** The value contains 1 to 31 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**1~31 **Note:**Either "ID" or "NAME" must be delivered.
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

Result

N/A

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Example

- Deleting the bond port whose ID is 549772730113.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/bond_port/549772730113

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Deleting the bond port whose name is "testb1".

```
Request: DELETE /deviceManager/rest/210235843910E6000009/bond_port
{
     "NAME":"testb1"
}

Response:
{
  "data": {},
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.2.2 Interface for Deleting a Container Network Plane Route

Function

Delete the route of the container network plane.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane_route

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
parentID	Mandatory	string	Network plane ID. **The value is described as follows:** 1..1024 **Length:**128

Parameter	Mandatory/Optional/Conditional	Type	Description
destination	Mandatory	string	Destination network segment. **The value is described as follows:** The value is an IP address in character string format. **Length:**64
mask	Mandatory	string	Subnet mask. **The value is described as follows:** The value is an IP address in character string format. **Length:**64
gateWay	Mandatory	string	Gateway address. **The value is described as follows:** The value is an IP address in character string format. **Length:**64

Result

N/A

Example

- Delete the route of the container network plane.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/netplane_route
{
   "parentID": "1",
   "destination": "199.168.10.0",
   "mask": "255.255.255.0",
   "gateWay": "192.168.10.100"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.2.3 Interface for Deleting a Logical Port

Function

This interface is used to delete a logical port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif?NAME=${name}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** - **Length:**1~255
id	Optional	string	Logical port ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting the logical port whose name is lif1.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/lif
{
    "NAME":"lif1"
}

Response: {
    "data": {

    },
    "error": {
```

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```
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.2.4 Interface for Deleting a Network Plane

Function

This interface is used to delete a network plane.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Network plane ID. **The value is described as follows:** 1..1024 **Length:**4

Result

N/A

Example

- Deleting a network plane whose ID is "3".

```
Request: DELETE /deviceManager/rest/210235843910E6000009/netplane/3

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.2.5 Interface for Deleting a Network Plane Member Association

Function

This interface is used to delete a network plane member association.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane/remove_associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Network plane ID. **The value is described as follows:** 1..1024 **Length:**4
associateObjType	Mandatory	enum	Type of a member interface on the network plane. **The value is described as follows:** 213: Ethernet port **Length:**4
associateObjID	Mandatory	string	ID of a member interface on the network plane. **The value is described as follows:** - **Length:**128

Result

N/A

Example

- Removing a network plane member whose ID is "3".

```
Request: POST /deviceManager/rest/210235843710E7000007/netplane/remove_associate
{
    "id":"3",
    "associateObjType":"213",
    "associateObjID":"549772722432"
}

Response:
{
    "data": {},
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.2.6 Interface for Deleting an IP Address Range

Function

Delete an IP address range.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/IP_RANGE

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}
parentName	Optional	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}

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Result

N/A

Example

- Delete an IP address range.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/IP_RANGE
{
    "name": "cnp_ipv4",
    "parentName": "cnp"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.2.7 Interface for Deleting an IPsec Policy

Function

Delete an IPsec policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

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Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Delete an IPsec policy.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/ipsec_policy
{
    "name": "testIPsec"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.2.8 Interface for Deleting Failover Group Information

Function

This interface is used to delete a failover group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Failover group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: asynchronous 1: synchronous **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

Result

N/A

Example

- Deleting the failover group whose ID is 3.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/failovergroup/3

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.2.9 Interface for Deleting Member association from Failover Group

Function

This interface is used to delete a member from a failover group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the failover group.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port 235: bond port 280: VLAN
ASSOCIATEOBJID	Mandatory	string	Port ID of a failover group member.

Result

N/A

Example

- Deleting member "1" from the failover group.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/failovergroup/associate?
ID=1&ASSOCIATEOBJTYPE=213&ASSOCIATEOBJID=131074
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.6.9.2.10 Interface for Deleting VLAN Information

Function

This interface is used to delete a VLAN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	VLAN ID.

Result

N/A

Example

- Deleting the VLAN whose ID is 4261543937.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/vlan/4261543937

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.2.11 Interface for Removing a Route

Function

This interface is used to remove a route.

HighRisk

You are about to delete the route of port ({0}). This operation will interrupt the connection between the storage system and host.

Suggestion: Before performing this operation, ensure that you have stopped all services on the route.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port_route/delete

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PORTID	Conditional	string	Port ID. **Note:**If PORTNAME is not specified, PORTID must be specified.
PORTNAME	Conditional	string	Port name. **Length:**1~255 **Note:**If PORTID is not specified, PORTNAME must be specified.
DESTINATION	Mandatory	string	Destination address.
MASK	Conditional	string	Destination mask. IPv4 and IPv6 are supported. **Note:** Parameters MASK and GATEWAY must be delivered at the same time, or neither of them are delivered. If MASK and GETEWAY of IPv6 are not delivered, all routes on the destination address specified by DESTINATION will be batch deleted.

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Parameter	Mandatory/Optional/Conditional	Type	Description
GATEWAY	Conditional	string	IPv4 or IPv6 gateway. **Note:** Parameters MASK and GATEWAY must be delivered at the same time, or neither of them are delivered. If MASK and GETEWAY of IPv6 are not delivered, all routes on the destination address specified by DESTINATION will be batch deleted.
PORTTYPE	Optional	enum	Port type. **The value is described as follows:** 1: Ethernet port 7: bond port 9: logical port **Default:**1: Ethernet port

Result

N/A

Example

- Removing a route.

```
Request: POST /deviceManager/rest/210235843910E6000009/eth_port_route/delete
{
    "DESTINATION": "0.0.0.0",
    "MASK": "0.0.0.0",
    "GATEWAY": "100.137.1.1",
    "PORTID": "549772722433",
    "PORTTYPE":1
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.6.9.2.12 Interface for Removing Members from the Remote IP Address List of an IPsec Policy

Function

Removes a member from the remote IP address list of an IPsec policy.

HighRisk

You are about to remove members from the remote IP address list of the IPsec policy.

After this operation, communication data on the link is no longer encrypted. If the IPsec policy is in use, services carried on the corresponding logical port will fluctuate for a short period of time.

Suggestion: Before performing this operation, ensure that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remove_ipsec_policy_member

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	**The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255
remoteIP	Mandatory	string	Remote IP address. **The value is described as follows:** A valid IPv4 address. **Length:**64

Result

N/A

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Application Scope

For internal use by R&D engineers.

Example

- Removes a member from the remote IP address list of an IPsec policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/remove_ipsec_policy_member
{
   "name": "testIPsec1",
   "remoteIP": "11.11.11.11"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.3 Modify

2.6.9.3.1 Interface for Modifying a Bond Port

Function

This interface is used to modify a bond port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	Bond port ID. **Note:**Either "ID" or "NAME" must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Name. **The value is described as follows:** The value contains 1 to 31 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**1~31 **Note:**Either "ID" or "NAME" must be delivered.
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
MTU	Optional	uint32	Maximum transmission rate. **The value is described as follows:** [1280,9000]

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Parameter	Mandatory/Optional/Conditional	Type	Description
IPV4ADDR	Optional	string	IPv4 address.
IPV4MASK	Optional	string	IPv4 mask.
IPV6ADDR	Optional	string	IPv6 address.
IPV6MASK	Optional	string	IPv6 prefix.
USEDTYPE	Optional	enum	OS type of the port service. The port is used by the storage system OS by default. [Note:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** 1: used for storage 2: used for VMs **Note:** This parameter is delivered only in VM scenarios. This parameter is not supported by OceanStor V3 all-flash array series. This parameter is not supported by OceanStor 2200 V3, 2600 V3, and 2600 V3 for Video.

Result

N/A

Usage Guidelines

The IP address configured using this command cannot be used to create a replication link.

Example

- Changing MTU of a bond port to 1502.

```
Request: PUT /deviceManager/rest/210235843910E6000009/bond_port/549772730113
{
```

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```
    "MTU": 1502
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.3.2 Interface for Modifying a Fibre Channel Port

Function

This interface is used to modify a Fibre Channel port.

HighRisk

You are about to disable the port.

This operation will interrupt services running on the port.

Suggestion: Before performing this operation, ensure that all services on the port have been stopped. You must run the command to enable the port to ensure that the port can carry services.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_port/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fibre Channel port ID.
CONFSPEED	Mandatory	uint32	Configured speed. **The value is described as follows:** 0 indicates auto-negotiation. The configured speed can be 1000 Mbit/s, 2000 Mbit/s, 4000 Mbit/s, 8000 Mbit/s, 16000 Mbit/s, and 32000 Mbit/s. **Unit:**Mbit/s

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Parameter	Mandatory/Optional/Conditional	Type	Description
portSwitch	Optional	bool	Port switch status. **The value is described as follows:** true: enabled false: disabled

Result

N/A

Example

- Changing configured rate of a Fibre Channel port to 4 Gbit/s whose ID is 549773705216.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fc_port/549773705216
{
   "CONFSPEED": 4000
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Disable the Fibre Channel port.

```
Request: PUT /deviceManager/rest/2102353GTD10L4000002/fc_port/562949954535680
{
   "PORTSWITCH": false
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.3.3 Interface for Modifying a Logical Port

Function

This interface is used to modify a logical port.

HighRisk

You are about to modify the properties of the logical port. This operation may interrupt services or cause service exceptions. If this operation also modifies the IP

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address of this logical port, the configured routes on the IP address that is modified on this logical port will also be cleared. If this operation involves modifying the home port, the logical port failover group will be restored to the default failover group or VLAN failover group.

Suggestion:

1. Before you perform this operation, determine whether the modification is necessary.

2. If this operation involves modifying the home port and the modified failover group is an unexpected failover group, modify the configurations of the failover group again.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Logical port ID. **The value is described as follows:** -
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
IPV4ADDR	Conditional	string	Logical port IPv4 address. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv4 address is added.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IPV4MASK	Conditional	string	Logical port IPv4 mask. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv4 address is added.
IPV4GATEWAY	Optional	string	Logical port IPv4 gateway. **The value is described as follows:** -
IPV6ADDR	Conditional	string	Logical port IPv6 address. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv6 address is added.
IPV6MASK	Conditional	string	Logical port IPv6 prefix. **The value is described as follows:** - **Note:**This parameter must be delivered if a new IPv6 address is added.
IPV6GATEWAY	Optional	string	Logical port IPv6 gateway. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
HOMEPORTTYPE	Conditional	enum	Type of the parent port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP **Note:**This field must be delivered if you want to change the primary port.
HOMEPORTID	Conditional	string	ID of the parent port. **The value is described as follows:** - **Note:**This field must be delivered if you want to change the type of the parent port.
HOMEPORTNAME	Optional	string	Name of the parent port.
CURRENTPORTID	Optional	string	ID of the current port. **The value is described as follows:** - **Note:** This field is used to modify the current port for the failback of the logical port, that is, to modify the current port as consistent as the primary port. Only the HOMEPORTID value of the current logical port can be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
OPERATIONALSTATUS	Optional	bool	Activated. [NOTE:This parameter is supported only by logical ports of the NFS, CIFS, and NFS_and_CIFS protocols or management roles.] **The value is described as follows:** true: activated false: not activated
ADDRESSFAMILY	Conditional	enum	Internet protocol version. **The value is described as follows:** 0: IPv4 1: IPv6 **Note:** The value must be the same as the configured IP address. This parameter must be delivered when you set any field in the IPv4 or IPv6 address, subnet mask, prefix, or gateway.
ISPRIVATE	Optional	bool	Whether it is configurable. [NOTE:This parameter is not supported by the current version. The execution result is invalid.] **The value is described as follows:** true: not configurable false: configurable
FAILOVERGROUPID	Optional	string	ID of the owning failover group. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
CANFAILOVER	Optional	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled
FAILBACKMODE	Optional	enum	Failback mode. **The value is described as follows:** 1: manual 2: auto
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.
ddnsStatus	Optional	enum	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".

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Parameter	Mandatory/Optional/Conditional	Type	Description
dnsZoneName	Optional	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255
listenDnsQueryEnabled	Optional	enum	Whether to listen for DNS query requests. **The value is described as follows:** 0: disabled 1: enabled
HOMECONTROLLERID	Optional	string	Owning controller. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**64
HOMESITEWWN	Optional	string	Home site WWN of the LIF. **The value is described as follows:** - **Length:**64

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Parameter	Mandatory/Optional/Conditional	Type	Description
removeFromDnsZone	Optional	uint32	Whether to remove a logical port from a DNS zone when configuring the logical port. **The value is described as follows:** The value is 1.

Result

N/A

Example

- Changing an IPv4 logical port to an IPv6 logical port.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lif
{
   "NAME":"lif1",
   "ADDRESSFAMILY": 1,
   "IPV6ADDR": "abc::1",
   "IPV6GATEWAY": "",
   "IPV6MASK": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Activating a logical port.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lif
{
  "NAME":"lif1",
  "OPERATIONALSTATUS": true
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Change the name of a logical port.

```
Request: PUT /deviceManager/rest/2102352TUW40K3200001/lif/4614219297495973889
{
   "NAME": "t2"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.3.4 Interface for Modifying a Network Plane

Function

This interface is used to modify a network plane.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Network plane ID. **The value is described as follows:** 1..1024 **Length:**4
name	Optional	string	Network plane name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255
mtu	Optional	uint32	Port MTU. **The value is described as follows:** 1280 to 9000. **Length:**4

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Parameter	Mandatory/Optional/Conditional	Type	Description
vlanid	Optional	uint32	VLAN ID. **The value is described as follows:** 1 to 4094. **Length:**4
ipv4SubNetBase	Optional	string	IPv4 subnet segment of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv4 address. **Length:**16
ipv4NetMask	Optional	string	IPv4 subnet mask of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv4 address. **Length:**16
ipv4Gateway	Optional	string	IPv4 subnet gateway. **The value is described as follows:** The value is a character string in the format of an IPv4 address. **Length:**16
ipv4SubNetRange	Optional	string	Available IP address range of the IPv4 subnet of the network plane. **The value is described as follows:** The value ranges from the available start IPv4 address to the end IPv4 address. **Length:**128

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Parameter	Mandatory/Optional/Conditional	Type	Description
ipv6SubNetBase	Optional	string	IPv6 subnet segment of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv6 address. **Length:**16
ipv6NetMask	Optional	string	Prefix length of the IPv6 subnet address of the network plane. **The value is described as follows:** 1 to 127. **Length:**4
ipv6Gateway	Optional	string	IPv6 subnet gateway. **The value is described as follows:** The value is a character string in the format of an IPv6 address. **Length:**16
ipv6SubNetRange	Optional	string	Available IP address range of the IPv6 subnet of the network plane. **The value is described as follows:** The value ranges from the available start IPv6 address to the end IPv6 address. **Length:**128
maxPodNumPerNode	Optional	uint32	Maximum number of pods supported by a single node. **The value is described as follows:** 1 to 15. **Length:**4

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Parameter	Mandatory/Optional/Conditional	Type	Description
failover	Optional	uint32	Whether to enable IP address failover for the network plane. **The value is described as follows:** 0..1 **Length:**4

Result

N/A

Example

- Changing the name of the network plane whose ID is "1" to "test4".

```
Request: PUT /deviceManager/rest/210235843910E6000009/netplane
{
    "id": "1",
    "name":"test4"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.3.5 Interface for Modifying an IP Address Range

Function

Modify the IP address range.

HighRisk

You are about to modify the network configuration of the network plane. This operation will restart the container service that uses the current network plane.

Suggestion: Before performing this operation, ensure that the current operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/IP_RANGE

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}
parentName	Optional	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}

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Parameter	Mandatory/Optional/Conditional	Type	Description
ipv4Range	Conditional	string	IPv4 address range. **The value is described as follows:** The value ranges from the start IPv4 address to the end IPv4 address. **Range:**((25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])-((25[0-5]|2[0-4][0-9]|[01]?\d?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?\d?[0-9]) **Note:**If the value of the addressFamily field is 0, the ipv4Range field must be delivered.
ipv6Range	Conditional	string	IPv6 address range. **The value is described as follows:** The value ranges from the start IPv6 address to the end IPv6 address. **Range:**.* **Note:**If the value of the addressFamily field is 1, the ipv6Range field must be delivered.
addressFamily	Optional	uint32	Address family of the IP address range. **The value is described as follows:** 0: IPv4 1: IPv6 **Length:**4 **Range:**[0,1]{1}

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Parameter	Mandatory/Optional/Conditional	Type	Description
newName	Optional	string	New name for the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_\.-]{1,255}
nameIndex	Optional	string	Name index. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).

Result

N/A

Example

- Modify the IP address range.

```
Request: PUT /deviceManager/rest/210235843910E6000009/IP_RANGE
{
    "name": "cnp_ipv4",
    "parentName": "cnp",
    "newName": "cnp_ip_1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.6.9.3.6 Interface for Modifying an IPsec Policy

Function

Modify an IPsec policy.

HighRisk

You are about to modify the IPsec policy.

If the remote IP address list of the IPsec policy is modified, the previous remote IP address list will be overwritten. Services carried on the corresponding logical port may fluctuate for a short period of time.

Suggestion: Before performing this operation, ensure that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
newName	Mandatory	string	Specifies the new name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Modify an IPsec policy.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ipsec_policy
{
    "name": "policy",
    "newName": "newPolicy"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.3.7 Interface for Modifying Ethernet Port Information

Function

This interface is used to modify information of an Ethernet port.

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HighRisk

You are about to modify the Ethernet physical MAC address (Port: {0}). This operation will cause the corresponding port to shut down once, causing the business to flash. Suggestion: Before performing this operation, stop all services on this port.
You are about to modify the MTU of the port. This operation may interrupt services or cause service exceptions. Suggestion: Before performing this operation, determine whether the modification is necessary.
You are about to change the IP address of port. This operation will disconnect the storage system from hosts. This operation will also clear the configured routes on the IP address that is modified on this port. Suggestion: 1. Check whether there are redundant connections to hosts. If there are no redundant connections, stop host services. 2. Ensure that the entered IP address is available.
You are about to change the IP address of management network port ({0}) whose IP address is ({1}) and gateway address is ({2}). If you enter an unavailable IP address, the DeviceManager will become inaccessible. This operation will clear the configured routes on the IP address that is modified on this management port. Suggestion: Before performing this operation, ensure that the entered IP address is available.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Indicates the ID of an Ethernet port.
MTU	Optional	uint32	Maximum transmission unit (MTU). **The value is described as follows:** [1280,9000]
IPV4ADDR	Optional	string	IPv4 address.
IPV4MASK	Optional	string	IPv4 mask.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IPV6ADDR	Optional	string	IPv6 address.
IPV6MASK	Optional	string	IPv6 mask.
MACADDRESS	Optional	string	Ethernet MAC address. **The value is described as follows:** The MAC address must consist of 17 characters including six fields separated by colons (:). Each field consists of two characters. The value can be digits from 0 to 9 and letters from a to f (case insensitive). **Length:**17 **Note:**Only the MAC address of the Dedicated Enterprise Storage Service (DESS) can be modified.
PORTSWITCH	Optional	bool	Port switch status. **The value is described as follows:** true: on false: off

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Parameter	Mandatory/Optional/Conditional	Type	Description
workModeType	Optional	enum	Mode type of the Ethernet port. **The value is described as follows:** 0: invalid 1: 10GE_AUTOADAPT 2: 25GE_AUTOADAPT 3: 10GE_BASEFEC 4: 10GE_NOFEC 5: 25GE_NOFEC 6: 25GE_BASEFEC 7: 25GE_RSFEC 8: 40GE_AUTOADAPT 9: 100GE_AUTOADAPT 10: 40GE_BASEFEC 11: 40GE_NOFEC 12: 100GE_NOFEC 13: 100GE_RSFEC 14: AUTONEG **Note:**This parameter can be configured for only ports of I/O modules whose model is 65 (4-port SmartIO I/O module), 66 (4-port SmartIO I/O module), 67 (2-port 40/100 Gbit/s ETH I/O module), or 68 (2-port 40/100 Gbit/s ETH I/O module).

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Parameter	Mandatory/Optional/Conditional	Type	Description
snsdSwitch	Optional	uint32	Whether to enable the SNSD function. **The value is described as follows:** 0: disables the SNSD function. 1: enables the SNSD function. **Default:**0 **Note:**Only the Ethernet ports that support the SNSD function can be modified.
trust	Optional	enum	Trust mode of a RoCE port. **The value is described as follows:** 0:PCP. 1:DSCP. **Note:**If the trust mode of a RoCE port is DSCP, you can directly create a logical port on the port. By default, the logical port is PCP.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port
ID	Mandatory	string	Indicates the ID of an Ethernet port.
NAME	Mandatory	string	Indicates the name of an Ethernet port.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Mandatory	string	ID of a controller or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 3: About to fail 9: Inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 10: Link up 11: Link down 33: To be recovered

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logical type of a port. **The value is described as follows:** 0: host port/service port 1: expansion port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 13: front-end container port 14: back-end container port
MACADDRESS	Mandatory	string	MAC address.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
ETHDUPLEX	Mandatory	string(enum)	Duplex mode. **The value is described as follows:** 1: half duplex 2: full duplex 3: auto-negotiation
ETHNEGOTIATE	Mandatory	string(enum)	Auto-negotiation mode. **The value is described as follows:** 1: half duplex 2: full duplex 3: auto-negotiation
MTU	Mandatory	string(uint32)	MTU.
BONDNAME	Mandatory	string	Name of the bound port.

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Parameter	Mandatory/ Conditional	Type	Description
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV4GATEWAY	Mandatory	string	IPv4 gateway.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 mask.
IPV6GATEWAY	Mandatory	string	IPv6 gateway.
ISCSITCPPORT	Mandatory	string	iSCSI port number.
ISCSINAME	Mandatory	string	iSCSI name.
ERRORPACKETS	Mandatory	string(uint32)	Number of error packets.
LOSTPACKETS	Mandatory	string(uint32)	Number of lost packets.
OVERFLOWEDPACKETS	Mandatory	string(uint32)	Number of overflowed packets.
STARTTIME	Mandatory	string(uint32)	Statistics start time. The local time is returned by default.
SPEED	Mandatory	string(uint32)	Working rate of the port. **Unit:**Mbit/s
selectType	Mandatory	string(enum)	This interface is used to query the type of a specified port when there are multiple controllers. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port

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Parameter	Mandatory/ Conditional	Type	Description
zoneId	Mandatory	string	Indicates the ID of the switching plane connected to the port in Scale_Out. **Note:**This parameter is valid only when LOGICTYPE is set to IP_SCALE_OUT.
dswId	Mandatory	string	Switch (virtual concept) connected to the port in Scale_Out. **Note:**This parameter is valid only when LOGICTYPE is set to IP_SCALE_OUT.
dswLinkRight	Mandatory	string	Status of the link between the port and the switch. **The value is described as follows:** 0: error 1: correct **Note:**This parameter is valid only when LOGICTYPE is set to IP_SCALE_OUT.
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: on false: off
BONDID	Conditional	string	ID of the bond port to which the ETH port belongs. **Note:**This parameter is available only after ports are bound.
lightStatus	Mandatory	string(enum)	Status of the location indicator. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
OWNINGCONTROLLER	Mandatory	string	Owning controller of a port.
SHARETYPE	Mandatory	enum	Share type. **The value is described as follows:** 0: The port is not shared. 1: The port is shared by all nodes in the enclosure. 2: The port is shared by all nodes in the cluster.
crcErrors	Mandatory	string(uint32)	Number of CRC errors.
frameErrors	Mandatory	string(uint32)	Number of frame errors.
frameLengthErrors	Mandatory	string(uint32)	Number of frame length errors.
maxSpeed	Mandatory	string(uint64)	Maximum working rate. **Unit:**Mbit/s
numberOfInitiators	Mandatory	string(uint32)	Number of host initiators.

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Parameter	Mandatory/ Conditional	Type	Description
workModeType	Mandatory	string(enum)	Mode of the Ethernet port. **The value is described as follows:** 0: invalid 1: 10GE_AUTOADAPT 2: 25GE_AUTOADAPT 3: 10GE_BASEFEC 4: 10GE_NOFEC 5: 25GE_NOFEC 6: 25GE_BASEFEC 7: 25GE_RSFEC 8: 40GE_AUTOADAPT 9: 100GE_AUTOADAPT 10: 40GE_BASEFEC 11: 40GE_NOFEC 12: 100GE_NOFEC 13: 100GE_RSFEC 14: AUTONEG
workModeList	Mandatory	string(array)	List of supported working modes of an Ethernet port. **Note:**The return value is a combination of workModeType enumeration types.
peerPortName	Mandatory	string	Name of the peer port.
suggestPortName	Mandatory	string	Recommended local port name.
suggestPeerPortName	Mandatory	string	Recommended name of the peer port.

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Parameter	Mandatory/ Conditional	Type	Description
checkResult	Mandatory	enum	Cable test result. **The value is described as follows:** 0: Invalid cable connection status. 1: The cable connection is incorrect. 2: No cable is connected. 3: Cables are properly connected.
physicalType	Mandatory	uint32	Physical type of the port. **The value is described as follows:** 1: ETH 2: RoCE
snsdSwitch	Mandatory	uint32	Whether the SNSD function is enabled. **The value is described as follows:** 0: The SNSD function is disabled. 1: The SNSD function is enabled.
vlan	Conditional	string	VLAN ID. **Note:**[NOTE:This field is not supported in this version, and the command output is invalid.]

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Mandatory	enum	Port usage type. **The value is described as follows:** 1: applies to the storage operating system. 2: applies to the VM system. **Note:**[NOTE:This field is not supported in this version, and the command output is invalid.]
DEVICENAME	Conditional	string	Device name of the port. **Note:**[NOTE:This field is not supported in this version, and the command output is invalid.]
portUsage	Conditional	enum	Function of a port. **The value is described as follows:** 1: service 2: management 3: maintenance **Note:**[NOTE:This field is not supported in this version, and the command output is invalid.]
totalReceivedPackets	Conditional	uint32	Total number of received packets. **Note:**This parameter is returned when the current port is a service port.
totalTransmittedPackets	Conditional	uint32	Total number of transmitted packets. **Note:**This parameter is returned when the current port is a service port.

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Parameter	Mandatory/ Conditional	Type	Description
totalReceivedBytes	Conditional	uint32	Total number of received bytes. **Unit:**bytes **Note:**This parameter is returned when the current port is a service port.
totalTransmittedBytes	Conditional	uint32	Total number of transmitted bytes. **Unit:**bytes **Note:**This parameter is returned when the current port is a service port.
receivedPacketsPerSec	Conditional	uint32	Average number of packets received per second in the last statistical period. **Note:** This parameter is returned when the current port is a service port. The statistical period is 30 seconds.
transmittedPacket-sPerSec	Conditional	uint32	Average number of packets transmitted per second in the last statistical period. **Note:** This parameter is returned when the current port is a service port. The statistical period is 30 seconds.

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Parameter	Mandatory/ Conditional	Type	Description
receivedBytesPerSec	Conditional	uint32	Average number of bytes received per second in the last statistical period. **Unit:**bytes/s **Note:** This parameter is returned when the current port is a service port. The statistical period is 30 seconds.
transmittedBytesPer-Sec	Conditional	uint32	Average number of bytes transmitted per second in the last statistical period. **Unit:**bytes/s **Note:** This parameter is returned when the current port is a service port. The statistical period is 30 seconds.

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Parameter	Mandatory/ Conditional	Type	Description
portFilter	Mandatory	enum	Port function filter. **The value is described as follows:** 0: Port used for configuring the IP address. 1: Port used to create an LIF. 2: Port used to create a VLAN. 3: Port used for creating a bond. 4: Port added to a customized failover group. 5: Port added to the VM. 6: Port added to the quorum link. **Note:**[NOTE:This field is not supported in this version, and the command output is invalid.]
trust	Conditional	enum	Trust mode of a RoCE port. **The value is described as follows:** 0:PCP. 1:DSCP. **Note:**If the trust mode of a RoCE port is DSCP, you can directly create a logical port on the port. By default, the logical port is PCP.

Usage Guidelines

1: Before using the port, stop the services on the port and check whether there are redundant connections.

2: The IP address configured using this command cannot be used to create a replication link.

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Example

- Changing the MTU of Ethernet port "281474976841984" to "1500", IPv4 address to "172.31.128.212", and IPv4 mask to "255.255.0.0".

```
Request: PUT /deviceManager/rest/2102353ASCFSLB000013/eth_port/281474976841984
{
   "MTU": 1500,
    "IPV4ADDR": "172.31.128.212",
    "IPV4MASK": "255.255.0.0",
   "workModeType": "4"
}

Response: {
   "data": {
      "BONDID": "",
      "BONDNAME": "",
      "DEVICENAME": "",
      "ERRORPACKETS": "0",
      "ETHDUPLEX": "-1",
      "ETHNEGOTIATE": "3",
      "HEALTHSTATUS": "1",
      "ID": "281474976841728",
      "INIORTGT": "4",
      "IPV4ADDR": "",
      "IPV4GATEWAY": "",
      "IPV4MASK": "",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISCSINAME": "",
      "ISCSITCPPORT": "0",
      "LOCATION": "CTE0.A.IOM0.P0",
      "LOGICTYPE": "0",
      "LOSTPACKETS": "0",
      "MACADDRESS": "10:c3:ab:7f:5e:62",
      "MTU": "1500",
      "NAME": "P0",
      "OVERFLOWEDPACKETS": "0",
      "OWNINGCONTROLLER": "0A",
      "PARENTID": "0A.0",
      "PARENTTYPE": 209,
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "11",
      "SHARETYPE": "0",
      "SPEED": "-1",
      "STARTTIME": "1614897254",
      "TYPE": 213,
      "USEDTYPE": "0",
      "checkResult": "0",
      "crcErrors": "0",
      "dswId": "4294967295",
      "dswLinkRight": "0",
      "frameErrors": "0",
      "frameLengthErrors": "0",
      "lightStatus": "0",
      "maxSpeed": "25000",
      "numberOfInitiators": "0",
      "peerPortName": "",
      "physicalType": "2",
      "portFilter": "0",
      "portUsage": "0",
      "receivedBytesPerSec": "0",
      "receivedPacketsPerSec": "0",
      "selectType": "0",
      "snsdSwitch": "1",
      "suggestPeerPortName": "",
      "suggestPortName": "",
      "totalReceivedBytes": "0",
      "totalReceivedPackets": "0",
```

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```
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[\"14\",\"7\",\"6\",\"5\",\"4\",\"3\",\"2\",\"1\"]",
        "workModeType": "14",
        "zoneId": "4294967295",
        "trust": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Enabling the storage network smart discovery (SNSD) function of Ethernet port "281474976841728".


```
Request: PUT /deviceManager/rest/2102353ASCFSLB000013/eth_port/281474976841728
{
    "snsdSwitch": "1"
}

Response: {
    "data": {
        "BONDID": "",
        "BONDNAME": "",
        "DEVICENAME": "",
        "ERRORPACKETS": "0",
        "ETHDUPLEX": "-1",
        "ETHNEGOTIATE": "3",
        "HEALTHSTATUS": "1",
        "ID": "281474976841728",
        "INIORTGT": "4",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISCSINAME": "",
        "ISCSITCPPORT": "0",
        "LOCATION": "CTE0.A.IOM0.P0",
        "LOGICTYPE": "0",
        "LOSTPACKETS": "0",
        "MACADDRESS": "10:c3:ab:7f:5e:62",
        "MTU": "1500",
        "NAME": "P0",
        "OVERFLOWEDPACKETS": "0",
        "OWNINGCONTROLLER": "0A",
        "PARENTID": "0A.0",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "11",
        "SHARETYPE": "0",
        "SPEED": "-1",
        "STARTTIME": "1614897254",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "0",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "25000",
        "numberOfInitiators": "0",
        "peerPortName": "",
```


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```
        "physicalType": "2",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "1",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[\"14\",\"7\",\"6\",\"5\",\"4\",\"3\",\"2\",\"1\"]",
        "workModeType": "14",
        "zoneId": "4294967295",
        "trust": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Change the trust mode of RoCE port 281474976841728.


```
Request: PUT /deviceManager/rest/2102353ASCFSLB000013/eth_port/281474976841728
{
    "trust": "1"
}

Response: {
    "data": {
        "BONDID": "",
        "BONDNAME": "",
        "DEVICENAME": "",
        "ERRORPACKETS": "0",
        "ETHDUPLEX": "-1",
        "ETHNEGOTIATE": "3",
        "HEALTHSTATUS": "1",
        "ID": "281474976841728",
        "INIORTGT": "4",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISCSINAME": "",
        "ISCSITCPPORT": "0",
        "LOCATION": "CTE0.A.IOM0.P0",
        "LOGICTYPE": "0",
        "LOSTPACKETS": "0",
        "MACADDRESS": "10:c3:ab:7f:5e:62",
        "MTU": "1500",
        "NAME": "P0",
        "OVERFLOWEDPACKETS": "0",
        "OWNINGCONTROLLER": "0A",
        "PARENTID": "0A.0",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "11",
        "SHARETYPE": "0",
        "SPEED": "-1",
        "STARTTIME": "1614897254",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
```


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```
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "0",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "25000",
        "numberOfInitiators": "0",
        "peerPortName": "",
        "physicalType": "2",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "1",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[\"14\",\"7\",\"6\",\"5\",\"4\",\"3\",\"2\",\"1\"]",
        "workModeType": "14",
        "zoneId": "4294967295",
        "trust": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.3.8 Interface for Modifying Failover Group Information

Function

This interface is used to modify a failover group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Failover group ID.

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value contains only letters, digits, periods (.), underscores (_), and hyphens (-). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~127
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: asynchronous 1: synchronous **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 289: failover group
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
FAILOVERGROUPTYPE	Mandatory	string(enum)	Type of the failover group. **The value is described as follows:** 1: system 2: VLAN 3: customized

Example

- Changing DESCRIPTION of the failover group whose ID is 1 to Customized-FailoverGroups.

```
Request: PUT /deviceManager/rest/210235843910E6000009/failovergroup/1
{
    "DESCRIPTION": "Customized-FailoverGroups"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.3.9 Interface for Modifying VLAN Information

Function

This interface is used to modify a VLAN.

HighRisk

You are about to modify the MTU settings for VLAN ({0}). This operation may interrupt services or cause service exceptions.

Suggestion: Before performing this operation, determine whether the modification is necessary.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	VLAN ID.
MTU	Mandatory	uint32	Maximum transfer unit. **The value is described as follows:** [1280,9000]. The value cannot be greater than the MTU of the parent port.

Result

N/A

Example

- Changing MTU of the VLAN whose ID is 4261543937 to 1502.

```
Request: PUT /deviceManager/rest/210235843910E6000009/vlan/4261543937
{
   "MTU": 1502
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4 Query

2.6.9.4.1 Interface for Batch Querying Bond Port Information

Function

This interface is used to batch query basic information about bond ports.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sortby	Optional	string	Sorting criteria. **Note:** The bond ports can be sorted in descending or ascending order. If you want to sort the bond ports in ascending order, set the parameter to "sortby=NAME,a". If you want to sort the bond ports in descending order, set the parameter to "sortby=NAME,d".
filter	Optional	string	Parameter NAME is supported.
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 235: bond port
ID	Mandatory	string	Bond port ID.
NAME	Mandatory	string	Bond port name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 4: Partially damaged 7: Bit errors found
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered
PORTIDLIST	Mandatory	string(array)	List of Ethernet ports.
MTU	Mandatory	string(uint32)	Maximum transmission unit.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 prefix.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.
DEVICENAME	Mandatory	string	Device name of the port.

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Mandatory	string(enum)	OS type of the port service. **The value is described as follows:** -1: default value 1: applies to the storage operating system. 2: applies to the VM system. **Note:**This parameter is no longer used. The default value is -1, which is an invalid value.
bondInfo	Mandatory	string	Information about the member ports of a bond port.

Example

- Query the information about the first 100 bond ports whose names contain "b" and sort the information by name in ascending order.

```
Request: GET /deviceManager/rest/210235843910E6000009/bond_port?
filter=NAME:b&range=[0-100]&sortby=NAME,a

Response: {
   "data": [
      {
         "DEVICENAME": "bond1",
         "HEALTHSTATUS": "1",
         "ID": "1970324837113601",
         "IPV4ADDR": "2.2.2.2",
         "IPV4MASK": "255.255.0.0",
         "IPV6ADDR": "",
         "IPV6MASK": "",
         "MTU": "1500",
         "NAME": "b1",
         "PORTIDLIST": "[\"281474976841730\",\"281474976841731\"]",
         "RUNNINGSTATUS": "10",
         "TYPE": 235,
         "USEDTYPE": "-1",
         "bondInfo": "CTE0.A.IOM0.P2,CTE0.A.IOM0.P3",
         "numberOfInitiators": "0"
      },
      {
         "DEVICENAME": "bond2",
         "HEALTHSTATUS": "1",
         "ID": "1970324837113602",
         "IPV4ADDR": "",
         "IPV4MASK": "",
         "IPV6ADDR": "",
         "IPV6MASK": "",
         "MTU": "1500",
```

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```
            "NAME": "bond1",
            "PORTIDLIST": "[\"281474976841985\",\"281474976841986\"]",
            "RUNNINGSTATUS": "11",
            "TYPE": 235,
            "USEDTYPE": "-1",
            "bondInfo": "CTE0.A.IOM1.P1,CTE0.A.IOM1.P2",
            "numberOfInitiators": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.2 Interface for Batch Querying Ethernet Port Information

Function

This interface is used to batch query basic information about Ethernet ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Optional	string	ID of a controller or interface module.

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Parameter	Mandatory/Optional/Conditional	Type	Description
LOGICTYPE	Optional	enum	Port type. **The value is described as follows:** 0: host port/service port 1: expansion port 2: management port 3: internal port 4: maintenance port 5: management/service port 6: maintenance/service port 13: front-end container port 14: back-end container port
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port
ID	Mandatory	string	Indicates the ID of an Ethernet port.
NAME	Mandatory	string	Indicates the name of an Ethernet port.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Mandatory	string	ID of a controller or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 7: Bit errors found
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered
LOGICTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 0: host port/service port 1: expansion port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 13: front-end container port 14: back-end container port

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Parameter	Mandatory/ Conditional	Type	Description
MACADDRESS	Mandatory	string	MAC address.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
ETHDUPLEX	Mandatory	string(enum)	Duplex mode. **The value is described as follows:** -1: unknown 1: half duplex 2: full duplex
ETHNEGOTIATE	Mandatory	string(enum)	Negotiation mode. **The value is described as follows:** -1: unknown 3: auto-negotiation
MTU	Mandatory	string(uint32)	Maximum transmission unit (MTU).
BONDNAME	Mandatory	string	Bond name.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV4GATEWAY	Mandatory	string	IPv4 gateway.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 mask.
IPV6GATEWAY	Mandatory	string	IPv6 gateway.
ISCSITCPPORT	Mandatory	string	iSCSI port ID.
ISCSINAME	Mandatory	string	iSCSI name.
ERRORPACKETS	Mandatory	string(uint32)	Number of error packets.
LOSTPACKETS	Mandatory	string(uint32)	Number of lost packets.
OVERFLOWEDPACKETS	Mandatory	string(uint32)	Number of overflowed packets.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default.
SPEED	Mandatory	string(uint32)	Port working rate. **Unit:**Mbit/s
selectType	Mandatory	string(enum)	Queries the specified type of the current port when the storage system has multiple controllers. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
zoneId	Mandatory	string	ID of the switching plane connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
dswId	Mandatory	string	ID of the switch (virtual) connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
dswLinkRight	Mandatory	string	Status of the connection between the specified port and switch. **The value is described as follows:** 0: incorrect 1: correct **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.

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Parameter	Mandatory/ Conditional	Type	Description
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: on false: off
BONDID	Conditional	string	ID of the bond port of the ETH port. **Note:**This field is valid only after port bonding.
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
OWNINGCONTROLLER	Mandatory	string	Owning controller of the port.
SHARETYPE	Mandatory	enum	Share type. **The value is described as follows:** 0: The port is not shared. 1: The port is shared by all nodes in the enclosure. 2: The port is shared by all nodes in the cluster.
crcErrors	Mandatory	string(uint32)	Number of CRC errors.
frameErrors	Mandatory	string(uint32)	Number of frame errors.
frameLengthErrors	Mandatory	string(uint32)	Number of frame length errors.
maxSpeed	Mandatory	string(uint64)	Max working rate. **Unit:**Mbit/s
numberOfInitiators	Mandatory	string(uint32)	Number of host initiators.

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Parameter	Mandatory/ Conditional	Type	Description
workModeType	Mandatory	string(enum)	Mode type of the Ethernet port. **The value is described as follows:** 0: invalid 1: 10GE_AUTOADAPT 2: 25GE_AUTOADAPT 3: 10GE_BASEFEC 4: 10GE_NOFEC 5: 25GE_NOFEC 6: 25GE_BASEFEC 7: 25GE_RSFEC 8: 40GE_AUTOADAPT 9: 100GE_AUTOADAPT 10: 40GE_BASEFEC 11: 40GE_NOFEC 12: 100GE_NOFEC 13: 100GE_RSFEC 14: AUTONEG
workModeList	Mandatory	string(array)	List of Ethernet port working modes. **Note:**The returned value is a combination of workModeType enumeration types.
peerPortName	Mandatory	string	Peer port name.
suggestPortName	Mandatory	string	Recommended local port name.
suggestPeerPortName	Mandatory	string	Recommended peer port name.

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Parameter	Mandatory/ Conditional	Type	Description
checkResult	Mandatory	enum	Code of the cable connection check result. **The value is described as follows:** 0: invalid cable connection status 1: incorrect cable connection 2: no cable connection 3: proper cable connection
physicalType	Mandatory	uint32	Physical port type. **The value is described as follows:** 1: ETH 2: RoCE
snsdSwitch	Mandatory	uint32	Switch status of the SNSD function. **The value is described as follows:** 0: The SNSD function is disabled. 1: The SNSD function is enabled.
vlan	Conditional	string	VLAN ID. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
USEDTYPE	Mandatory	enum	Port usage type. **The value is described as follows:** 1: applicable to the storage OS 2: applicable to the VM system **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]

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Parameter	Mandatory/ Conditional	Type	Description
DEVICENAME	Conditional	string	Device name. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
portUsage	Conditional	enum	Port usage. **The value is described as follows:** 1: service 2: management 3: maintenance **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
totalReceivedPackets	Conditional	uint32	Total number of received packets. **Note:**The value is returned when the port is a service port.
totalTransmittedPackets	Conditional	uint32	Total number of transmitted packets. **Note:**The value is returned when the port is a service port.
totalReceivedBytes	Conditional	uint32	Total number of received bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.
totalTransmittedBytes	Conditional	uint32	Total number of transmitted bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.

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Parameter	Mandatory/ Conditional	Type	Description
receivedPacketsPerSec	Conditional	uint32	Average number of packets received per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
transmittedPacket-sPerSec	Conditional	uint32	Average number of packets transmitted per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
receivedBytesPerSec	Conditional	uint32	Average number of bytes received per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
transmittedBytesPer-Sec	Conditional	uint32	Average number of bytes transmitted per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.

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Parameter	Mandatory/ Conditional	Type	Description
portFilter	Mandatory	enum	Port function filter. **The value is described as follows:** 0: Used to configure IP addresses 1: Used to create LIFs 2: Used to create VLANs 3: Used to create binding 4: Port added to a customized failover group 5: Port added to a VM 6: Port added to a quorum link **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
trust	Conditional	enum	Trust mode of a RoCE port. **The value is described as follows:** 0:PCP. 1:DSCP. **Note:**If the trust mode of a RoCE port is DSCP, you can directly create a logical port on the port. By default, the logical port is PCP.
defWorkNode	Conditional	string	Default home node. **The value is described as follows:** The value is a string of 1 to 32 characters, including digits and letters.

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Example

- Batch querying all Ethernet ports of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port

Response: {
   "data": {
      "BONDID": "",
      "BONDNAME": "",
      "DEVICENAME": "",
      "ERRORPACKETS": "0",
      "ETHDUPLEX": "2",
      "ETHNEGOTIATE": "3",
      "HEALTHSTATUS": "1",
      "ID": "281479271810306",
      "INIORTGT": "4",
      "IPV4ADDR": "",
      "IPV4GATEWAY": "",
      "IPV4MASK": "",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISCSINAME": "",
      "ISCSITCPPORT": "0",
      "LOCATION": "CTE0.B5.P2",
      "LOGICTYPE": "0",
      "LOSTPACKETS": "0",
      "MACADDRESS": "10:51:72:4c:75:0d",
      "MTU": "1500",
      "NAME": "P2",
      "OVERFLOWEDPACKETS": "0",
      "OWNINGCONTROLLER": "0B",
      "PARENTID": "0B.5",
      "PARENTTYPE": 209,
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "10",
      "SHARETYPE": "0",
      "SPEED": "1000",
      "STARTTIME": "1596469325",
      "TYPE": 213,
      "USEDTYPE": "0",
      "checkResult": "0",
      "crcErrors": "0",
      "dswId": "4294967295",
      "dswLinkRight": "4294967295",
      "frameErrors": "0",
      "frameLengthErrors": "0",
      "lightStatus": "0",
      "maxSpeed": "1000",
      "numberOfInitiators": "0",
      "peerPortName": "",
      "physicalType": "1",
      "portFilter": "0",
      "portUsage": "0",
      "receivedBytesPerSec": "0",
      "receivedPacketsPerSec": "0",
      "selectType": "0",
      "snsdSwitch": "0",
      "suggestPeerPortName": "",
      "suggestPortName": "",
      "totalReceivedBytes": "0",
      "totalReceivedPackets": "0",
      "totalTransmittedBytes": "0",
      "totalTransmittedPackets": "0",
      "transmittedBytesPerSec": "0",
      "transmittedPacketsPerSec": "0",
      "vlan": "",
      "workModeList": "[]",
      "workModeType": "0",
```

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```
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Batch querying all Ethernet ports of the storage array. The UTC time is returned.


```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port?timeConversion=0

Response: {
    "data": {
        "BONDID": "",
        "BONDNAME": "",
        "DEVICENAME": "",
        "ERRORPACKETS": "0",
        "ETHDUPLEX": "2",
        "ETHNEGOTIATE": "3",
        "HEALTHSTATUS": "1",
        "ID": "281479271810306",
        "INIORTGT": "4",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISCSINAME": "",
        "ISCSITCPPORT": "0",
        "LOCATION": "CTE0.B5.P2",
        "LOGICTYPE": "0",
        "LOSTPACKETS": "0",
        "MACADDRESS": "10:51:72:4c:75:0d",
        "MTU": "1500",
        "NAME": "P2",
        "OVERFLOWEDPACKETS": "0",
        "OWNINGCONTROLLER": "0B",
        "PARENTID": "0B.5",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "10",
        "SHARETYPE": "0",
        "SPEED": "1000",
        "STARTTIME": "1596469325",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "4294967295",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "1000",
        "numberOfInitiators": "0",
        "peerPortName": "",
        "physicalType": "1",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "0",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
```


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```
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[]",
        "workModeType": "0",
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.3 Interface for Batch Querying Failover Group Information

Function

This interface is used to batch query basic information about failover groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 289: failover group
ID	Mandatory	string	Failover group ID.
NAME	Mandatory	string	Name of the failover group.
DESCRIPTION	Mandatory	string	Description.
FAILOVERGROUPTYPE	Mandatory	string(enum)	Type of the failover group. **The value is described as follows:** 1: system 2: VLAN 3: customized
failoverGroupService-Type	Mandatory	enum	Service type of the failover group. **The value is described as follows:** 0: NAS 3: BGP
failoverGroupIpType	Conditional	enum	IP address type of the failover group. **The value is described as follows:** 0: IPv4 1: IPv6 **Note:**This parameter is returned only when the service type of the failover group is BGP.

Example

- Batch querying basic information about the first 100 failover groups whose name contains "sys".

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```
Request: GET /deviceManager/rest/210235843910E6000009/failovergroup?
filter=NAME:sys&range=[0-100]

Response:
{
   "data": [
      {
         "ID": "0",
         "NAME": "System-defined",
         "FAILOVERGROUPTYPE": "1",
         "DESCRIPTION": "System-FailoverGroup",
         "TYPE": 289
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query all failover groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/failovergroup

Response:
{
  "data": [
    {
      "DESCRIPTION": "System-FailoverGroup",
      "FAILOVERGROUPTYPE": "1",
      "ID": "0",
      "NAME": "System-defined",
      "TYPE": 289,
      "failoverGroupServiceType": "0"
    },
    {
      "DESCRIPTION": "description",
      "FAILOVERGROUPTYPE": "3",
      "ID": "1",
      "NAME": "bgpFg1",
      "TYPE": 289,
      "failoverGroupIpType": "1",
      "failoverGroupServiceType": "3"
    },
    {
      "DESCRIPTION": "description",
      "FAILOVERGROUPTYPE": "3",
      "ID": "4",
      "NAME": "nasflvg1",
      "TYPE": 289,
      "failoverGroupServiceType": "0"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.4.4 Interface for Batch Querying Fibre Channel Port Information

Function

This interface is used to batch query basic information about Fibre Channel ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_port

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time
vstoreId	Optional	string	vStore ID. **The value is described as follows:** The value contains 1 to 256 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 212: Fibre Channel port.
ID	Mandatory	string	Fibre Channel port ID.
NAME	Mandatory	string	Fibre Channel port name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	Controller ID or interface module ID.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status.
RUNNINGSTATUS	Mandatory	string(enum)	Running status.
LOGICTYPE	Mandatory	string(enum)	Logical type of a port. **The value is described as follows:** 0: host port/service port
RUNSPEED	Mandatory	string(uint32)	Operating speed. **The value is described as follows:** "-1" is returned if the port works incorrectly. **Unit:**Mbit/s
CONFSPEED	Mandatory	string(uint32)	Configured speed. **The value is described as follows:** 0 indicates auto-negotiation. The current speed can be 1 Gbit/s, 2 Gbit/s, 4 Gbit/s, 8 Gbit/s, and 16 Gbit/s. The conversion unit is 1000. The device returns the value by default. **Unit:**Mbit/s
WWN	Mandatory	string	WWN.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target

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Parameter	Mandatory/ Conditional	Type	Description
SFPSTATUS	Mandatory	string(enum)	Optical module status. **The value is described as follows:** 0: absent 1: offline 2: online
FCCONFMODE	Mandatory	string(enum)	Configured mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: Auto "-1" is returned if the port works incorrectly.
FCRUNMODE	Mandatory	string(enum)	Operating mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: Auto "-1" is returned if the port works incorrectly.
LOSTSIGNALS	Mandatory	string(uint32)	Number of errors (the Loss of Signal type).
BADCHARNUMBER	Mandatory	string(uint32)	Number of errors (the Bad RX Char type).
LOSTSYNC	Mandatory	string(uint32)	Number of errors (the Loss of Sync type).
LINKFAIL	Mandatory	string(uint32)	Number of errors (the Link Fail type).
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default.
FLOGINDELAYTIMES	Mandatory	string(uint32)	Latency of running the flogin command.

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Parameter	Mandatory/ Conditional	Type	Description
MAXSUPPORTSPEED	Mandatory	string(uint32)	Maximum rate of a Fibre Channel port. **The value is described as follows:** 1000 2000 4000 8000 16000 **Unit:**Mbit/s
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
fastWriteEnable	Mandatory	string(uint32)	FastWrite switch status. **The value is described as follows:** 0: off 1: on
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** false: off true: on
MAXSPEED	Mandatory	string(uint32)	Maximum speed. **Unit:**Mbit/s
BADCRCNUM	Mandatory	string(uint32)	Number of CRC errors.
endOfFrameErrors	Mandatory	string(uint32)	Number of frame end sign errors.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.

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Parameter	Mandatory/ Conditional	Type	Description
protocol	Mandatory		Protocol type of the Fibre Channel port. **The value is described as follows:** 1: FC-SCSI 2: FC_NVMe 3: FC-SCSI & FC-NVMe **Unit:**uint32

Example

- Batch querying all Fibre Channel ports of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port

Response: {
   "data": [
      {
         "BADCHARNUMBER": "0",
         "BADCRCNUM": "0",
         "CONFSPEED": "0",
         "FCCONFMODE": "3",
         "FCRUNMODE": "-1",
         "FLOGINDELAYTIMES": "0",
         "HEALTHSTATUS": "1",
         "ID": "549773705216",
         "INIORTGT": "4",
         "LINKFAIL": "0",
         "LOCATION": "CTE0.B.IOM0.P0",
         "LOGICTYPE": "0",
         "LOSTSIGNALS": "0",
         "LOSTSYNC": "0",
         "MAXSPEED": "16000",
         "MAXSUPPORTSPEED": "8000",
         "NAME": "P0",
         "PARENTID": "0B.0",
         "PARENTTYPE": 209,
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "11",
         "RUNSPEED": "-1",
         "SFPSTATUS": "1",
         "STARTTIME": "1474200499",
         "TYPE": 212,
         "WWN": "201030d17eb4f761",
         "endOfFrameErrors": "0",
         "fastWriteEnable": "0",
         "lightStatus": "0",
         "numberOfInitiators": "1",
         "protocol": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Batch querying basic information about all Fibre Channel ports of the storage array. The UTC time is returned.

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```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port?timeConversion=0

Response: {
   "data": [
      {
         "BADCHARNUMBER": "0",
         "BADCRCNUM": "0",
         "CONFSPEED": "0",
         "FCCONFMODE": "3",
         "FCRUNMODE": "-1",
         "FLOGINDELAYTIMES": "0",
         "HEALTHSTATUS": "1",
         "ID": "549773705216",
         "INIORTGT": "4",
         "LINKFAIL": "0",
         "LOCATION": "CTE0.B.IOM0.P0",
         "LOGICTYPE": "0",
         "LOSTSIGNALS": "0",
         "LOSTSYNC": "0",
         "MAXSPEED": "16000",
         "MAXSUPPORTSPEED": "8000",
         "NAME": "P0",
         "PARENTID": "0B.0",
         "PARENTTYPE": 209,
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "11",
         "RUNSPEED": "-1",
         "SFPSTATUS": "1",
         "STARTTIME": "1474200499",
         "TYPE": 212,
         "WWN": "201030d17eb4f761",
         "endOfFrameErrors": "0",
         "fastWriteEnable": "0",
         "lightStatus": "0",
         "numberOfInitiators": "1",
         "protocol": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.5 Interface for Batch Querying IPsec Policies

Function

Query IPsec policies in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
logicalPortName	Optional	string	Name of a logical port. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), periods (.), and hyphens (-). **Length:**255

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
logicalPortName	Mandatory	string	Name of a logical port. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), periods (.), and hyphens (-).
ipsecMode	Mandatory	enum	Encryption algorithm template. **The value is described as follows:** 0:AES;1:SM4

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Application Scope

For internal use by R&D engineers.

Example

- Query all IPsec policies in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/ipsec_policy?logicalPortName=lif1

Response: {
   "data": [
      {
         "name": "test",
         "logicalPortName": "lif1",
         "ipsecMode": "0"
      },
      {
         "name": "test1",
         "logicalPortName": "lif1",
         "ipsecMode": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.6 Interface for Batch Querying Logical Port Information

Function

This interface is used to batch query basic information about logical ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, IPV4ADDR, IPV6ADDR, and HOMEPORTID are supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 279: logical port
ID	Mandatory	string	ID of a logical port.
NAME	Mandatory	string	Name of a logical port.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered 110: Standby
IPV4ADDR	Mandatory	string	Logical port IPv4 address.
IPV4MASK	Mandatory	string	Logical port IPv4 mask.
IPV4GATEWAY	Mandatory	string	Logical port IPv4 gateway.
IPV6ADDR	Mandatory	string	Logical port IPv6 address.
IPV6MASK	Mandatory	string	Logical port IPv6 prefix.
IPV6GATEWAY	Mandatory	string	Logical port IPv6 gateway.
ROLE	Mandatory	string(enum)	Role of a logical port. **The value is described as follows:** 1: management 2: service 3: management +service 4: replication

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Parameter	Mandatory/ Conditional	Type	Description
SUPPORTPROTOCOL	Mandatory	string(uint32)	Supported protocol. **The value is described as follows:** 0: NONE 1: NFS (bit 0 for the NFS switch) 2: CIFS (bit 1 for the CIFS switch) 3: NFS + CIFS 4: iSCSI (bit 2 for the iSCSI switch) 8: FC/FCoE (bit 3 for the FC/FCoE switch) 512: BGP (bit 9 for the BGP switch) If the bit switch is 0, the protocol is not supported. If the bit switch is 1, the protocol is supported. This is convenient for expanding subsequent protocols.
HOMEPORTTYPE	Mandatory	string(enum)	Type of the parent port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
HOMEPORTID	Mandatory	string	ID of the parent port.
HOMEPORTNAME	Mandatory	string	Name of the parent port.
HOMECONTROLLERID	Mandatory	string	ID of the parent controller.

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Parameter	Mandatory/ Conditional	Type	Description
CURRENTPORTTYPE	Mandatory	string(enum)	Type of the current port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
CURRENTPORTID	Mandatory	string	ID of the current port.
CURRENTPORTNAME	Mandatory	string	Name of the current port.
CURRENTCONTROLLERID	Mandatory	string	ID of the current controller.
OPERATIONALSTATUS	Mandatory	string(bool)	Whether the port is activated. **The value is described as follows:** true: activated false: not activated
ADDRESSFAMILY	Mandatory	string(enum)	TCP/IP version. **The value is described as follows:** 0: IPv4 1: IPv6
FAILOVERGROUPID	Mandatory	string	ID of the owning failover group.
FAILOVERGROUPNAME	Mandatory	string	Name of the owning failover group.
CANFAILOVER	Mandatory	string(bool)	Indicates whether failover is enabled. The default value is true. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ISPRIVATE	Mandatory	string(bool)	Whether it is configurable. **The value is described as follows:** true: not configurable false: configurable
FAILBACKMODE	Mandatory	string(enum)	Failback mode. **The value is described as follows:** 0: not supported 1: manual 2: auto
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
MANAGEMENTACCESS	Mandatory	string	Manages the access mode.
ddnsStatus	Mandatory	string(enum)	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".

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Parameter	Mandatory/ Conditional	Type	Description
dnsZoneName	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.
listenDnsQueryEnabled	Conditional	string(enum)	Whether to listen for DNS query requests. **The value is described as follows:** 0: NO 1: YES
isDefLif	Mandatory	bool	Whether it is created by default. **The value is described as follows:** false: not created by default true: created by default
LogicalType	Mandatory	enum	Logical type. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
WORKSTATUS	Mandatory	enum	Working status. **The value is described as follows:** 0: Standby 1: Working

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Parameter	Mandatory/ Conditional	Type	Description
HOMESITEWWN	Mandatory	string	Home site WWN of the LIF. **The value is described as follows:** -

Example

- Batch querying the first 100 logical ports whose IP addresses contain 172.

```
Request: GET /deviceManager/rest/210235843910E6000009/lif?filter=IPV4ADDR: 172&range=[0-100]

Response:
{
   "data": [
      {
     "ADDRESSFAMILY": "0",
     "CANFAILOVER": "false",
     "CURRENTCONTROLLERID": "0A",
     "CURRENTPORTID": "281474976841984",
     "CURRENTPORTNAME": "CTE0.A.IOM1.P0",
     "CURRENTPORTTYPE": "1",
     "FAILBACKMODE": "0",
     "FAILOVERGROUPID": "0",
     "FAILOVERGROUPNAME": "--",
     "HOMECONTROLLERID": "0A",
     "HOMEPORTID": "281474976841984",
     "HOMEPORTNAME": "CTE0.A.IOM1.P0",
     "HOMEPORTTYPE": "1",
     "HOMESITEWWN": "",
     "ID": "4614219297498071040",
     "IPV4ADDR": "172.31.128.212",
     "IPV4GATEWAY": "",
     "IPV4MASK": "255.255.0.0",
     "IPV6ADDR": "",
     "IPV6GATEWAY": "",
     "IPV6MASK": "",
     "ISPRIVATE": "false",
     "LogicalType": "0",
     "MANAGEMENTACCESS": "--",
     "NAME": "CTE0.A.IOM1.P0.V4",
     "OPERATIONALSTATUS": "true",
     "ROLE": "2",
     "RUNNINGSTATUS": "10",
     "SUPPORTPROTOCOL": "4",
     "TYPE": 279,
     "ddnsStatus": "0",
     "dnsZoneName": "",
     "isDefLif": "true",
     "version": "0",
     "vstoreId": "0",
     "vstoreName": "System_vStore"
   }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.4.7 Interface for Batch Querying Route Information

Function

This interface is used to batch query information about routes.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port_route

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PORTID	Mandatory	string	Port ID.

Result

Parameter	Mandatory/Conditional	Type	Description
PORTID	Mandatory	string	Port ID.
PORTNAME	Mandatory	string	Port name.
DESTINATION	Mandatory	string	Destination address.
MASK	Mandatory	string	Destination mask.
GATEWAY	Mandatory	string	IPv4 or IPv6 gateway.
TYPE	Mandatory	string(enum)	Route type. **The value is described as follows:** 0: network segment route 1: host route 2: default route **Note:**The management network port supports only the network segment route and host route.

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Parameter	Mandatory/ Conditional	Type	Description
PORTTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: Ethernet port 7: bond port 9: logical port
TABLETYPE	Mandatory	string(enum)	Route table type. **The value is described as follows:** 1: default route table and strategy route table 2: strategy route table 3: default route table

Example

- Batch querying information about all routes of the port whose ID is 549772722433.

```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port_route?PORTID=549772722433

Response:
{
   "data": [
      {
         "DESTINATION": "0.0.0.0",
         "GATEWAY": "100.137.1.1",
         "MASK": "0.0.0.0",
         "PORTID": "549772722433",
         "PORTNAME": "CTE0.A7.P0",
         "PORTTYPE": "1",
         "TABLETYPE": "1",
         "TYPE": "2"
      }, ...
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.8 Interface for Batch Querying SAS Port Information

Function

This interface is used to batch query basic information about SAS ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sas_port

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 214: SAS port
ID	Mandatory	string	ID of a SAS port.
NAME	Mandatory	string	Name of a SAS port.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 208: expansion board 209: interface module
PARENTID	Mandatory	string	ID of a controller, expansion module, or interface module.
LOCATION	Mandatory	string	Location.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down
LOGICTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: expansion port
RUNSPEED	Mandatory	string(uint32)	Operating rate.
WWN	Mandatory	string	WWN.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: open false: close
INVALIDDWORD	Mandatory	string(uint32)	Number of invalid DWORDs.
DISPARITYERROR	Mandatory	string(uint32)	Number of inconsistency errors.

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Parameter	Mandatory/ Conditional	Type	Description
LOSSDWORD	Mandatory	string(uint32)	Number of lost DWORDs in synchronization.
PHYRESETERRORS	Mandatory	string(uint32)	Number of failed PHY resets.
STARTTIME	Mandatory	string	Time when statistics collection starts. The local time is returned by default.
CURRENT_PEER_PORT_ID	Mandatory	string	ID of the current peer port.
SUGGEST_PEER_PORT_ID	Mandatory	string	ID of the peer port that needs to be connected.
LIGHTSTATUS	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 1: on 2: off
ISMINISAS	Mandatory	string(bool)	Whether it is a mini SAS port. **The value is described as follows:** true: yes false: no
ENCLOSURE_WWN_LIST	Mandatory	string	List of WWNs of disk enclosures connected to the specific SAS port.
MAXSPEED	Mandatory	string(uint32)	Maximum speed.
peerPortName	Mandatory	string	Peer port name.
suggestPortName	Mandatory	string	Recommended local port name.
suggestPeerPortName	Mandatory	string	Recommended peer port name.

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Parameter	Mandatory/ Conditional	Type	Description
cableCheckResult	Conditional	enum	Code of the cable connection check result. **The value is described as follows:** 0: invalid cable connection status 1: incorrect cable connection 2: no cable connection 3: proper cable connection

Example

- Batch querying all SAS ports of the storage array.

```
Request: GET /deviceManager/rest/210235843910E6000009/sas_port

Response: {
   "data": [
      {
         "CURRENT_PEER_PORT_ID": "8867962880",
         "DISPARITYERROR": "0",
         "ENCLOSURE_WWN_LIST": "0x504f93883898a03f,",
         "HEALTHSTATUS": "1",
         "ID": "2039809",
         "INIORTGT": "2",
         "INVALIDDWORD": "0",
         "ISMINISAS": "false",
         "LIGHTSTATUS": "0",
         "LOCATION": "CTE0.A.EXP0",
         "LOGICTYPE": "1",
         "LOSSDWORD": "0",
         "MAXSPEED": "12000",
         "NAME": "EXP0",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "PHYRESETERRORS": "0",
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "10",
         "RUNSPEED": "12000",
         "STARTTIME": "1474200497",
         "SUGGEST_PEER_PORT_ID": "8867962880",
         "TYPE": 214,
         "WWN": "50022a1060708000",
         "peerPortName": "--",
         "suggestPortName": "--",
         "suggestPeerPortName": "--",
         "cableCheckResult": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Batch querying all SAS ports of the storage array. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/sas_port?timeConversion=0

Response: {
   "data": [
      {
         "CURRENT_PEER_PORT_ID": "8867962880",
         "DISPARITYERROR": "0",
         "ENCLOSURE_WWN_LIST": "0x504f93883898a03f,",
         "HEALTHSTATUS": "1",
         "ID": "2039809",
         "INIORTGT": "2",
         "INVALIDDWORD": "0",
         "ISMINISAS": "false",
         "LIGHTSTATUS": "0",
         "LOCATION": "CTE0.A.EXP0",
         "LOGICTYPE": "1",
         "LOSSDWORD": "0",
         "MAXSPEED": "12000",
         "NAME": "EXP0",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "PHYRESETERRORS": "0",
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "10",
         "RUNSPEED": "12000",
         "STARTTIME": "1474200497",
         "SUGGEST_PEER_PORT_ID": "8867962880",
         "TYPE": 214,
         "WWN": "50022a1060708000",
         "peerPortName": "--",
         "suggestPortName": "--",
         "suggestPeerPortName": "--",
         "cableCheckResult": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.9 Interface for Batch Querying VLAN Information

Function

This interface is used to batch query basic information about VLANs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: NAME, TAG, and fatherDrvType.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 1: 280: VLAN
ID	Mandatory	string	VLAN ID.
NAME	Mandatory	string	Indicates the VLAN name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: 0: unknown 2: 1: normal 3: 2: running 4: 10: link up 5: 11: link down 6: 53: initializing
TAG	Mandatory	string(uint32)	VLAN tag. **The value is described as follows:** [1,4094]
MTU	Mandatory	string(uint32)	Maximum transmission unit.
PORTTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: 1: ETH port 2: 7: bond port
PORTID	Mandatory	string	Port ID.
fatherDrvType	Mandatory	uint32	1: Ethernet interface module 2: RoCE interface module. **The value is described as follows:** 1 or 2.

Example

- Batch querying basic information about the first 100 VLANs whose IDs contain 1.

```
Request: GET /deviceManager/rest/210235843910E6000009/vlan?filter=TAG:1&range=[0-100]

Response: {
   "data": [
      {
         "ID": "4261543936",
         "MTU": "1500",
         "NAME": "CTE0.A.IOM1.P0.123",
         "PORTID": "131328",
         "PORTTYPE": "1",
         "RUNNINGSTATUS": "11",
```

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```
            "TAG": "123",
            "TYPE": 280,
            "fatherDrvType": 1
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.10 Interface for Implementing Associated Query of Bond Port Information

Function

This interface is used to implement associated query of basic information about bond ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sortby	Optional	string	Sorting criteria. **Note:** The bond ports can be sorted in descending or ascending order. If you want to sort the bond ports in ascending order, set the parameter to "sortby=NAME,a". If you want to sort the bond ports in descending order, set the parameter to "sortby=NAME,d".
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type of the associated object. **The value is described as follows:** 402: VM 15365: link of the HyperMetro quorum server 289: failover group **Note:** Only the following values are supported by OceanStor Dorado V3 all-flash array series: 15365: link of the HyperMetro quorum server 289: failover group Only the following values are supported by OceanStor 2200 V3, 2600 V3, and 2600 V3 for Video: 15365: link of the HyperMetro quorum server 289: failover group
ASSOCIATEOBJID	Mandatory	string	Failover group ID.
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type of the managed object. **The value is described as follows:** 235: bond port
ID	Mandatory	string	Bond port ID.
NAME	Mandatory	string	Bond port name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 4: partially damaged
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down
PORTIDLIST	Mandatory	string(array)	List of Ethernet ports.
MTU	Mandatory	string(uint32)	Maximum transmission unit.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	Indicates the mask of an IPv4 address.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 mask.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.
DEVICENAME	Mandatory	string	Device name of the port.

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Mandatory	string(enum)	OS type of the port service. **The value is described as follows:** -1: default value 1: applies to the storage operating system. 2: applies to the VM system. **Note:**This parameter is no longer used. The default value is -1, which is an invalid value.
bondInfo	Mandatory	string	Bond port member information.

Example

- Query the first 100 bond ports whose names contain b in failover group 0 and sort the bond ports by name in ascending order.

```
Request: GET /deviceManager/rest/2102358439l0E6000009/bond_port/associate?
ASSOCIATEOBJTYPE=289&ASSOCIATEOBJID=0&filter=NAME:b&range=[0-100]&sortby=NAME,a

Response: {
   "data": [
      {
         "DEVICENAME": "bond1",
         "HEALTHSTATUS": "1",
         "ID": "1970324837113601",
         "IPV4ADDR": "2.2.2.2",
         "IPV4MASK": "255.255.0.0",
         "IPV6ADDR": "",
         "IPV6MASK": "",
         "MTU": "1500",
         "NAME": "b1",
         "PORTIDLIST": "[\"281474976841730\",\"281474976841731\"]",
         "RUNNINGSTATUS": "10",
         "TYPE": 235,
         "USEDTYPE": "-1",
         "bondInfo": "CTE0.A.IOM0.P2,CTE0.A.IOM0.P3",
         "numberOfInitiators": "0"
      },
      {
         "DEVICENAME": "bond2",
         "HEALTHSTATUS": "1",
         "ID": "1970324837113602",
         "IPV4ADDR": "",
         "IPV4MASK": "",
         "IPV6ADDR": "",
         "IPV6MASK": "",
         "MTU": "1500",
         "NAME": "bond1",
```

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```
            "PORTIDLIST": "[\"281474976841985\",\"281474976841986\"]",
            "RUNNINGSTATUS": "11",
            "TYPE": 235,
            "USEDTYPE": "-1",
            "bondInfo": "CTE0.A.IOM1.P1,CTE0.A.IOM1.P2",
            "numberOfInitiators": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.11 Interface for Implementing Associated Query of Ethernet Port Information

Function

This interface is used to implement associated query of Ethernet port information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 257: port group 289: failover group 57888: network plane
ASSOCIATEOBJID	Mandatory	string	Port group ID, failover group ID, or network plane ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port
ID	Mandatory	string	Indicates the ID of an Ethernet port.
NAME	Mandatory	string	Indicates the name of an Ethernet port.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Mandatory	string	ID of a controller or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 7: Bit errors found
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 0: host port/service port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 13: front-end container port 14: back-end container port
MACADDRESS	Mandatory	string	MAC address.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
ETHDUPLEX	Mandatory	string(enum)	Duplex mode. **The value is described as follows:** 1: half duplex (HD) 2: full duplex (FD) 3: auto-negotiation
ETHNEGOTIATE	Mandatory	string(enum)	Negotiation mode. **The value is described as follows:** 1: HD 2: FD 3: auto-negotiation
MTU	Mandatory	string(uint32)	Maximum transmission unit (MTU).
BONDNAME	Mandatory	string	Bond name.

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Parameter	Mandatory/ Conditional	Type	Description
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV4GATEWAY	Mandatory	string	IPv4 gateway.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 mask.
IPV6GATEWAY	Mandatory	string	IPv6 gateway.
ISCSITCPPORT	Mandatory	string	iSCSI port ID.
ISCSINAME	Mandatory	string	iSCSI name.
ERRORPACKETS	Mandatory	string(uint32)	Number of error packets.
LOSTPACKETS	Mandatory	string(uint32)	Number of lost packets.
OVERFLOWEDPACKETS	Mandatory	string(uint32)	Number of overflowed packets.
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default.
SPEED	Mandatory	string(uint32)	Port working rate. **Unit:**Mbit/s
selectType	Mandatory	string(enum)	Queries the specified type of the current port when the storage system has multiple controllers. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
zoneId	Mandatory	string	ID of the switching plane connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.

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Parameter	Mandatory/ Conditional	Type	Description
dswId	Mandatory	string	ID of the switch (virtual) connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
dswLinkRight	Mandatory	string	Status of the connection between the specified port and switch. **The value is described as follows:** 0: incorrect 1: correct **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: on false: off
BONDID	Conditional	string	ID of the bond port of the ETH port. **Note:**This field is valid only after port bonding.
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
OWNINGCONTROLLER	Mandatory	string	Owning controller of the port.
crcErrors	Mandatory	string(uint32)	Number of CRC errors.
frameErrors	Mandatory	string(uint32)	Number of frame errors.
frameLengthErrors	Mandatory	string(uint32)	Number of frame length errors.

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Parameter	Mandatory/ Conditional	Type	Description
maxSpeed	Mandatory	string(uint64)	Max working rate. **Unit:**Mbit/s
numberOfInitiators	Mandatory	string(uint32)	Number of host initiators.
workModeType	Mandatory	string(enum)	Mode type of the Ethernet port. **The value is described as follows:** 0: invalid 1: 10GE_AUTOADAPT 2: 25GE_AUTOADAPT 3: 10GE_BASEFEC 4: 10GE_NOFEC 5: 25GE_NOFEC 6: 25GE_BASEFEC 7: 25GE_RSFEC 8: 40GE_AUTOADAPT 9: 100GE_AUTOADAPT 10: 40GE_BASEFEC 11: 40GE_NOFEC 12: 100GE_NOFEC 13: 100GE_RSFEC 14: AUTONEG
workModeList	Mandatory	string(array)	List of Ethernet port working modes. **Note:**The returned value is a combination of workModeType enumeration types.
physicalType	Mandatory	uint32	Physical port type. **The value is described as follows:** 1: ETH 2: RoCE
vlan	Conditional	string	VLAN ID. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Mandatory	enum	Port usage type. **The value is described as follows:** 1: applicable to the storage OS 2: applicable to the VM system **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
DEVICENAME	Conditional	string	Device name. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
portUsage	Conditional	enum	Port usage. **The value is described as follows:** 1: service 2: management 3: maintenance **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
totalReceivedPackets	Conditional	uint32	Total number of received packets. **Note:**The value is returned when the port is a service port.
totalTransmittedPackets	Conditional	uint32	Total number of transmitted packets. **Note:**The value is returned when the port is a service port.

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Parameter	Mandatory/ Conditional	Type	Description
totalReceivedBytes	Conditional	uint32	Total number of received bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.
totalTransmittedBytes	Conditional	uint32	Total number of transmitted bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.
receivedPacketsPerSec	Conditional	uint32	Average number of packets received per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
transmittedPacket-sPerSec	Conditional	uint32	Average number of packets transmitted per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
receivedBytesPerSec	Conditional	uint32	Average number of bytes received per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.

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Parameter	Mandatory/ Conditional	Type	Description
transmittedBytesPer-Sec	Conditional	uint32	Average number of bytes transmitted per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
portFilter	Mandatory	enum	Port function filter. **The value is described as follows:** 0: Used to configure IP addresses 1: Used to create LIFs 2: Used to create VLANs 3: Used to create binding 4: Port added to a customized failover group 5: Port added to a VM 6: Port added to a quorum link **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]

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Parameter	Mandatory/ Conditional	Type	Description
trust	Conditional	enum	Trust mode of a RoCE port. **The value is described as follows:** 0:PCP. 1:DSCP. **Note:**If the trust mode of a RoCE port is DSCP, you can directly create a logical port on the port. By default, the logical port is PCP.
defWorkNode	Conditional	string	Default home node. **The value is described as follows:** The value is a string of 1 to 32 characters, including digits and letters.

Example

- Querying all Ethernet ports belonging to port group "0".

```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port/associate?
ASSOCIATEOBJTYPE=257&ASSOCIATEOBJID=0

Response: {
   "data": {
      "BONDID": "",
      "BONDNAME": "",
      "DEVICENAME": "",
      "ERRORPACKETS": "0",
      "ETHDUPLEX": "2",
      "ETHNEGOTIATE": "3",
      "HEALTHSTATUS": "1",
      "ID": "281479271810306",
      "INIORTGT": "4",
      "IPV4ADDR": "",
      "IPV4GATEWAY": "",
      "IPV4MASK": "",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISCSINAME": "",
      "ISCSITCPPORT": "0",
      "LOCATION": "CTE0.B5.P2",
      "LOGICTYPE": "0",
      "LOSTPACKETS": "0",
      "MACADDRESS": "10:51:72:4c:75:0d",
      "MTU": "1500",
      "NAME": "P2",
      "OVERFLOWEDPACKETS": "0",
      "OWNINGCONTROLLER": "0B",
```

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```
        "PARENTID": "0B.5",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "10",
        "SHARETYPE": "0",
        "SPEED": "1000",
        "STARTTIME": "1596469325",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "4294967295",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "1000",
        "numberOfInitiators": "0",
        "peerPortName": "",
        "physicalType": "1",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "0",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[]",
        "workModeType": "0",
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying all Ethernet ports belonging to port group "0". The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port/associate?
ASSOCIATEOBJTYPE=257&ASSOCIATEOBJID=0&timeConversion=0

Response: {
    "data": {
        "BONDID": "",
        "BONDNAME": "",
        "DEVICENAME": "",
        "ERRORPACKETS": "0",
        "ETHDUPLEX": "2",
        "ETHNEGOTIATE": "3",
        "HEALTHSTATUS": "1",
        "ID": "281479271810306",
        "INIORTGT": "4",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISCSINAME": "",
        "ISCSITCPPORT": "0",
```

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```
        "LOCATION": "CTE0.B5.P2",
        "LOGICTYPE": "0",
        "LOSTPACKETS": "0",
        "MACADDRESS": "10:51:72:4c:75:0d",
        "MTU": "1500",
        "NAME": "P2",
        "OVERFLOWEDPACKETS": "0",
        "OWNINGCONTROLLER": "0B",
        "PARENTID": "0B.5",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "10",
        "SHARETYPE": "0",
        "SPEED": "1000",
        "STARTTIME": "1596469325",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "4294967295",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "1000",
        "numberOfInitiators": "0",
        "peerPortName": "",
        "physicalType": "1",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "0",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[]",
        "workModeType": "0",
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.12 Interface for Implementing Associated Query of Fibre Channel Port Information

Function

This interface is used to implement associated query of basic information about Fibre Channel ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_port/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 257: port group 224: remote device 20485: replication port group
ASSOCIATEOBJID	Mandatory	string	Port group ID. **The value is described as follows:** -
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 212: Fibre Channel port
ID	Mandatory	string	Fibre Channel port ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Fibre Channel port name. **The value is described as follows:** -
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Mandatory	string	ID of a controller or interface module. **The value is described as follows:** -
LOCATION	Mandatory	string	Location. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logical type of a port. **The value is described as follows:** 0: host port/service port
RUNSPEED	Mandatory	string(uint32)	Operating speed. **The value is described as follows:** "-1" is returned if the port works incorrectly. **Unit:**Mbit/s
CONFSPEED	Mandatory	string(uint32)	Configured speed. **The value is described as follows:** 0 indicates auto-negotiation. The current speed can be 1 Gbit/s, 2 Gbit/s, 4 Gbit/s, 8 Gbit/s, and 16 Gbit/s. The conversion unit is 1000. The device returns the value by default. **Unit:**Mbit/s
WWN	Mandatory	string	WWN. **The value is described as follows:** -
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
SFPSTATUS	Mandatory	string(enum)	Optical module status. **The value is described as follows:** 0: absent 1: offline 2: online

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Parameter	Mandatory/ Conditional	Type	Description
FCCONFMODE	Mandatory	string(enum)	Configured mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: auto "-1" is returned if the port works incorrectly.
FCRUNMODE	Mandatory	string(enum)	Operating mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: auto "-1" is returned if the port works incorrectly.
LOSTSIGNALS	Mandatory	string(uint32)	Number of errors (the Loss of Signal type). **The value is described as follows:** -
BADCHARNUMBER	Mandatory	string(uint32)	Number of errors (the Bad RX Char type). **The value is described as follows:** -
LOSTSYNC	Mandatory	string(uint32)	Number of errors (the Loss of Sync type). **The value is described as follows:** -
LINKFAIL	Mandatory	string(uint32)	Number of errors (the Link Fail type). **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default. **The value is described as follows:** -
FLOGINDELAYTIMES	Mandatory	string(uint32)	Latency of running the flogin command. **The value is described as follows:** -
MAXSUPPORTSPEED	Mandatory	string(uint32)	Maximum rate of a Fibre Channel port. **The value is described as follows:** 1000 2000 4000 8000 16000 **Unit:**Mbit/s
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: off false: on
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
MAXSPEED	Mandatory	string(uint32)	Maximum speed. **The value is described as follows:** - **Unit:**Mbit/s
BADCRCNUM	Mandatory	string(uint32)	Number of CRC errors. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
endOfFrameErrors	Mandatory	string(uint32)	Number of frame end sign errors. **The value is described as follows:** -
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity. **The value is described as follows:** -

Example

- Implementing associated query of basic information about Fibre Channel ports in the port group whose ID is 0.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port/associate?
ASSOCIATEOBJTYPE=257&ASSOCIATEOBJID=0

Response:
{
   "data": [
      {
         "BADCHARNUMBER": "24",
         "BADCRCNUM": "0",
         "CONFSPEED": "0",
         "FCCONFMODE": "3",
         "FCRUNMODE": "1",
         "FLOGINDELAYTIMES": "0",
         "HEALTHSTATUS": "1",
         "ID": "1114368",
         "INIORTGT": "4",
         "LINKFAIL": "0",
         "LOCATION": "CTE0.A.IOM1.P0",
         "LOGICTYPE": "0",
         "LOSTSIGNALS": "0",
         "LOSTSYNC": "0",
         "MAXSUPPORTSPEED": "16000",
         "NAME": "P0",
         "PARENTID": "0A.1",
         "PARENTTYPE": 209,
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "10",
         "RUNSPEED": "8000",
         "SFPSTATUS": "2",
         "STARTTIME": "1456152959",
         "TYPE": 212,
         "WWN": "20081051720c8a61",
         "endOfFrameErrors": "0",
         "lightStatus": "0",
         "numberOfInitiators": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Implementing associated query of basic information about Fibre Channel ports in the port group whose ID is 0. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port/associate?
ASSOCIATEOBJTYPE=257&ASSOCIATEOBJID=0&timeConversion=0

Response:
{
   "data": [
      {
         "BADCHARNUMBER": "24",
         "BADCRCNUM": "0",
         "CONFSPEED": "0",
         "FCCONFMODE": "3",
         "FCRUNMODE": "1",
         "FLOGINDELAYTIMES": "0",
         "HEALTHSTATUS": "1",
         "ID": "1114368",
         "INIORTGT": "4",
         "LINKFAIL": "0",
         "LOCATION": "CTE0.A.IOM1.P0",
         "LOGICTYPE": "0",
         "LOSTSIGNALS": "0",
         "LOSTSYNC": "0",
         "MAXSUPPORTSPEED": "16000",
         "NAME": "P0",
         "PARENTID": "0A.1",
         "PARENTTYPE": 209,
         "PORTSWITCH": "true",
         "RUNNINGSTATUS": "10",
         "RUNSPEED": "8000",
         "SFPSTATUS": "2",
         "STARTTIME": "1456152959",
         "TYPE": 212,
         "WWN": "20081051720c8a61",
         "endOfFrameErrors": "0",
         "lightStatus": "0",
         "numberOfInitiators": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.13 Interface for Querying an IPsec Policy

Function

Query IPsec policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
logicalPortName	Mandatory	string	Name of a logical port. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), periods (.), and hyphens (-).
ipsecMode	Mandatory	enum	Encryption algorithm template. **The value is described as follows:** 0:AES;1:SM4

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Application Scope

For internal use by R&D engineers.

Example

- Query information about a specified IPsec policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ipsec_policy?name=testIPsec

Response: {
   "data": [
      {
         "name": "testIPsec",
         "logicalPortName": "testLif",
         "ipsecMode": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.14 Interface for Querying Associated Logical Port Information

Function

This interface is used to query associated basic information about a logical port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 224: remote device 20485: replication port group
ASSOCIATEOBJID	Mandatory	string	ID of the remote device or replication port group. **The value is described as follows:** -

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 279: logical port
ID	Mandatory	string	ID of a logical port. **The value is described as follows:** -
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered 110: Standby
IPV4ADDR	Mandatory	string	Logical port IPv4 address. **The value is described as follows:** -
IPV4MASK	Mandatory	string	Logical port IPv4 mask. **The value is described as follows:** -
IPV4GATEWAY	Mandatory	string	Logical port IPv4 gateway. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
IPV6ADDR	Mandatory	string	Logical port IPv6 address. **The value is described as follows:** -
IPV6MASK	Mandatory	string	Logical port IPv6 prefix. **The value is described as follows:** -
IPV6GATEWAY	Mandatory	string	Logical port IPv6 gateway. **The value is described as follows:** -
ROLE	Mandatory	string(enum)	Role of a logical port. **The value is described as follows:** 1: management 2: service 3: management +service

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Parameter	Mandatory/ Conditional	Type	Description
SUPPORTPROTOCOL	Mandatory	string(uint32)	Supported protocol. **The value is described as follows:** 0: NONE 1: NFS (bit 0 for the NFS switch) 2: CIFS (bit 1 for the CIFS switch) 3: NFS + CIFS 4: iSCSI (bit 2 for the iSCSI switch) 8: FC/FCoE (bit 3 for the FC/FCoE switch) 512: BGP (bit 9 for the BGP switch) If the bit switch is 0, the protocol is not supported. If the bit switch is 1, the protocol is supported. It is convenient for expanding subsequent protocols. **Note:**Currently, this field is not supported.
HOMEPORTTYPE	Mandatory	string(enum)	Type of the parent port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
HOMEPORTID	Mandatory	string	ID of the parent port. **The value is described as follows:** -
HOMEPORTNAME	Mandatory	string	Name of the parent port. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
HOMECONTROLLERID	Mandatory	string	ID of the parent controller. **The value is described as follows:** -
CURRENTPORTTYPE	Mandatory	string(enum)	Type of the current port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
CURRENTPORTID	Mandatory	string	ID of the current port. **The value is described as follows:** -
CURRENTPORTNAME	Mandatory	string	Name of the current port. **The value is described as follows:** -
CURRENTCONTROLLERID	Mandatory	string	ID of the current controller. **The value is described as follows:** -
OPERATIONALSTATUS	Mandatory	string(bool)	Whether the port is activated. **The value is described as follows:** true: activated false: not activated
ADDRESSFAMILY	Mandatory	string(enum)	TCP/IP version. **The value is described as follows:** 0: IPv4 1: IPv6

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERGROUPID	Mandatory	string	ID of the owning failover group. **The value is described as follows:** -
FAILOVERGROUPNAME	Mandatory	string	Name of the owning failover group. **The value is described as follows:** -
CANFAILOVER	Mandatory	string(bool)	Indicates whether failover is enabled. The default value is true. **The value is described as follows:** true: enabled false: disabled
FAILBACKMODE	Mandatory	string(enum)	Failback mode. **The value is described as follows:** 0: not supported 1: manual 2: auto
ISPRIVATE	Mandatory	string(bool)	Whether it is configurable. **The value is described as follows:** true: not configurable false: configurable
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
MANAGEMENTACCESS	Mandatory	string	Manages the access mode. **The value is described as follows:** -
ddnsStatus	Mandatory	string(enum)	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".
dnsZoneName	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.

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Parameter	Mandatory/ Conditional	Type	Description
listenDnsQueryEnabled	Conditional	string(enum)	Whether to listen for DNS query requests. **The value is described as follows:** 0: NO 1: YES
isDefLif	Mandatory	bool	Whether it is created by default. **The value is described as follows:** false: not created by default true: created by default
LogicalType	Mandatory	enum	Logic type. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
WORKSTATUS	Mandatory	enum	Working status. **The value is described as follows:** 0: Standby 1: Working
HOMESITEWWN	Mandatory	string	Home site WWN of the LIF. **The value is described as follows:** -

Example

- Querying all logical ports associated with remote device "0".

```
Request: GET /deviceManager/rest/210235843910E6000009/lif/associate?
ASSOCIATEOBJTYPE=224&ASSOCIATEOBJID=0

Response:
{
   "data": {
      "ADDRESSFAMILY": "0",'
      "CANFAILOVER": "true",
      "CURRENTCONTROLLERID": "0A",
      "CURRENTPORTID": "131328",
```

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```
        "CURRENTPORTNAME": "CTE0.A.IOM1.P0",
        "CURRENTPORTTYPE": "1",
        "FAILBACKMODE": "2",
        "FAILOVERGROUPID": "0",
        "FAILOVERGROUPNAME": "System-defined",
        "HOMECONTROLLERID": "0A",
        "HOMEPORTID": "131328",
        "HOMEPORTNAME": "CTE0.A.IOM1.P0",
        "HOMEPORTTYPE": "1",
        "ID": "4278321152",
        "IPV4ADDR": "172.1.1.1",
        "IPV4GATEWAY": "",
        "IPV4MASK": "255.255.0.0",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISPRIVATE": "false",
        "LogicalType": "0",
        "MANAGEMENTACCESS": "--",
        "NAME": "lif1",
        "OPERATIONALSTATUS": "true",
        "ROLE": "2",
        "RUNNINGSTATUS": "11",
        "SUPPORTPROTOCOL": "--",
        "TYPE": 279,
        "ddnsStatus": 1,
        "dnsZoneName": "--",
        "listenDnsQueryEnabled": "--",
        "isDefLif": "false",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "WORKSTATUS":"1",
        "HOMESITEWWN":'XXX'
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.15 Interface for Querying Bond Port Information

Function

This interface is used to query basic information about a bond port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Bond port ID.

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 235: bond port
ID	Mandatory	string	Bond port ID.
NAME	Mandatory	string	Bond port name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 4: partially damaged
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down
PORTIDLIST	Mandatory	string(array)	List of Ethernet ports.
MTU	Mandatory	string(uint32)	Maximum transmission unit.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 prefix.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.
DEVICENAME	Mandatory	string	Device name of the port.

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Parameter	Mandatory/ Conditional	Type	Description
USEDTYPE	Mandatory	string(enum)	OS type of the port service. **The value is described as follows:** -1: default value 1: applies to the storage operating system. 2: applies to the VM system. **Note:**This parameter is no longer used. The default value is -1, which is an invalid value.
bondInfo	Mandatory	string	Information about the member ports of a bond port.

Example

- Query information about the bond port whose ID is 1970324837113601.

```
Request: GET /deviceManager/rest/210235843910E6000009/bond_port/1970324837113601

Response: {
   "data": {
      "DEVICENAME": "bond1",
      "HEALTHSTATUS": "1",
      "ID": "1970324837113601",
      "IPV4ADDR": "2.2.2.2",
      "IPV4MASK": "255.255.0.0",
      "IPV6ADDR": "",
      "IPV6MASK": "",
      "MTU": "1500",
      "NAME": "b1",
      "PORTIDLIST": "[\"281474976841730\",\"281474976841731\"]",
      "RUNNINGSTATUS": "10",
      "TYPE": 235,
      "USEDTYPE": "-1",
      "bondInfo": "CTE0.A.IOM0.P2,CTE0.A.IOM0.P3",
      "numberOfInitiators": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.4.16 Interface for Querying Ethernet Port Information

Function

This interface is used to query basic information about an Ethernet port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/eth_port/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Ethernet port ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 213: Ethernet port
ID	Mandatory	string	Indicates the ID of an Ethernet port.
NAME	Mandatory	string	Indicates the name of an Ethernet port.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 209: interface module
PARENTID	Mandatory	string	ID of a controller or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 7: Bit errors found
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered
LOGICTYPE	Mandatory	string(enum)	Logical type of a port. **The value is described as follows:** 0: host port/service port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 13: front-end container port 14: back-end container port
MACADDRESS	Mandatory	string	MAC address.

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Parameter	Mandatory/ Conditional	Type	Description
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
ETHDUPLEX	Mandatory	string(enum)	Duplex mode. **The value is described as follows:** 1: half duplex (HD) 2: full duplex (FD) 3: auto-negotiation
ETHNEGOTIATE	Mandatory	string(enum)	Negotiation mode. **The value is described as follows:** 1: HD 2: FD 3: auto-negotiation
MTU	Mandatory	string(uint32)	Maximum transmission unit (MTU).
BONDNAME	Mandatory	string	Bond name.
IPV4ADDR	Mandatory	string	IPv4 address.
IPV4MASK	Mandatory	string	IPv4 mask.
IPV4GATEWAY	Mandatory	string	IPv4 gateway.
IPV6ADDR	Mandatory	string	IPv6 address.
IPV6MASK	Mandatory	string	IPv6 mask.
IPV6GATEWAY	Mandatory	string	IPv6 gateway.
ISCSITCPPORT	Mandatory	string	iSCSI port ID.
ISCSINAME	Mandatory	string	iSCSI name.
ERRORPACKETS	Mandatory	string(uint32)	Number of error packets.
LOSTPACKETS	Mandatory	string(uint32)	Number of lost packets.
OVERFLOWEDPACKETS	Mandatory	string(uint32)	Number of overflowed packets.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default.
SPEED	Mandatory	string(uint32)	Port working rate. **Unit:**Mbit/s
maxSpeed	Mandatory	string(uint64)	Max working rate. **Unit:**Mbit/s
selectType	Mandatory	string(enum)	Queries the specified type of the current port when the storage system has multiple controllers. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
zoneId	Mandatory	string	ID of the switching plane connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
dswId	Mandatory	string	ID of the switch (virtual) connecting to the port in scale-out. **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.
dswLinkRight	Mandatory	string	Status of the connection between the specified port and switch. **The value is described as follows:** 0: incorrect 1: correct **Note:**This field is valid only when LOGICTYPE is IP_SCALE_OUT.

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Parameter	Mandatory/ Conditional	Type	Description
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: on false: off
BONDID	Conditional	string	ID of the bond port of the ETH port. **Note:**This field is valid only after port bonding.
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
OWNINGCONTROLLER	Mandatory	string	Owning controller of the port.
SHARETYPE	Mandatory	enum	Share type. **The value is described as follows:** 0: The port is not shared. 1: The port is shared by all nodes in the enclosure. 2: The port is shared by all nodes in the cluster.
crcErrors	Mandatory	string(uint32)	Number of CRC errors.
frameErrors	Mandatory	string(uint32)	Number of frame errors.
frameLengthErrors	Mandatory	string(uint32)	Number of frame length errors.
numberOfInitiators	Mandatory	string(uint32)	Number of host initiators.

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Parameter	Mandatory/ Conditional	Type	Description
workModeType	Mandatory	string(enum)	Mode type of the Ethernet port. **The value is described as follows:** 0: invalid 1: 10GE_AUTOADAPT 2: 25GE_AUTOADAPT 3: 10GE_BASEFEC 4: 10GE_NOFEC 5: 25GE_NOFEC 6: 25GE_BASEFEC 7: 25GE_RSFEC 8: 40GE_AUTOADAPT 9: 100GE_AUTOADAPT 10: 40GE_BASEFEC 11: 40GE_NOFEC 12: 100GE_NOFEC 13: 100GE_RSFEC 14: AUTONEG
workModeList	Mandatory	string(array)	List of Ethernet port working modes. **Note:**The returned value is a combination of workModeType enumeration types.
peerPortName	Mandatory	string	Peer port name.
suggestPortName	Mandatory	string	Recommended local port name.
suggestPeerPortName	Mandatory	string	Recommended peer port name.

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Parameter	Mandatory/ Conditional	Type	Description
checkResult	Mandatory	enum	Code of the cable connection check result. **The value is described as follows:** 0: invalid cable connection status 1: incorrect cable connection 2: no cable connection 3: proper cable connection
physicalType	Mandatory	uint32	Physical port type. **The value is described as follows:** 1: ETH 2: RoCE
snsdSwitch	Mandatory	uint32	Switch status of the SNSD function. **The value is described as follows:** 0: The SNSD function is disabled. 1: The SNSD function is enabled.
vlan	Conditional	string	VLAN ID. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
USEDTYPE	Mandatory	enum	Port usage type. **The value is described as follows:** 1: applicable to the storage OS 2: applicable to the VM system **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]

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Parameter	Mandatory/ Conditional	Type	Description
DEVICENAME	Conditional	string	Device name. **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
portUsage	Conditional	enum	Port usage. **The value is described as follows:** 1: service 2: management 3: maintenance **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
totalReceivedPackets	Conditional	uint32	Total number of received packets. **Note:**The value is returned when the port is a service port.
totalTransmittedPackets	Conditional	uint32	Total number of transmitted packets. **Note:**The value is returned when the port is a service port.
totalReceivedBytes	Conditional	uint32	Total number of received bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.
totalTransmittedBytes	Conditional	uint32	Total number of transmitted bytes. **Unit:**bytes **Note:**The value is returned when the port is a service port.

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Parameter	Mandatory/ Conditional	Type	Description
receivedPacketsPerSec	Conditional	uint32	Average number of packets received per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
transmittedPacket-sPerSec	Conditional	uint32	Average number of packets transmitted per second within the last statistical period. **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
receivedBytesPerSec	Conditional	uint32	Average number of bytes received per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.
transmittedBytesPer-Sec	Conditional	uint32	Average number of bytes transmitted per second within the last statistical period. **Unit:**bytes/s **Note:** The value is returned when the port is a service port. The statistical period is 30 seconds.

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Parameter	Mandatory/ Conditional	Type	Description
portFilter	Mandatory	enum	Port function filter. **The value is described as follows:** 0: Used to configure IP addresses 1: Used to create LIFs 2: Used to create VLANs 3: Used to create binding 4: Port added to a customized failover group 5: Port added to a VM 6: Port added to a quorum link **Note:**[NOTE:This field is not supported by the current version. The returned value is invalid.]
trust	Conditional	enum	Trust mode of a RoCE port. **The value is described as follows:** 0:PCP. 1:DSCP. **Note:**If the trust mode of a RoCE port is DSCP, you can directly create a logical port on the port. By default, the logical port is PCP.
defWorkNode	Conditional	string	Default home node. **The value is described as follows:** The value is a string of 1 to 32 characters, including digits and letters.

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Example

- Querying basic information about Ethernet port "139264".

```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port/139264

Response: {
   "data": {
      "BONDID": "",
      "BONDNAME": "",
      "DEVICENAME": "",
      "ERRORPACKETS": "0",
      "ETHDUPLEX": "2",
      "ETHNEGOTIATE": "3",
      "HEALTHSTATUS": "1",
      "ID": "281479271810306",
      "INIORTGT": "4",
      "IPV4ADDR": "",
      "IPV4GATEWAY": "",
      "IPV4MASK": "",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISCSINAME": "",
      "ISCSITCPPORT": "0",
      "LOCATION": "CTE0.B5.P2",
      "LOGICTYPE": "0",
      "LOSTPACKETS": "0",
      "MACADDRESS": "10:51:72:4c:75:0d",
      "MTU": "1500",
      "NAME": "P2",
      "OVERFLOWEDPACKETS": "0",
      "OWNINGCONTROLLER": "0B",
      "PARENTID": "0B.5",
      "PARENTTYPE": 209,
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "10",
      "SHARETYPE": "0",
      "SPEED": "1000",
      "STARTTIME": "1596469325",
      "TYPE": 213,
      "USEDTYPE": "0",
      "checkResult": "0",
      "crcErrors": "0",
      "dswId": "4294967295",
      "dswLinkRight": "4294967295",
      "frameErrors": "0",
      "frameLengthErrors": "0",
      "lightStatus": "0",
      "maxSpeed": "1000",
      "numberOfInitiators": "0",
      "peerPortName": "",
      "physicalType": "1",
      "portFilter": "0",
      "portUsage": "0",
      "receivedBytesPerSec": "0",
      "receivedPacketsPerSec": "0",
      "selectType": "0",
      "snsdSwitch": "0",
      "suggestPeerPortName": "",
      "suggestPortName": "",
      "totalReceivedBytes": "0",
      "totalReceivedPackets": "0",
      "totalTransmittedBytes": "0",
      "totalTransmittedPackets": "0",
      "transmittedBytesPerSec": "0",
      "transmittedPacketsPerSec": "0",
      "vlan": "",
      "workModeList": "[]",
      "workModeType": "0",
```

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```
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying basic information about Ethernet port "139264". The UTC time is returned time.


```
Request: GET /deviceManager/rest/210235843910E6000009/eth_port/139264?timeConversion=0

Response: {
    "data": {
        "BONDID": "",
        "BONDNAME": "",
        "DEVICENAME": "",
        "ERRORPACKETS": "0",
        "ETHDUPLEX": "2",
        "ETHNEGOTIATE": "3",
        "HEALTHSTATUS": "1",
        "ID": "281479271810306",
        "INIORTGT": "4",
        "IPV4ADDR": "",
        "IPV4GATEWAY": "",
        "IPV4MASK": "",
        "IPV6ADDR": "",
        "IPV6GATEWAY": "",
        "IPV6MASK": "",
        "ISCSINAME": "",
        "ISCSITCPPORT": "0",
        "LOCATION": "CTE0.B5.P2",
        "LOGICTYPE": "0",
        "LOSTPACKETS": "0",
        "MACADDRESS": "10:51:72:4c:75:0d",
        "MTU": "1500",
        "NAME": "P2",
        "OVERFLOWEDPACKETS": "0",
        "OWNINGCONTROLLER": "0B",
        "PARENTID": "0B.5",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "10",
        "SHARETYPE": "0",
        "SPEED": "1000",
        "STARTTIME": "1596469325",
        "TYPE": 213,
        "USEDTYPE": "0",
        "checkResult": "0",
        "crcErrors": "0",
        "dswId": "4294967295",
        "dswLinkRight": "4294967295",
        "frameErrors": "0",
        "frameLengthErrors": "0",
        "lightStatus": "0",
        "maxSpeed": "1000",
        "numberOfInitiators": "0",
        "peerPortName": "",
        "physicalType": "1",
        "portFilter": "0",
        "portUsage": "0",
        "receivedBytesPerSec": "0",
        "receivedPacketsPerSec": "0",
        "selectType": "0",
        "snsdSwitch": "0",
        "suggestPeerPortName": "",
        "suggestPortName": "",
        "totalReceivedBytes": "0",
        "totalReceivedPackets": "0",
```


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```
        "totalTransmittedBytes": "0",
        "totalTransmittedPackets": "0",
        "transmittedBytesPerSec": "0",
        "transmittedPacketsPerSec": "0",
        "vlan": "",
        "workModeList": "[]",
        "workModeType": "0",
        "zoneId": "4294967295"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.17 Interface for Querying Failover Group Information

Function

This interface is used to query basic information about a failover group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the failover group.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 289: failover group
ID	Mandatory	string	Failover group ID.
NAME	Mandatory	string	Name of the failover group.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERGROUPTYPE	Mandatory	string(enum)	Type of the failover group. **The value is described as follows:** 1: system 2: VLAN 3: customized
failoverGroupService-Type	Mandatory	enum	Service type of the failover group. **The value is described as follows:** 0: NAS 3: BGP
failoverGroupIpType	Conditional	enum	IP address type of the failover group. **The value is described as follows:** 0: IPv4 1: IPv6 **Note:**This parameter is returned only when the service type of the failover group is BGP.

Example

- Querying basic information about the failover group whose ID is 0.

```
Request: GET /deviceManager/rest/210235843910E6000009/failovergroup/0

Response:
{
  "data": {
    "DESCRIPTION": "System-FailoverGroup",
    "FAILOVERGROUPTYPE": "1",
    "ID": "0",
    "NAME": "System-defined",
    "TYPE": 289,
    "failoverGroupServiceType": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

- Query information about a BGP failover group.

```
Request: GET /deviceManager/rest/210235843910E6000009/failovergroup/1

Response:
{
```

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```
 "data": {
   "DESCRIPTION": "description",
   "FAILOVERGROUPTYPE": "3",
   "ID": "1",
   "NAME": "bgpFg1",
   "TYPE": 289,
   "failoverGroupIpType": "1",
   "failoverGroupServiceType": "3"
 },
 "error": {
   "code": 0,
   "description": "0"
 }
}
```


2.6.9.4.18 Interface for Querying Fibre Channel Port Information

Function

This interface is used to query basic information about a Fibre Channel port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_port/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fibre Channel port ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time
vstoreId	Optional	string	vStore ID. **The value is described as follows:** The value contains 1 to 256 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**256

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 212: Fibre Channel port.
ID	Mandatory	string	Fibre Channel port ID.
NAME	Mandatory	string	Fibre Channel port name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller. 209: interface module.
PARENTID	Mandatory	string	ID of a controller or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 3: About to fail 9: Inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 2: Running 10: Link up 11: Link down

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logical type of a port. **The value is described as follows:** 0: host port/service port
RUNSPEED	Mandatory	string(uint32)	Operating speed. **The value is described as follows:** "-1" is returned if the port works incorrectly. **Unit:**Mbit/s
CONFSPEED	Mandatory	string(uint32)	Configured speed. **The value is described as follows:** 0 indicates auto-negotiation. The current speed can be 1 Gbit/s, 2 Gbit/s, 4 Gbit/s, 8 Gbit/s, and 16 Gbit/s. The conversion unit is 1000. The device returns the value by default. **Unit:**Mbit/s
WWN	Mandatory	string	WWN.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
SFPSTATUS	Mandatory	string(enum)	Optical module status. **The value is described as follows:** 0: absent 1: offline 2: online

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Parameter	Mandatory/ Conditional	Type	Description
FCCONFMODE	Mandatory	string(enum)	Configured mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: auto "-1" is returned if the port works incorrectly.
FCRUNMODE	Mandatory	string(enum)	Operating mode. **The value is described as follows:** 0: fabric 1: FC-AL 2: P2P 3: auto "-1" is returned if the port works incorrectly.
LOSTSIGNALS	Mandatory	string(uint32)	Number of errors (the Loss of Signal type).
BADCHARNUMBER	Mandatory	string(uint32)	Number of errors (the Bad RX Char type).
LOSTSYNC	Mandatory	string(uint32)	Number of errors (the Loss of Sync type).
LINKFAIL	Mandatory	string(uint32)	Number of errors (the Link Fail type).
STARTTIME	Mandatory	string(uint32)	Time when statistics starts. The local time is returned by default.
FLOGINDELAYTIMES	Mandatory	string(uint32)	Latency of running the flogin command.

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Parameter	Mandatory/ Conditional	Type	Description
MAXSUPPORTSPEED	Mandatory	string(uint32)	Maximum rate of a Fibre Channel port. **The value is described as follows:** The maximum port speed can be 1 Gbit/s, 2 Gbit/s, 4 Gbit/s, 8 Gbit/s, and 16 Gbit/s. The conversion unit is 1000. **Unit:**Mbit/s
lightStatus	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** false: off true: on
fastWriteEnable	Mandatory	string(uint32)	FastWrite switch status. **The value is described as follows:** 0: off 1: on
MAXSPEED	Mandatory	string(uint32)	Maximum speed. **Unit:**Mbit/s
BADCRCNUM	Mandatory	string(uint32)	Number of CRC errors.
endOfFrameErrors	Mandatory	string(uint32)	Number of frame end sign errors.
numberOfInitiators	Mandatory	string(uint32)	Host initiator quantity.

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Parameter	Mandatory/ Conditional	Type	Description
protocol	Mandatory	string(uint32)	Protocol type of the Fibre Channel port. **The value is described as follows:** 1: FC-SCSI 2: FC_NVMe 3: FC-SCSI & FC-NVMe

Example

- Querying basic information about the Fibre Channel port whose ID is 549773705216.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port/549773705216

Response: {
   "data": {
      "BADCHARNUMBER": "0",
      "BADCRCNUM": "0",
      "CONFSPEED": "0",
      "FCCONFMODE": "3",
      "FCRUNMODE": "-1",
      "FLOGINDELAYTIMES": "0",
      "HEALTHSTATUS": "1",
      "ID": "549773705216",
      "INIORTGT": "4",
      "LINKFAIL": "0",
      "LOCATION": "CTE0.B.IOM0.P0",
      "LOGICTYPE": "0",
      "LOSTSIGNALS": "0",
      "LOSTSYNC": "0",
      "MAXSPEED": "16000",
      "MAXSUPPORTSPEED": "8000",
      "NAME": "P0",
      "PARENTID": "0B.0",
      "PARENTTYPE": 209,
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "11",
      "RUNSPEED": "-1",
      "SFPSTATUS": "1",
      "STARTTIME": "1474289336",
      "TYPE": 212,
      "WWN": "201030d17eb4f761",
      "endOfFrameErrors": "0",
      "fastWriteEnable": "0",
      "lightStatus": "0",
      "numberOfInitiators": "1",
      "protocol": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying basic information about the Fibre Channel port whose ID is 549773705216. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_port/549773705216?timeConversion=0
```

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```
Response: {
    "data": {
        "BADCHARNUMBER": "0",
        "BADCRCNUM": "0",
        "CONFSPEED": "0",
        "FCCONFMODE": "3",
        "FCRUNMODE": "-1",
        "FLOGINDELAYTIMES": "0",
        "HEALTHSTATUS": "1",
        "ID": "549773705216",
        "INIORTGT": "4",
        "LINKFAIL": "0",
        "LOCATION": "CTE0.B.IOM0.P0",
        "LOGICTYPE": "0",
        "LOSTSIGNALS": "0",
        "LOSTSYNC": "0",
        "MAXSPEED": "16000",
        "MAXSUPPORTSPEED": "8000",
        "NAME": "P0",
        "PARENTID": "0B.0",
        "PARENTTYPE": 209,
        "PORTSWITCH": "true",
        "RUNNINGSTATUS": "11",
        "RUNSPEED": "-1",
        "SFPSTATUS": "1",
        "STARTTIME": "1474289336",
        "TYPE": 212,
        "WWN": "201030d17eb4f761",
        "endOfFrameErrors": "0",
        "fastWriteEnable": "0",
        "lightStatus": "0",
        "numberOfInitiators": "1",
        "protocol": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.9.4.19 Interface for Querying IP Address Range Information

Function

Query an IP address range.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/IP_RANGE?name=${name}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Range:**^[0-9a-zA-Z_ \.-]{1,255}

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Object type. **The value is described as follows:** 388
name	Mandatory	string	Object name. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
parentType	Mandatory	enum	Indicates the parent object type of the IP address range. **The value is described as follows:** Currently, only the network plane is supported. The value is 57888.

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Parameter	Mandatory/ Conditional	Type	Description
parentName	Mandatory	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
ipv6Range	Mandatory	string	IPv6 address range. **The value is described as follows:** The value ranges from the start IPv6 address to the end IPv6 address.
ipv4Range	Mandatory	string	IPv4 address range. **The value is described as follows:** The value ranges from the start IPv4 address to the end IPv4 address.
addressFamily	Mandatory	uint32	Address family of the IP address range. **The value is described as follows:** 0: IPv4 1: IPv6

Example

- Query the information about the IP address range named "cnp_ipv4".

```
Request: GET /deviceManager/rest/210235843910E6000009/IP_RANGE?name=cnp

Response: {
   "data": [
      {
         "addressFamily": "0",
         "ipv4Range": "192.168.2.101-192.168.2.102",
         "ipv6Range": "",
         "name": "cnp",
         "parentName": "cnp_ipv4",
         "parentType": 57888,
         "type": 388
      }
```

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```
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.4.20 Interface for Querying IP Address Ranges in Batches

Function

Query IP address ranges in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/IP_RANGE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
parentType	Optional	enum	Indicates the parent object type of the IP address range. **The value is described as follows:** Currently, only the network plane is supported. The value is 57888. **Length:**4

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Parameter	Mandatory/Optional/Conditional	Type	Description
parentName	Conditional	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255 **Range:**^[0-9a-zA-Z_ \.-]{1,255} **Note:**When the parentType field is delivered, the parentName field must be delivered.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Object type. **The value is described as follows:** 388
name	Mandatory	string	Name of an IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
parentType	Mandatory	enum	Indicates the parent object type of the IP address range. **The value is described as follows:** Currently, only the network plane is supported. The value is 57888.
parentName	Mandatory	string	Indicates the name of the parent object of the IP address range. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
ipv4Range	Mandatory	string	IPv4 address range. **The value is described as follows:** The value ranges from the start IPv4 address to the end IPv4 address.
ipv6Range	Mandatory	string	IPv6 address range. **The value is described as follows:** The value ranges from the start IPv6 address to the end IPv6 address.
addressFamily	Mandatory	uint32	Address family of the IP address range. **The value is described as follows:** 0: IPv4. 1: IPv6.

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Example

- Query all IP address ranges of the network plane named "cnp".

```
Request: GET /deviceManager/rest/210235843910E6000009/IP_RANGE?
parentType=57888&parentName=cnp_ipv4

Response: {
   "data": [
      {
         "addressFamily": "0",
         "ipv4Range": "192.168.2.1-192.168.2.100",
         "ipv6Range": "",
         "name": "cnp_ipv4",
         "parentName": "cnp_ipv4",
         "parentType": 57888,
         "type": 388
      },
      {
         "addressFamily": "0",
         "ipv4Range": "192.168.2.101-192.168.2.102",
         "ipv6Range": "",
         "name": "cnp",
         "parentName": "cnp_ipv4",
         "parentType": 57888,
         "type": 388
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query information about all IP address ranges.

```
Request: GET /deviceManager/rest/210235843910E6000009/IP_RANGE

Response: {
   "data": [
      {
         "addressFamily": "0",
         "ipv4Range": "192.168.2.1-192.168.2.100",
         "ipv6Range": "",
         "name": "cnp_ipv4",
         "parentName": "cnp_ipv4",
         "parentType": 57888,
         "type": 388
      },
      {
         "addressFamily": "0",
         "ipv4Range": "192.168.2.101-192.168.2.102",
         "ipv6Range": "",
         "name": "cnp",
         "parentName": "cnp_ipv4",
         "parentType": 57888,
         "type": 388
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.21 Interface for Querying Logical Port Information

Function

This interface is used to query basic information about a logical port.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif?NAME=${name}

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
Name	Mandatory	string	Logical port name. **The value is described as follows:** - **Length:**1~255
id	Optional	string	Logical port ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 279: logical port
ID	Mandatory	string	ID of a logical port. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Name of a logical port. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 10: Link up 11: Link down 33: To be recovered 110: Standby
IPV4ADDR	Mandatory	string	Logical port IPv4 address. **The value is described as follows:** -
IPV4MASK	Mandatory	string	Logical port IPv4 mask. **The value is described as follows:** -
IPV4GATEWAY	Mandatory	string	Logical port IPv4 gateway. **The value is described as follows:** -
IPV6ADDR	Mandatory	string	Logical port IPv6 address. **The value is described as follows:** -
IPV6MASK	Mandatory	string	Logical port IPv6 prefix. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
IPV6GATEWAY	Mandatory	string	Logical port IPv6 gateway. **The value is described as follows:** -
ROLE	Mandatory	string(enum)	Role of a logical port. **The value is described as follows:** 1: management 2: service 3: management +service
SUPPORTPROTOCOL	Mandatory	string(uint32)	Supported protocol. **The value is described as follows:** 0: NONE 1: NFS (bit 0 for the NFS switch) 2: CIFS (bit 1 for the CIFS switch) 3: NFS + CIFS 4: iSCSI (bit 2 for the iSCSI switch) 8: FC/FCoE (bit 3 for the FC/FCoE switch) 512: BGP (bit 9 for the BGP switch) If the bit switch is 0, the protocol is not supported. If the bit switch is 1, the protocol is supported. This is convenient for expanding subsequent protocols. **Note:**Currently, this field is not supported.

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Parameter	Mandatory/ Conditional	Type	Description
HOMEPORTTYPE	Mandatory	string(enum)	Type of the parent port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
HOMEPORTID	Mandatory	string	ID of the parent port. **The value is described as follows:** -
HOMEPORTNAME	Mandatory	string	Name of the parent port. **The value is described as follows:** -
HOMECONTROLLERID	Mandatory	string	ID of the parent controller. **The value is described as follows:** -
CURRENTPORTTYPE	Mandatory	string(enum)	Type of the current port. **The value is described as follows:** 1: Ethernet port 7: bond 8: VLAN 25: VIP
CURRENTPORTID	Mandatory	string	ID of the current port. **The value is described as follows:** -
CURRENTPORTNAME	Mandatory	string	Name of the current port. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
CURRENTCONTROLLERID	Mandatory	string	ID of the current controller. **The value is described as follows:** -
OPERATIONALSTATUS	Mandatory	string(bool)	Whether the port is activated. **The value is described as follows:** true: activated false: not activated
ADDRESSFAMILY	Mandatory	string(enum)	TCP/IP version. **The value is described as follows:** 0: IPv4 1: IPv6
FAILOVERGROUPID	Mandatory	string	ID of the owning failover group. **The value is described as follows:** -
FAILOVERGROUPNAME	Mandatory	string	Name of the owning failover group. **The value is described as follows:** -
CANFAILOVER	Mandatory	string(bool)	Indicates whether failover is enabled. The default value is true. **The value is described as follows:** true: enabled false: disabled
FAILBACKMODE	Mandatory	string(enum)	Failback mode. **The value is described as follows:** 0: not supported 1: manual 2: auto

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Parameter	Mandatory/ Conditional	Type	Description
ISPRIVATE	Mandatory	string(bool)	Whether it is configurable. **The value is described as follows:** true: not configurable false: configurable
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
MANAGEMENTACCESS	Mandatory	string	Manages the access mode. **The value is described as follows:** -
ddnsStatus	Mandatory	string(enum)	Dynamic DNS. **The value is described as follows:** 0: invalid 1: enabled 2: disabled **Note:**The dynamic DNS is supported when the role of a logical port is "service" or "management +service".

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Parameter	Mandatory/ Conditional	Type	Description
dnsZoneName	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.
listenDnsQueryEnabled	Conditional	string(enum)	Whether to listen for DNS query requests. **The value is described as follows:** 0: NO 1: YES
isDefLif	Mandatory	bool	Whether it is created by default. **The value is described as follows:** false: not created by default true: created by default
LogicalType	Mandatory	enum	Logical type. **The value is described as follows:** 0: host port/service port 2: management port 4: maintenance port
WORKSTATUS	Mandatory	enum	Working status. **The value is described as follows:** 0: Standby 1: Working

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Parameter	Mandatory/ Conditional	Type	Description
HOMESITEWWN	Mandatory	string	Home site WWN of the LIF. **The value is described as follows:** -

Example

- Querying basic information about the logical port whose name is lifbondvlan4-1.

```
Request: GET /deviceManager/rest/210235843910E6000009/lif?NAME=lifbondvlan4-1

Response:
 {
  "data": [
    {
      "ADDRESSFAMILY": "0",
      "CANFAILOVER": "true",
      "CURRENTCONTROLLERID": "0A",
      "CURRENTPORTID": "2251804075098112",
      "CURRENTPORTNAME": "bond1.500",
      "CURRENTPORTTYPE": "8",
      "FAILBACKMODE": "2",
      "FAILOVERGROUPID": "4596",
      "FAILOVERGROUPNAME": "VLAN-FailoverGroup-500",
      "HOMECONTROLLERID": "0A",
      "HOMEPORTID": "2251804075098112",
      "HOMEPORTNAME": "bond1.500",
      "HOMEPORTTYPE": "8",
      "HOMESITEWWN": "",
      "ID": "4614219297495973888",
      "IPV4ADDR": "8.50.9.82",
      "IPV4GATEWAY": "",
      "IPV4MASK": "255.255.224.0",
      "IPV6ADDR": "",
      "IPV6GATEWAY": "",
      "IPV6MASK": "",
      "ISPRIVATE": "false",
      "LogicalType": "0",
      "MANAGEMENTACCESS": "--",
      "NAME": "lifbondvlan4-1",
      "OPERATIONALSTATUS": "true",
      "ROLE": "2",
      "RUNNINGSTATUS": "10",
      "SUPPORTPROTOCOL": "1",
      "TYPE": 279,
      "ddnsStatus": "1",
      "dnsZoneName": "test1.com",
      "isDefLif": "false",
      "version": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

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- Querying basic information about the logical port whose ID is 4614219297495973888.

```
Request: GET /deviceManager/rest/210235843910E6000009/lif/4614219297495973888

Response:
{
  "data": {
    "ADDRESSFAMILY": "0",
    "CANFAILOVER": "true",
    "CURRENTCONTROLLERID": "0A",
    "CURRENTPORTID": "2251804075098112",
    "CURRENTPORTNAME": "bond1.500",
    "CURRENTPORTTYPE": "8",
    "FAILBACKMODE": "2",
    "FAILOVERGROUPID": "4596",
    "FAILOVERGROUPNAME": "VLAN-FailoverGroup-500",
    "HOMECONTROLLERID": "0A",
    "HOMEPORTID": "2251804075098112",
    "HOMEPORTNAME": "bond1.500",
    "HOMEPORTTYPE": "8",
    "HOMESITEWWN": "",
    "ID": "4614219297495973888",
    "IPV4ADDR": "8.50.9.82",
    "IPV4GATEWAY": "",
    "IPV4MASK": "255.255.224.0",
    "IPV6ADDR": "",
    "IPV6GATEWAY": "",
    "IPV6MASK": "",
    "ISPRIVATE": "false",
    "LogicalType": "0",
    "MANAGEMENTACCESS": "--",
    "NAME": "lifbondvlan4-1",
    "OPERATIONALSTATUS": "true",
    "ROLE": "2",
    "RUNNINGSTATUS": "10",
    "SUPPORTPROTOCOL": "1",
    "TYPE": 279,
    "ddnsStatus": "1",
    "dnsZoneName": "test1.com",
    "isDefLif": "false",
    "version": "0",
    "vstoreId": "0",
    "vstoreName": "System_vStore"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.4.22 Interface for Querying Network Planes in Batches

Function

This interface is used to query network plane information in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	enum	Network plane type. **The value is described as follows:** 57888: network plane
id	Mandatory	uint32	Network plane ID. **The value is described as follows:** 1..1024
name	Mandatory	string	Network plane name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
mtu	Mandatory	uint32	MTU value of the member port on the network plane. **The value is described as follows:** 1280..9000
vlanid	Mandatory	uint32	VLAN ID of the network plane. **The value is described as follows:** 1..4094
ipv4SubNetBase	Mandatory	string	IPv4 subnet segment of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv4 address.

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Parameter	Mandatory/ Conditional	Type	Description
ipv4NetMask	Mandatory	string	IPv4 subnet mask of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv4 address.
ipv4Gateway	Mandatory	string	Gateway of the IPv4 subnet on the network plane. **The value is described as follows:** The value is a character string in the format of an IPv4 address.
ipv4SubNetRange	Mandatory	string	Available IP address range of the IPv4 subnet of the network plane. **The value is described as follows:** The value ranges from the available start IPv4 address to the end IPv4 address.
ipv6SubNetBase	Mandatory	string	IPv6 subnet segment of the network plane. **The value is described as follows:** The value is a character string in the format of an IPv6 address.
ipv6NetMask	Mandatory	string	Prefix length of the IPv6 subnet address of the network plane. **The value is described as follows:** 1-128

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Parameter	Mandatory/ Conditional	Type	Description
ipv6Gateway	Mandatory	string	Gateway of the IPv6 subnet on the network plane. **The value is described as follows:** The value is a character string in the format of an IPv6 address.
ipv6SubNetRange	Mandatory	string	Available IP address range of the IPv6 subnet of the network plane. **The value is described as follows:** The value ranges from the available start IPv6 address to the end IPv6 address.
maxPodNumPerNode	Mandatory	uint32	Maximum number of pods supported by a single node. **The value is described as follows:** 1..15
supportMaxPodNum	Mandatory	uint32	Maximum number of pods supported by a network plane. **The value is described as follows:** 1..64
failover	Mandatory	uint32	Whether IP address failover is enabled for the network plane. **The value is described as follows:** 0..1

Example

- Querying network plane information in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/netplane

Response:
{
```

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```
  "data": {
     "id":"1",
      "name": "test",
      "mtu": "1500",
     "vlanid": "100",
     "ipv4SubNetBase": "192.168.100.0",
     "ipv4NetMask": "255.255.255.0",
     "ipv4Gateway": "192.168.100.110",
     "ipv4SubNetRange": "192.168.100.1-192.168.100.100",
     "ipv6SubNetBase": "",
     "ipv6NetMask": "",
     "ipv6Gateway": "",
     "ipv6SubNetRange": "",
     "maxPodNumPerNode": "3",
     "supportMaxPodNum": "1",
     "failover": "1",
     "objtype":  “57888”
  },
  "error": {
     "code": 0,
     "description": "0"
  }
}
```


2.6.9.4.23 Interface for Querying Routes About the Container Network Plane in Batches

Function

Query routes about the container network plane in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/netplane_route

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	Route ID.
parentID	Mandatory	string	Network plane ID. **The value is described as follows:** 1..1024

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Parameter	Mandatory/ Conditional	Type	Description
destination	Mandatory	string	Destination network segment. **The value is described as follows:** The value is an IP address in character string format.
mask	Mandatory	string	Subnet mask. **The value is described as follows:** The value is an IP address in character string format.
gateWay	Mandatory	string	Gateway address. **The value is described as follows:** The value is an IP address in character string format.

Application Scope

For internal use by R&D engineers.

Example

- Query the route information of a network plane.

```
Request: GET /deviceManager/rest/210235843910E6000009/netplane_route

Response: {
   "data": {
      "destination": "199.168.10.0",
      "gateWay": "199.168.10.100",
      "id": "199.168.10.0-255.255.255.0-1",
      "mask": "255.255.255.0",
      "parentID": "1",
      "objtype": "316"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.24 Interface for Querying SAS Port Information

Function

This interface is used to query basic information about a SAS port.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/sas_port/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	SAS port ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 214: SAS port
ID	Mandatory	string	ID of a SAS port.
NAME	Mandatory	string	Name of a SAS port.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 207: controller 208: expansion board 209: interface module
PARENTID	Mandatory	string	ID of a controller, expansion module, or interface module.
LOCATION	Mandatory	string	Location.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down
LOGICTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: expansion port
RUNSPEED	Mandatory	string(uint32)	Operating rate.
WWN	Mandatory	string	WWN.
INIORTGT	Mandatory	string(enum)	Initiator or target. **The value is described as follows:** 2: initiator 3: target 4: initiator and target
PORTSWITCH	Mandatory	string(bool)	Port switch status. **The value is described as follows:** true: open false: close
INVALIDDWORD	Mandatory	string(uint32)	Number of invalid DWORDs.
DISPARITYERROR	Mandatory	string(uint32)	Number of inconsistency errors.

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Parameter	Mandatory/ Conditional	Type	Description
LOSSDWORD	Mandatory	string(uint32)	Number of lost DWORDs in synchronization.
PHYRESETERRORS	Mandatory	string(uint32)	Number of failed PHY resets.
STARTTIME	Mandatory	string	Time when statistics collection starts. The local time is returned by default.
CURRENT_PEER_PORT_ID	Mandatory	string	ID of the current peer port.
SUGGEST_PEER_PORT_ID	Mandatory	string	ID of the peer port that needs to be connected.
LIGHTSTATUS	Mandatory	string(enum)	Location indicator status. **The value is described as follows:** 0: off 1: on
ISMINISAS	Mandatory	string(bool)	Whether it is a mini SAS port. **The value is described as follows:** true: yes false: no
ENCLOSURE_WWN_LIST	Mandatory	string	List of WWNs of disk enclosures connected to the specific SAS port.
MAXSPEED	Mandatory	string(uint32)	Maximum speed.
peerPortName	Mandatory	string	Peer port name.
suggestPortName	Mandatory	string	Recommended local port name.
suggestPeerPortName	Mandatory	string	Recommended peer port name.

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Parameter	Mandatory/ Conditional	Type	Description
cableCheckResult	Conditional	enum	Code of the cable connection check result. **The value is described as follows:** 0: invalid cable connection status 1: incorrect cable connection 2: no cable connection 3: proper cable connection

Example

- Querying basic information about the SAS port whose ID is 2039809.

```
Request: GET /deviceManager/rest/210235843910E6000009/sas_port/2039809

Response: {
   "data": {
      "CURRENT_PEER_PORT_ID": "8867962880",
      "DISPARITYERROR": "0",
      "ENCLOSURE_WWN_LIST": "0x504f93883898a03f,",
      "HEALTHSTATUS": "1",
      "ID": "2039809",
      "INIORTGT": "2",
      "INVALIDDWORD": "0",
      "ISMINISAS": "false",
      "LIGHTSTATUS": "0",
      "LOCATION": "CTE0.A.EXP0",
      "LOGICTYPE": "1",
      "LOSSDWORD": "0",
      "MAXSPEED": "12000",
      "NAME": "EXP0",
      "PARENTID": "0A",
      "PARENTTYPE": 207,
      "PHYRESETERRORS": "0",
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "10",
      "RUNSPEED": "12000",
      "STARTTIME": "1474200497",
      "SUGGEST_PEER_PORT_ID": "8867962880",
      "TYPE": 214,
      "WWN": "50022a1060708000",
      "peerPortName": "--",
      "suggestPortName": "--",
      "suggestPeerPortName": "--",
      "cableCheckResult": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying basic information about the SAS port whose ID is 2039809. The UTC time is returned.

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```
Request: GET /deviceManager/rest/210235843910E6000009/sas_port/2039809?timeConversion=0

Response: {
   "data": {
      "CURRENT_PEER_PORT_ID": "8867962880",
      "DISPARITYERROR": "0",
      "ENCLOSURE_WWN_LIST": "0x504f93883898a03f,",
      "HEALTHSTATUS": "1",
      "ID": "2039809",
      "INIORTGT": "2",
      "INVALIDDWORD": "0",
      "ISMINISAS": "false",
      "LIGHTSTATUS": "0",
      "LOCATION": "CTE0.A.EXP0",
      "LOGICTYPE": "1",
      "LOSSDWORD": "0",
      "MAXSPEED": "12000",
      "NAME": "EXP0",
      "PARENTID": "0A",
      "PARENTTYPE": 207,
      "PHYRESETERRORS": "0",
      "PORTSWITCH": "true",
      "RUNNINGSTATUS": "10",
      "RUNSPEED": "12000",
      "STARTTIME": "1474200497",
      "SUGGEST_PEER_PORT_ID": "8867962880",
      "TYPE": 214,
      "WWN": "50022a1060708000",
      "peerPortName": "--",
      "suggestPortName": "--",
      "suggestPeerPortName": "--",
      "cableCheckResult": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.25 Interface for Querying Serial Port Information

Function

This interface is used to query basic information about a serial port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/serial_port/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Serial port ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 215: serial port
ID	Mandatory	string	Serial port ID.
NAME	Mandatory	string	Serial port name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller 209: interface module
PARENTID	Mandatory	string	ID of the enclosure, controller, or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logic type. **The value is described as follows:** 0: host port 1: expansion port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 11: cluster port

Example

- Querying basic information about the serial port whose ID is 1889869824.

```
Request: GET /deviceManager/rest/210235843910E6000009/serial_port/1889869824

Response:
{
   "data": {
      "HEALTHSTATUS": "1",
      "ID": "1889869824",
      "LOCATION": "CTE0.A.SERIAL",
      "LOGICTYPE": "2",
      "NAME": "SERIAL",
      "PARENTID": "0A",
      "PARENTTYPE": 207,
      "RUNNINGSTATUS": "10",
      "TYPE": 215
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.26 Interface for Querying Serial Port Information in Batches

Function

This interface is used to query basic information about serial ports in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/serial_port

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 215: serial port
ID	Mandatory	string	Specifies the serial port ID.
NAME	Mandatory	string	Serial port name.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 206: enclosure 207: controller 209: interface module
PARENTID	Mandatory	string	ID of the enclosure, controller, or interface module.
LOCATION	Mandatory	string	Location.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: unknown 1: normal 2: faulty 3: about to fail 9: inconsistent
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down

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Parameter	Mandatory/ Conditional	Type	Description
LOGICTYPE	Mandatory	string(enum)	Logic type. **The value is described as follows:** 0: host port 1: expansion port 2: management port 3: internal port 4: maintenance port 5: management/ service port 6: maintenance/service port 11: cluster port

Example

- Querying basic information about all serial ports of the storage array in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/serial_port

Response:
{
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "1889869824",
         "LOCATION": "CTE0.A.SERIAL",
         "LOGICTYPE": "2",
         "NAME": "SERIAL",
         "PARENTID": "0A",
         "PARENTTYPE": 207,
         "RUNNINGSTATUS": "10",
         "TYPE": 215
      },...
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.27 Interface for Querying the Number of Bond Port

Function

This interface is used to query the number of bond ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bond_port/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of bond ports.

Example

- Querying the number of bond ports whose names contain 1.

```
Request: GET /deviceManager/rest/210235843710E7000007/bond_port/count?filter=NAME:1

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.28 Interface for Querying the Number of Ethernet Ports

Function

This interface is used to query the number of Ethernet ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ETH_PORT/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Indicates the number of Ethernet ports.

Example

- Querying the number of Ethernet ports whose names contain l.

```
Request: GET /deviceManager/rest/210425612544525214 32/ETH_PORT/count?filter=NAME:l

Response:
{
  "data": {
    "COUNT": "2"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.4.29 Interface for Querying the Number of Failover Group

Function

This interface is used to query the number of failover groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/failovergroup/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of failover groups.

Example

- Querying the number of failover groups whose name contains "sys".

```
Request: GET /deviceManager/rest/210235843710E7000007/failovergroup/count?filter=NAME:sys

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.30 Interface for Querying the Number of Fibre Channel Ports

Function

This interface is used to query the number of Fibre Channel ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FC_PORT/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** The value contains 1 to 256 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of Fibre Channel ports.

Example

- Querying the number of Fibre Channel ports whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/FC_PORT/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.4.31 Interface for Querying the Number of IPsec Policies

Function

Query the number of IPsec policies.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following field is supported: name.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of IPsec policies. **The value is described as follows:** 0..512

Application Scope

For internal use by R&D engineers.

Example

- Query the number of IPsec policies named test.

```
Request: GET /deviceManager/rest/210235843710E7000007/ipsec_policy/count?filter=name:test

Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.9.4.32 Interface for Querying the Number of Logical Port

Function

This interface is used to query the number of logical ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lif/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters HOMEPORTTYPE, HOMEPORTID, IPV4ADDR, and IPV6ADDR are supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of logical ports.

Example

- Querying the number of logical ports whose IPv4 addresses contain 12.

```
Request: GET /deviceManager/rest/210235843710E7000007/lif/count?filter=IPV4ADDR:12

Response:
{
   "data": {
```

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```
    "COUNT": "1"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.6.9.4.33 Interface for Querying the Number of Remote IP Addresses in an IPsec Policy

Function

Query the number of remote IP addresses of a single IPsec policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ipsec_policy_remote_ip/count?name=${name}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Optional	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: remoteIP and sessionStatus.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	uint32	Number of remote IP addresses of an IPsec policy. **The value is described as follows:** 0..512

Application Scope

For internal use by R&D engineers.

Example

- Query the number of remote IP addresses in an IPsec policy named test.

```
Request: GET /deviceManager/rest/210235843710E7000007/ipsec_policy_remote_ip/count?
name=test&filter=remoteIP:10.0.0.1

Response: {
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.4.34 Interface for Querying the Number of SAS Ports

Function

This interface is used to query the number of SAS ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SAS_PORT/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of SAS ports.

Example

- Querying the number of SAS ports whose names contain 0.

```
Request: GET /deviceManager/rest/210425612544525214 32/SAS_PORT/count?filter=NAME:0

Response:
{
  "data": {
    "COUNT": "1"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.9.4.35 Interface for Querying the Number of VLAN

Function

This interface is used to query the number of VLANs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: NAME, TAG, and fatherDrvType.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of VLANs.

Example

- Querying the number of VLANs whose names contain 1.

```
Request: GET /deviceManager/rest/210235843710E7000007/vlan/count?filter=NAME:1

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.36 Interface for Querying the Remote IP Addresses of an IPsec Policy

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/show_ipsec_policy_remote_ip?name=${name}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Specifies the name of an IPsec policy. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: remoteIP and sessionStatus.

Result

Parameter	Mandatory/Conditional	Type	Description
localIP	Mandatory	string	Local IP address. **The value is described as follows:** The value must be a valid IPv4 address.
remoteIP	Mandatory	string	Remote IP address. **The value is described as follows:** A valid IPv4 address.
sessionStatus	Mandatory	enum	IPsec session status. **The value is described as follows:** 0:Unencrypted;1:Negotiating;2:Negotiatefailed;3:Encrypted

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Application Scope

For internal use by R&D engineers.

Example

- Use this command to query the remote IP address of an IPsec policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/show_ipsec_policy_remote_ip?
name=test&filter=remoteIP:4.4.4.4

Response: {
   "data": [
      {
         "localIP": "7.7.7.7",
         "remoteIP": "4.4.4.4",
         "sessionStatus": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.9.4.37 Interface for Querying VLAN Information

Function

This interface is used to query basic information about a VLAN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	VLAN ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 1: 280: VLAN
ID	Mandatory	string	VLAN ID.
NAME	Mandatory	string	VLAN name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: 0: unknown 2: 1: normal 3: 2: running 4: 10: link up 5: 11: link down 6: 53: initializing
TAG	Mandatory	string(uint32)	VLAN tag.
MTU	Mandatory	string(uint32)	Maximum transfer unit.
PORTTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: 1: ETH port 2: 7: bond port
PORTID	Mandatory	string	Port ID.
fatherDrvType	Mandatory	uint32	1: Ethernet interface module 2: RoCE interface module. **The value is described as follows:** 1 or 2.

Example

- Querying basic information about the VLAN whose ID is 4261543936.

```
Request: GET /deviceManager/rest/210235843910E6000009/vlan/4261543936
```

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```
Response: {
    "data": {
        "ID": "4261543936",
        "MTU": "1500",
        "NAME": "CTE0.A.IOM1.P0.123",
        "PORTID": "131328",
        "PORTTYPE": "1",
        "RUNNINGSTATUS": "11",
        "TAG": "123",
        "TYPE": 280,
        "fatherDrvType": 1
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.9.5 Others

2.6.10 support

2.6.10.1 Add

2.6.10.2 Delete

2.6.10.3 Modify

2.6.10.4 Query

2.6.10.4.1 Interface for Querying Information about the Bitmap of the Unshared Blocks of LUNs

Function

This interface is used to query information about the bitmap of the non-shared blocks of LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_bitmap/get_unshared

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LUNID	Mandatory	string	ID of the requested LUN or snapshot. **Note:**Must belong to the same source volume as BASELUNID.
BASELUNID	Mandatory	string	ID of the LUN or snapshot that is compared with the requested LUN or snapshot. **Note:**Must belong to the same source volume as LUNID.
SEGMENTSTARTOFF-SETBYTES	Mandatory	uint64	Starting position of a segment. **Note:** 1.Cannot be greater than the size of the requested LUN or snapshot. 2.Integer multiple of 512 bytes.
SEGMENTLENGTHBYTES	Mandatory	uint64	Segment length. **Note:** 1.Cannot be greater than the size of the requested LUN or snapshot. 2.Integer multiple of 512 bytes.
BITMAPCHUNKSIZE	Mandatory	uint64	Block size. **Note:** 1.The value is greater than or equal to the size of a local unit bitmap. 2.Integer multiple of the size of a local unit bitmap.

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Result

Parameter	Mandatory/ Conditional	Type	Description
CHUNKBITMAP	Mandatory	string	Bitmap information, represented by a hexadecimal character string of the memory buffer.
LUNID	Mandatory	string	Requests the LUN ID.

Example

- Querying information about the bitmap of the non-shared blocks of LUNs.

```
Request:GET /deviceManager/rest/210235843710E7000007/lun_bitmap/get_unshared?
BASELUNID=1&LUNID=2&BITMAPCHUNKSIZE=65536&SEGMENTLENGTHBYTES=536870912&SEGMEN
TSTARTOFFSETBYTES=0

Response:
{
   "data": {
      "CHUNKBITMAP": "0000...",
      "LUNID": "19"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.10.4.2 Interface for Querying Information about the Size of a LUN Unit Bitmap

Function

This interface is used to query information about the size of a LUN Unit Bitmap.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_bitmap/get_bitmap_chks

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
LUNID	Mandatory	string	Requests the LUN ID to obtain its bitmap information.

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Result

Parameter	Mandatory/ Conditional	Type	Description
BITMAPCHUNKSIZE	Mandatory	string(uint64)	Size of a local unit bitmap.
LUNID	Mandatory	string	Requests the LUN ID.

Example

- Querying information about the size of a LUN Unit Bitmap.

```
Request: GET /deviceManager/rest/210235843710E7000007/lun_bitmap/get_bitmap_chks?LUNID=1

Response:
{
   "data": {
      "BITMAPCHUNKSIZE": "65536",
      "LUNID": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.10.5 Others

2.6.10.5.1 Interface for Migrating Reserved Information

Function

This interface is used to migrate reserved information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/PROTOCOL_SERVICE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
OPERATIONCODE	Mandatory	enum	Operation code. **The value is described as follows:** 0: migration

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Parameter	Mandatory/Optional/Conditional	Type	Description
OPERATIONTYPE	Mandatory	enum	Operation type. **The value is described as follows:** 11: LUN
OPERATIONID	Mandatory	uint32	ID of the associated operation object.

Result

N/A

Example

- Migrate reserved information.

```
Request: PUT/deviceManager/rest/210235843710E7000007/PROTOCOL_SERVICE
{
    "OPERATIONCODE": "0",
    "OPERATIONTYPE": "11",
    "OPERATIONID": "0"
}
Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.11 cabinet

2.6.11.1 Add

2.6.11.2 Delete

2.6.11.3 Modify

2.6.11.4 Query

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2.6.11.4.1 Interface for Batch Querying Rack Information

Function

This interface is used to batch query rack information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bay

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 205: bay
ID	Mandatory	string	Indicates the rack ID.
LOCATION	Mandatory	string	Rack location. **The value is described as follows:** "" is returned if the rack cannot be located.
NAME	Mandatory	string	Rack name.

Example

- Querying information about all racks.

```
Request: GET /deviceManager/rest/210235843910E6000009/bay

Response:
{
   "data": [
      {
         "ID": "SMB0",
         "LOCATION": "",
         "NAME": "SMB0",
         "TYPE": 205
      }, ...
```

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```
  ],
  "error": {
     "code": 0,
     "description": "0"
  }
}
```

2.6.11.4.2 Interface for Querying Rack Information

Function

This interface is used to query rack information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bay/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Indicates the rack ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 205: bay
ID	Mandatory	string	Indicates the rack ID.
LOCATION	Mandatory	string	Rack location. **The value is described as follows:** "" is returned if the rack cannot be located.
NAME	Mandatory	string	Rack name.

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Example

- Querying information about the rack whose ID is SMB0.

```
Request: GET /deviceManager/rest/210235843910E6000009/bay/SMB0

Response:
{
   "data": {
      "ID": "SMB0",
      "LOCATION": "",
      "NAME": "SMB0",
      "TYPE": 205
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.11.5 Others

2.6.12 vlan

2.6.12.1 Add

2.6.12.2 Delete

2.6.12.3 Modify

2.6.12.4 Query

2.6.12.4.1 Interface for Implementing Associated Query of VLAN Information

Function

This interface is used to implement associated query of basic information about VLANs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vlan/associate

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type of the associated object, for example, FAILOVERGROUP. **The value is described as follows:** 289: FAILOVERGROUP
ASSOCIATEOBJID	Mandatory	string	ID of a failover group.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 280: VLAN
ID	Mandatory	string	Specifies the identifier (ID) of the VLAN to be configured.
NAME	Mandatory	string	Indicates the VLAN name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 1: normal 2: running 10: link up 11: link down 53: initializing
TAG	Mandatory	string(uint32)	VLAN tag. **The value is described as follows:** [1,4094]
MTU	Mandatory	string(uint32)	Maximum transfer unit.
PORTTYPE	Mandatory	string(enum)	Port type. **The value is described as follows:** 1: ETH port 7: bond port
PORTID	Mandatory	string	Port ID.

Example

- Querying basic information about VLANs in the failover group whose ID is 4219.

```
Request: GET /deviceManager/rest/210235843910E6000009/vlan/associate?
ASSOCIATEOBJTYPE=289&ASSOCIATEOBJID=4219&range=[0-100]

Response:
{
   "data": [
      {
         "ID": "4261543936",
         "MTU": "1500",
         "NAME": "CTE0.A.IOM1.P0.123",
         "PORTID": "131328",
         "PORTTYPE": "1",
         "RUNNINGSTATUS": "11",
         "TAG": "123",
         "TYPE": 280
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.12.5 Others

2.6.13 dns_zone

2.6.13.1 Add

2.6.13.1.1 Interface for Creating a DNS Zone

Function

This interface is used to create a DNS zone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_zone

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
homeSiteWwn	Optional	string	WWN of the home site of the DNS zone. **The value is described as follows:** - **Length:**64
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57489
ID	Mandatory	string	DNS zone ID.
NAME	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.
homeSiteWwn	Mandatory	string	WWN of the home site of the DNS zone. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Creating a DNS zone named "zone1.nas.com".

```
Request: POST /deviceManager/rest/210235843710E7000007/dns_zone
{
    "NAME": "zone1.nas.com"
}

Response:
{
    "data": {
        "ID": "0",
        "NAME": "zone1.nas.com",
        "TYPE": 57489
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.13.2 Delete

2.6.13.2.1 Interface for Deleting a DNS Zone

Function

This interface is used to delete a specified zone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_zone/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	ID. **Note:**One of ID and NAME must be delivered.
NAME	Conditional	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255 **Note:**One of ID and NAME must be delivered.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Delete a specified zone.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/dns_zone/1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.13.3 Modify

2.6.13.3.1 Interface for Modifying a DNS Zone Name

Function

This interface is used to modify the name of a DNS zone.

HighRisk

You are about to modify properties of a DNS Zone. This operation may cause you to fail to access services by using the Zone name before modification.

Suggestion: Before performing this operation, confirm that the modification is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DNS_ZONE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	ID. **Note:**One of ID and NAME must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255 **Note:**One of ID and NAME must be delivered.
newDnsZoneName	Mandatory	string	New DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit. **Length:**255 **Note:**The new zone name cannot be the same as the original zone name.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Modifying the name of a DNS zone.

```
Request: PUT /deviceManager/rest/210235843710E7000007/dns_zone
{
    "ID": "0",
    "newDnsZoneName": "test.nas.com"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.13.3.2 Interface for Modifying DNS Load Balance Information

Function

This interface is used to enable or disable the DNS load balancing function and configure the load balancing strategy.

HighRisk

You are about to disable the DNS load balancing function. After the operation, you cannot use the domain name resolution service, and file systems cannot use the DNS load balancing function. Suggestion: Before performing this operation, confirm that you want to disable the function.
You are about to modify the DNS load balancing strategy. This operation will affect DNS load balancing effect. Suggestion: Before performing this operation, ensure that the modified strategy is more suitable for the current service configuration.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_load_balance/

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
builtInDnsServerEnabled	Optional	enum	Whether the built-in DNS load balancing switch is on. **The value is described as follows:** 0: no 1: yes **Default:**NO
dnsLoadBalanceStrategy	Optional	enum	Built-in DNS load balancing strategy. **The value is described as follows:** 1: weight_round_robin 2: cpu_usage 3: bandwidth_usage 4: open_connections 5: overall_load

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 112

Example

- Enabling the DNS load balancing function.

```
Request: PUT /deviceManager/rest/210235843710E7000007/dns_load_balance
{
   "builtInDnsServerEnabled": 1
}

Response: {
   "data": {
      "TYPE": 112
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

- Disabling the DNS load balancing function.

```
Request: PUT /deviceManager/rest/210235843710E7000007/dns_load_balance
{
    "builtInDnsServerEnabled": 0
}

Response: {
    "data": {
        "TYPE": 112
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Configuring the load balancing policy as "open_connections".

```
Request: PUT /deviceManager/rest/210235843710E7000007/dns_load_balance
{
    "dnsLoadBalanceStrategy": 4
}
Response:
{
  "data": {
    "TYPE": 112
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.13.4 Query

2.6.13.4.1 Interface for Batch Querying DNS Zone Information

Function

This interface is used to batch query zone information about DNS.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_zone

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57489
ID	Mandatory	string	DNS zone ID.
NAME	Mandatory	string	DNS zone name. **The value is described as follows:** A name contains 1 to 255 characters and consists of labels separated by periods (.). A label contains 1 to 63 characters including letters (case-insensitive), digits, hyphens (-), and underscores (_), and must start and end with a letter or a digit.
homeSiteWwn	Mandatory	string	WWN of the home site of the DNS zone. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying the DNS zone.

```
Request: GET /deviceManager/rest/210235843910E6000009/dns_zone

Response: {
   "data": [
      {
         "ID": 0,
         "NAME": "test.nas.com",
         "TYPE": 57489,
         "homeSiteWwn": "",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.13.4.2 Interface for Querying DNS Load Balance Information

Function

This interface is used to query information about DNS load balancing.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dns_load_balance

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 112
ID	Mandatory	string	Global configuration object ID.
builtInDnsServerEnabled	Mandatory	enum	Whether the built-in DNS load balancing switch is on. **The value is described as follows:** 0: no 1: yes
dnsLoadBalanceStrategy	Mandatory	enum	Built-in DNS load balancing strategy. **The value is described as follows:** 1: weight_round_robin 2: cpu_usage 3: bandwidth_usage 4: open_connections 5: overall_load
NvmeRoceFastFailover	Mandatory	enum	Whether NVMe over RoCE fast failover is enabled. **The value is described as follows:** 0: no 1: yes

Example

- Querying information about DNS load balancing.

```
Request: GET /deviceManager/rest/210235843910E6000009/dns_load_balance

Response: {
    "data": {
        "ID": "1",
        "builtInDnsServerEnabled": "0",
        "dnsLoadBalanceStrategy": "1",
        "nvmeRoceFastFailover": "1",
        "TYPE": 112
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.13.5 Others

2.6.14 task

2.6.14.1 Add

2.6.14.1.1 Interface for Creating the SmartCache Pool

Function

This interface is used to create a SmartCache pool.

URL

https://${ip}:${port}/api/v2/task/smartcachepool

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjIDList	Mandatory	array	ID list of associated disks.
allEngineDiskInfo	Optional	json	Information about all controller enclosure disks.
diskNum	Optional	int32	Number of member disks.
tier0DiskType	Optional	enum	Types of SCM drives supported by the high-performance tier. **The value is described as follows:** 17: SCM SSD 18: SCM SSD SED

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Parameter	Mandatory/Optional/Conditional	Type	Description
engineIdList	Optional	array	Controller enclosure ID list.
ownerControllerList	Optional	array	ID list of owning controllers.
engineInfo	Optional	json	Disk information on the controller enclosure.
currentDiskInfo	Optional	json	Information about the current disk.
diskNumList	Optional	array	Disk quantity list.
diskCapacityList	Optional	array	Disk capacity list.
name	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**255
id	Optional	string	SmartCache pool ID. **The value is described as follows:** The value is an integer ranging from 1 to 16.
type	Optional	enum	SmartCache pool type. **Note:**This field is optional in the RESTful API request. If it is not delivered, the default value 218 is used.
description	Optional	string	Description of the SmartCache pool. **The value is described as follows:** - **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
partitionName	Optional	string	SmartCache partition name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Default:**newpartition **Length:**1~255
luns	Optional	array	Array of the LUN associated with the SmartCache partition.
fileSystems	Optional	array	Array of the file system associated with the SmartCache partition.

Result

Parameter	Mandatory/Conditional	Type	Description
displayName	Mandatory	string	Name of a task displayed to users. **The value is described as follows:** Create SmartCache Pool.
target	Mandatory	string	Task operation object. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
taskId	Mandatory	string	Task ID.

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Task name. **The value is described as follows:** The value is "createSmartcache-Pool".

Example

- Creating a SmartCache pool.

```
Request: POST /api/v2/task/smartcachepool
{
        "associateObjIDList": ["134217729","134217730"],
        "name":"newsmartcache"
}

Response: {
    "result": {
        "code": 0,
        "description": "0"
    },
    "data": {
        "taskId": "2",
        "target": "newsmartcache",
        "name": "createSmartcachePool",
        "displayName": "Create SmartCache Pool"
    }
}
```

2.6.14.2 Delete

2.6.14.2.1 Interface for Deleting a Storage Pool

Function

This interface is used to delete a storage pool.

URL

https://${ip}:${port}/api/v2/storagepool/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.
deeplyDelete	Optional	bool	Whether to erase data. **The value is described as follows:** The value can be: 1:"yes": erases disk data. 2:"no": does not erase disk data. The default value is "no".
eraseAction	Optional	enum	Data erasure mode. **The value is described as follows:** The value can be: 1:"overwrite": overwriting. 2:"block_erase": erases blocks. 3:"cryptographic_erase": changes the key. For a self-encrypting disk domain, the default value is "cryptographic_erase". For a non-encrypting disk domain, the default value is "block_erase".
eraseType	Optional	enum	Type of data to be erased. **The value is described as follows:** The value can be: 1:"data_usr": user data. 2:"data_all": full disk data. The default value is "data-usr".

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Parameter	Mandatory/Optional/Conditional	Type	Description
eraseStandards	Optional	enum	Standard that the overwrite data erasure mode follows. **The value is described as follows:** The value can be "dod(e)", "dod(ece)", "vsitr", or "custom". The default value is "dod(e)".
erasePatternList	Optional	array	User-defined data list entered by a user. **The value is described as follows:** The value can be "r" or a hexadecimal number starting with "0x", both occupying 1 byte. A maximum of 3 bytes can be entered and are separated by commas (,).
eraseCount	Optional	uint32	Times that the user-defined data list entered by the user is written to disks. **The value is described as follows:** The value is an integer ranging from 1 to 15. The default value is 1.
eraseVerify	Optional	bool	Whether to verify erased data. **The value is described as follows:** The value can be: 1:"yes": verifies erased data. 2:"no": does not verify erased data. The default value is "no".

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Parameter	Mandatory/Optional/Conditional	Type	Description
eraseCapacityRatio	Optional	uint32	Percentage of erased data to be verified to the total capacity of a disk. **The value is described as follows:** The value is from 1 to 100.

Result

Parameter	Mandatory/Conditional	Type	Description
displayName	Mandatory	string	Name of a task that is displayed to a user. **The value is described as follows:** Deleting storage pool.
target	Mandatory	string	Task operation object. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
taskId	Mandatory	string	Task ID.
name	Mandatory	string	Task name. **The value is described as follows:** The value is "deleteStoragePool".

Example

- Deleting a storage pool.

```
Request: DELETE /api/v2/storagepool/0

Response:
{
   "data": {
      "displayName": "Deleting storage pool",
      "target": "StoragePool003",
      "taskId": "0",
```

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```
        "name": "deleteStoragePool"
      },
      "result": {
        "code": 0,
        "description": "0"
      }
}
```

2.6.14.3 Modify

2.6.14.4 Query

2.6.14.4.1 Interface for Querying the Upgrade Check Progress

Function

This interface is used to query the upgrade check progress.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/query_upgrade_check_progress/

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
checkProgress	Conditional	uint32	Check progress. **The value is described as follows:** 0 to 100. **Note:**The progress value is only for reference and cannot be used to determine whether the current process is complete.

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Parameter	Mandatory/ Conditional	Type	Description
checkStatus	Conditional	uint32	Check status. **The value is described as follows:** 0: UPD_CHECK_RESULT_INIT 1: UPD_CHECK_RESULT_RUNNING 2: UPD_CHECK_RESULT_FINISHED 3: UPD_CHECK_RESULT_ERROR **Note:**If 2 is returned, all check items are complete.
curCheckItem	Conditional	string	Current check item. **The value is described as follows:** Name of the current check item.
curCheckType	Conditional	string	Current check type. **The value is described as follows:** Current check type.
retutnValue	Conditional	uint32	Return value. **The value is described as follows:** 0 to 4294967295.

Example

- Querying the upgrade check progress.

```
Request: GET /deviceManager/rest/2102350RMH10G4000016/query_upgrade_check_progress

Response: {
   "data": {
      "checkProgress": 2,
      "checkStatus": 1,
      "curCheckItem": "Checking for major and critical alarms",
      "curCheckType": "EntireFastUpgrade",
      "returnValue": false
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.14.4.2 Interface for Querying the Upgrade Check Result

Function

This interface is used to query the upgrade check result.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/query_upgrade_check_result/

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description

queryCondition	Optional	json	Query condition.
			Note:
			This parameter is used to add search and sorting conditions for querying objects in batches. It is delivered as a JSON object in the following format:
			{
			"range": "i-j",
			}
			Note:
			Currently, only the range condition is supported.
			The range includes objects that are subscripted in sequence from "i" to "j–1" in the query result. The objects are used for pagination query of data when the value of "i" is no less than 0.

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Result

Parameter	Mandatory/ Conditional	Type	Description
checkItem	Conditional	string	Check item name.
checkResult	Conditional	enum	Check item result. **The value is described as follows:** 0: UPD_CHECK_RESULT_INIT 1: UPD_CHECK_RESULT_RUNNING 2: UPD_CHECK_RESULT_PASS 3: UPD_CHECK_RESULT_NOTPASS 4: UPD_CHECK_RESULT_ERROR 5: UPD_CHECK_RESULT_SKIP
checkTime	Conditional	string	Start time of the check.
isSupportSkip	Conditional	bool	Whether to skip the check item. **The value is described as follows:** True or false.

nodeInfo	Conditional	json	Node information.
			Note:
			Displays the check information of each node. For example,
			{
			"0A": "1",
			"0B": "2"
			}
			"key" indicates the node ID,
			and "value" indicates an enumerated value.

curCheckType	Conditional	string	Current check type. **The value is described as follows:** Current check type.

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Parameter	Mandatory/ Conditional	Type	Description
returnValue	Conditional	uint32	Return value. **The value is described as follows:** 0 to 4294967295.

Example

- Querying the upgrade check result.

```
Request: GET /deviceManager/rest/2102350RMH10G4000016/query_upgrade_check_result

Response: {
   "data": [
      {
         "checkItem": "UgentAlarmclearedCheck:Checking whether major or critical alarms are
deleted",
         "checkResult": 3,
         "checkTime": "2022-01-14 10:33:22",
         "curCheckType": "EntireFastUpgrade",
         "isSupportSkip": true,
         "nodeInfo": {
            "0A": "Check failed"
         },
         "returnValue": 0
      },
      {
         "checkItem": "CheckMajorAlarm:Checking for major and critical alarms",
         "checkResult": 1,
         "checkTime": "2022-01-14 10:33:23",
         "curCheckType": "EntireFastUpgrade",
         "isSupportSkip": false,
         "nodeInfo": {
            "0A": "Checking..."
         },
         "returnValue": 0
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.14.4.3 Interface for Querying Upgrade Process Details

Function

Query upgrade process details.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/
UERY_UPGRADE_PROCESS_DETAIL_INFO

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_QUERY_TYPE	Mandatory	uint32	Query type. **The value is described as follows:** 0: package distribution progress 1: system upgrade 5: hot patch

Result

Parameter	Mandatory/Conditional	Type	Description
CMO_DETAIL_ATOM_RECORD	Conditional	string	Error code.
CMO_DETAIL_ATOM_STATE	Conditional	string	Atomic status. **The value is described as follows:** 0: initialized 1: executing 2: successful 3: failed 4: error 5: skipped 6: suspended
CMO_DETAIL_NODE_ID	Conditional	uint32	Node ID. **Note:**ID of the node to which the current atom belongs.
CMO_STEP_NAME	Conditional	string	Step name.
name	Conditional	string	Name.
method	Conditional	string	Method.
criterion	Conditional	string	Success criteria.
suggestion	Conditional	string	Suggestion.
error_code	Conditional	unit32	Error code.

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Example

- Query upgrade process details.

```
Request: GET /deviceManager/rest/210235982510F7000011/UERY_UPGRADE_PROCESS_DETAIL_INFO?CMO_QUERY_TYPE=1

Response: {
   "data": [
      {
         "CMO_DETAIL_ATOM_RECORD": "",
         "CMO_DETAIL_ATOM_STATE": "1",
         "CMO_DETAIL_NODE_ID": "0B",
         "CMO_STEP_NAME": "Upgrade the software management component."
      },
      {
         "CMO_DETAIL_ATOM_RECORD": "",
         "CMO_DETAIL_ATOM_STATE": "1",
         "CMO_DETAIL_NODE_ID": "0A",
         "CMO_STEP_NAME": "Upgrade the software management component."
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.14.5 Others

2.6.14.5.1 Interface for Checking the Generated Remote Object Name

Function

This interface is used to check the generated remote object name.

URL

https://${ip}:${port}/api/v2/task/is_remote_name_correct

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
remoteNameRule	Optional	enum	Rule for generating the remote object name. **The value is described as follows:** 0: default name 1: consistent with the local end 2: adding the prefix and suffix
namePrefix	Conditional	string	Name prefix of the expected remote LUN, file system, LUN group, or protection group. **Note:**When the value of remoteNameRule is 2, at least one of namePrefix and nameSuffix must be delivered.
nameSuffix	Conditional	string	Name suffix of the expected remote LUN, file system, LUN group, or protection group. **Note:**When the value of remoteNameRule is 2, at least one of namePrefix and nameSuffix must be delivered.
remoteStorageId	Mandatory	string	ID of the remote storage pool.
lunIDs	Optional	array	List of LUN IDs.
fsIDs	Optional	array	List of file system IDs.
vstoreId	Optional	uint32	vStore ID.
lunGroupId	Optional	uint32	LUN group ID.
protectGroupId	Optional	uint32	Protection group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupName	Optional	string	Protection group name.
pairType	Optional	enum	Type of the pair to be created. **The value is described as follows:** 1: replication 2: HyperMetro **Default:**1: replication **Note:**If this parameter is not delivered, the name of the replication pair is verified by default.

Result

Parameter	Mandatory/Conditional	Type	Description
code		int	Error code.
description		string	Error description.
suggestion		string	Operation suggestion.
errorDetails		array	Error details. **The value is described as follows:** JSON object name: object name description: error description resourceType: resource type

Example

- Checking the generated remote object name.

```
Request: POST /api/v2/task/is_remote_name_correct
{
    "remoteStorageId": 0,
    "remoteNameRule": 1,
    "pairType": 1,
    "protectGroupName": "PG0032",
    "lunGroupId": 15
```

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```
}

Response: {
   "data": {

   },
   "result": {
      "code": 1073749229,
      "description": "",
      "suggestion": "",
      "errorDetails": [
         {
            "name": "LUNGroup016_tt",
            "description": "The object with the same name exists on the remote storage device.",
            "resourceType": "LUN group"
         }
      ]
   }
}
```

2.6.14.5.2 Interface for Expanding a Storage Pool

Function

This interface is used to expand a storage pool.

URL

https://${ip}:${port}/api/v2/storagepool/${id}/expand

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
disks	Optional	json	Disk list. **The value is described as follows:** "all": true: uses all disks to create a storage pool. "byNumber": creates storage pools by quantity. "byId": creates a storage pool by disk ID. **Note:** Three usage methods: Use all disks: {"all": true} By quantity: {"byNumber": { "diskNumList": ["xx","xx"], "diskCapacity": ["xx","xx"], "frameIdList": ["xx","xx"]}} By disk ID: {"byId": ["xx","xx"]} When creating a storage pool by quantity, ensure that the values of the following parameters are in one-to-one correspondence: diskNumList: indicates the disk quantity list. diskCapacity: indicates the disk capacity. frameIdList: indicates the list of enclosure IDs, which is delivered only for enclosure redundancy.

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Parameter	Mandatory/Optional/Conditional	Type	Description
engineIdList	Optional	string	List of controller enclosures.

Result

Parameter	Mandatory/Conditional	Type	Description
displayName	Mandatory	string	Name of a task displayed to users. **The value is described as follows:** Create a storage pool.
target	Mandatory	string	Task operation object. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
taskId	Mandatory	string	Indicates the task ID.
name	Mandatory	string	Task name.

Usage Guidelines

Before performing this operation, ensure that the storage pool ID is correct and exits.

Example

- Expanding a storage pool.

```
Request: PUT /api/v2/storagepool/0/expand
{
  "ID": "0",
  "disks": {
    "all": true
  }
 }

Response: {
    "data": {
        "taskId": "3",
        "target": "StoragePool000",
        "name": "expandStoragePool",
        "displayName": "Expand Storage Pool"
    },
```

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```
  "result": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.14.5.3 Interface for Performing the Upgrade Process

Function

This interface is used to perform the upgrade process.

HighRisk

You are about to perform the upgrade. The system software will be upgraded to the version of the downloaded software package. Suggestion: 1. Ensure that no other change tasks (such as hot patch installation, system upgrade, capacity expansion, and parts replacement) are in progress. 2. Do not perform any configuration operations during the upgrade. 3. Perform this operation during off-peak hours.
You are about to perform an upgrade operation and system software will be changed. Suggestion: 1. Ensure that the selected upgrade package version is the same as the target version. 2. Back up the configuration database and license to ensure that the configuration database and license have been downloaded successfully.
The upgrade evaluation result indicates that the upgrade will be affected. If you continue the upgrade, risks may exist. Ensure that you want to ignore the upgrade evaluation result and continue the subsequent operations forcibly. Suggestion: Perform this operation with the guidance of Huawei technical support engineers.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OM_MSG_OP_UPD_EXECUTE

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_EXE_UPD_ACTIVETYPE	Mandatory	uint32	Upgrade type. **The value is described as follows:** 0: rolling upgrade 1: offline upgrade 2: fast upgrade 3: synchronization 4: forcible upgrade 5: hot patch installation 6: hot patch deletion 7: hot patch rollback 8: apollo rolling upgrade 9: apollo offline upgrade 10: special processing 11: default 12: patch installation during the upgrade
CMO_EXC_ERROR_INFO	Mandatory	uint32	Running type. **The value is described as follows:** 0: start 1: upgrade 2: retry 3: rollback 4: stop 5: repair
CMO_EXE_APOLLO_VER	Optional	string	Apollo version. **The value is described as follows:** 1.1.2.0: container feature **Length:**(0,128]

Result

N/A

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Example

- Performing the upgrade process.

```
Request: PUT /deviceManager/rest/210235982510F7000011/OM_MSG_OP_UPD_EXECUTE?
CMO_EXE_UPD_ACTIVETYPE=2&CMO_EXC_ERROR_INFO=1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.15 bgp

2.6.15.1 Add

2.6.15.1.1 Interface for Creating BGP Configurations

Function

Create BGP configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_config

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**64

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Parameter	Mandatory/Optional/Conditional	Type	Description
routerId	Mandatory	string	ID of the local router. **The value is described as follows:** The value must be a valid IPv4 address. **Length:**64
asn	Optional	uint32	AS number. **The value is described as follows:** The value is an integer ranging from 1 to 65535.
holdTime	Optional	uint32	Hold time. **The value is described as follows:** The value is an integer ranging from 3 to 65535, in seconds. **Unit:**Second

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Create BGP configurations.

```
Request: POST /deviceManager/rest/210235843710E7000007/bgp_config
{
   "controller": "0A",
   "routerId": "10.10.10.10",
   "asn": "65501",
   "holdTime": "180"
}
Response:
{
   "data": {
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.6.15.2 Delete

2.6.15.2.1 Interface for Deleting BGP Configurations

Function

Delete BGP configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_config

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**64

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Delete BGP configurations.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/bgp_config
{
  "controller":"0A"
}

Response: {
    "data": {

    },
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.15.3 Modify

2.6.15.3.1 Interface for Modifying BGP Configurations

Function

Modify BGP configurations.

HighRisk

You are about to modify BGP configurations.

If the BGP configurations are in use, this operation may interrupt services or cause exceptions.

Suggestion: Before performing this operation, ensure that the modification is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_config

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**64

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Parameter	Mandatory/Optional/Conditional	Type	Description
routerId	Optional	string	ID of the local router. **The value is described as follows:** The value must be a valid IPv4 address. **Length:**64
asn	Optional	uint32	AS number. **The value is described as follows:** The value is an integer ranging from 1 to 65535.
holdTime	Optional	uint32	Hold time. **The value is described as follows:** The value is an integer ranging from 3 to 65535, in seconds. **Unit:**Second

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Modify BGP configurations.

```
Request: PUT /deviceManager/rest/210235843910E6000009/bgp_config
{
    "controller": "0A",
    "routerId": "10.10.10.10",
    "asn": "65502",
    "holdTime": "240"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.15.4 Query

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2.6.15.4.1 Interface for Batch Querying BGP Configurations

Function

Query BGP configurations in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_config

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).
routerId	Mandatory	string	ID of the local router. **The value is described as follows:** The value must be a valid IPv4 address.
asn	Mandatory	uint32	AS number. **The value is described as follows:** The value is an integer ranging from 1 to 65535.

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Parameter	Mandatory/ Conditional	Type	Description
holdTime	Mandatory	uint32	Hold time. **The value is described as follows:** The value is an integer ranging from 3 to 65535, in seconds. **Unit:**Second

Application Scope

For internal use by R&D engineers.

Example

- Query BGP configurations in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/bgp_config
Response:
{
   "data":[
   {
      "controller": "0A",
      "routerId": "10.10.10.10",
      "asn": "65501",
      "holdTime": "180"
   },
   {
      "controller": "0B",
      "routerId": "10.10.10.11",
      "asn": "65501",
      "holdTime": "180"
   }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.15.4.2 Interface for Querying BGP Configurations

Function

Query BGP configurations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_config

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**64

Result

Parameter	Mandatory/Conditional	Type	Description
controller	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).
routerId	Mandatory	string	ID of the local router. **The value is described as follows:** The value must be a valid IPv4 address.
asn	Mandatory	uint32	AS number. **The value is described as follows:** The value is an integer ranging from 1 to 65535.
holdTime	Mandatory	uint32	Hold time. **The value is described as follows:** The value is an integer ranging from 3 to 65535, in seconds. **Unit:**Second

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Application Scope

For internal use by R&D engineers.

Example

- Query BGP peers.

```
Request: GET /deviceManager/rest/210235843710E7000007/bgp_config?controller=0A
Response:
{
  "data": {
    "asn": "65501",
    "controller": "0A",
    "holdTime": "180",
    "routerId": "3.3.3.3"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.6.15.5 Others

2.6.16 bgp_peer

2.6.16.1 Add

2.6.16.1.1 Interface for Creating a BGP Peer

Function

Create a BGP peer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_peer

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**256
peerAsn	Mandatory	uint32	Peer ASN. **The value is described as follows:** 1~65535 **Length:**4
peerAddressFamily	Mandatory	uint32	IP address type of the peer. **The value is described as follows:** 0: IPv4 1: IPv6 **Length:**4
peerAddress	Mandatory	string	IP address of the peer. **The value is described as follows:** The value is a character string in IPv4 or IPv6 format. **Length:**128
bgpLifName	Mandatory	string	Name of the BGP LIF. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
ownerController	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-). **Length:**64
routePref	Optional	uint32	BGP route priority. **The value is described as follows:** 1~65535 **Length:**4

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	uint32	BGP peer ID. **The value is described as follows:** 1..1024
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
peerAsn	Mandatory	uint32	Peer ASN. **The value is described as follows:** 1..65535
peerAddressFamily	Mandatory	uint32	IP address type of the peer. **The value is described as follows:** 0..1

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Parameter	Mandatory/ Conditional	Type	Description
peerAddress	Mandatory	string	IP address of the peer. **The value is described as follows:** The value is a character string in IPv4 or IPv6 format.
bgpLifName	Mandatory	string	Name of the BGP LIF. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
routePref	Conditional	uint32	BGP route priority. **The value is described as follows:** 1..65535
ownerController	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).

Application Scope

For internal use by R&D engineers.

Example

- Create a BGP peer.

```
Request: POST /deviceManager/rest/210235843910E6000009/bgp_peer
{
    "name": "testBgpPeer",
    "peerAsn": "80",
    "peerAddressFamily": "0",
    "peerAddress": "10.1.2.1",
    "bgpLifName": "testBgpLif",
    "ownerController": "0B"
}
Response:
{
    "data": {
        "id":"1",
```

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```
        "name": "testBgpPeer",
        "peerAsn": "80",
        "peerAddressFamily": "0",
        "peerAddress": "10.1.2.1",
        "bgpLifName": "testBgpLif",
        "ownerController": "0B"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.16.2 Delete

2.6.16.2.1 Interface for Deleting a BGP Peer

Function

Delete a BGP peer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_peer

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**256

Result

N/A

Application Scope

For internal use by R&D engineers.

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Example

- Delete a BGP peer.

```
Request: DELETE /deviceManager/rest/2102358439l0E6000009/bgp_peer
{
    "name": "testBgpPeer"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.6.16.3 Modify

2.6.16.3.1 Interface for Modifying a BGP Peer

Function

Modify a BGP peer.

HighRisk

You are about to modify BGP peer attributes.

If the BGP peer is in use, this operation may interrupt services or cause exceptions.

Suggestion: Before performing this operation, ensure that the modification is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_peer

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**256
peerAsn	Optional	uint32	Peer ASN. **The value is described as follows:** 1..65535 **Length:**4
peerAddressFamily	Optional	uint32	IP address type of the peer. **The value is described as follows:** 0: IPv4 1: IPv6 **Length:**4
peerAddress	Optional	string	IP address of the peer. **The value is described as follows:** The value is a character string in IPv4 or IPv6 format. **Length:**128
bgpLifName	Optional	string	Name of the BGP LIF. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
routePref	Optional	uint32	BGP route priority. **The value is described as follows:** 1..65535 **Length:**4
newName	Optional	string	Name of the new BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**256

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Modify a BGP peer.

```
Request: PUT /deviceManager/rest/210235843910E6000009/bgp_peer
{
    "name": "oldPeerName",
    "newName": "newPeerName"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.6.16.4 Query

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2.6.16.4.1 Interface for Batch Querying BGP Peers

Function

Query BGP peers in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_peer

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
peerAsn	Mandatory	uint32	Peer ASN. **The value is described as follows:** 1..65535
peerAddressFamily	Mandatory	uint32	IP address type of the peer. **The value is described as follows:** 0: IPv4 1: IPv6
peerAddress	Mandatory	string	IP address of the peer. **The value is described as follows:** The value is a character string in IPv4 or IPv6 format.

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Parameter	Mandatory/ Conditional	Type	Description
bgpLifName	Mandatory	string	Name of the BGP LIF. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
routePref	Mandatory	uint32	BGP route priority. **The value is described as follows:** 1..65535
currentLinkStatus	Mandatory	uint32	Current link status. **The value is described as follows:** 0..15
ownerController	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).
bfdSessionState	Mandatory	uint32	Status of a BFD session. **The value is described as follows:** 0..3 **Note:**0: AdminDown; 1: Down; 2: Init; 3: Up.

Application Scope

For internal use by R&D engineers.

Example

- Query BGP peers in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/bgp_peer
Response:
{
   "data": [
   {
```

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```
        "name": "testBgpPeer",
        "peerAsn": "80",
        "peerAddressFamily": "0",
        "peerAddress": "10.1.2.1",
        "bgpLifName": "testBgpLif",
        "routePref": "100",
        "currentLinkStatus": "0",
                "ownerController": "0B",
                "bfdSessionState": "0"
    }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.6.16.4.2 Interface for Querying a BGP Peer

Function

Query details about a BGP peer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/bgp_peer

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**256

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Result

Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Name of a BGP peer. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
peerAsn	Mandatory	uint32	Peer ASN. **The value is described as follows:** 1..65535
peerAddressFamily	Mandatory	uint32	IP address type of the peer. **The value is described as follows:** 0: IPv4 1: IPv6
peerAddress	Mandatory	string	IP address of the peer. **The value is described as follows:** The value is a character string in IPv4 or IPv6 format.
bgpLifName	Mandatory	string	Name of the BGP LIF. **The value is described as follows:** The value contains 1 to 255 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
routePref	Mandatory	uint32	BGP route priority. **The value is described as follows:** 1..65535

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Parameter	Mandatory/ Conditional	Type	Description
currentLinkStatus	Mandatory	uint32	Current link status. **The value is described as follows:** 0: IDLE 1: CONNECT 2: ACTIVE 3: OPENSENT 4: OPENCONFIRM 5: ESTABLISHED
ownerController	Mandatory	string	Controller ID. **The value is described as follows:** The value contains 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).
bfdSessionState	Mandatory	uint32	Status of a BFD session. **The value is described as follows:** 0..3 **Note:**0: AdminDown; 1: Down; 2: Init; 3: Up.

Application Scope

For internal use by R&D engineers.

Example

- Query a peer.

```
Request: GET /deviceManager/rest/210235843710E7000007/bgp_peer?name=testBgpPeer

Response: {
   "data": {
      "name": "testBgpPeer",
      "peerAsn": "80",
      "peerAddressFamily": "0",
      "peerAddress": "10.1.2.1",
      "bgpLifName": "testBgpLif",
      "routePref": "100",
      "currentLinkStatus": "0",
      "ownerController": "0B",
      "bfdSessionState": "0"
   },
   "error": {
      "code": 0,
```

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```
    "description": "0"
  }
}
```

2.6.16.5 Others

2.6.17 support_major

2.6.17.1 Add

2.6.17.2 Delete

2.6.17.3 Modify

2.6.17.4 Query

2.6.17.5 Others

2.6.17.5.1 Interface for Starting the Package Distribution Process

Function

Start the package distribution process.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/ota_distribute_pkg

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
uploadPath	Mandatory	string	Path for distributing the package. **The value is described as follows:** - **Note:**uploadPath: /OSM/coffer_data/update/OTA

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Distribute the package.

```
Request: GET /deviceManager/rest/${deviceId}/OTA_UPGRADE/ota_distribute_pkg?uploadPath=/OSM/coffer_data/update/OTA

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7 Block storage service management

2.7.1 initiator

2.7.1.1 Add

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2.7.1.1.1 Interface for Creating a Fibre Channel Initiator (Host Port)

Function

This interface is used to create a Fibre Channel initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fibre Channel initiator ID. **The value is described as follows:** Saving the port WWN. It is a hexadecimal value that contains 16 characters comprised of uppercase letters A to F, lowercase letters a to f, or digits 0 to 9, but cannot all be 0, F, or f.
NAME	Optional	string	Fibre Channel initiator name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This parameter is delivered when a Fibre Channel initiator is associated with a host.
PARENTID	Optional	string	Host ID. **The value is described as follows:** - **Note:**This parameter is delivered when a Fibre Channel initiator is associated with a host.
FAILOVERMODE	Optional	enum	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter needs to be delivered only when third-party multipathing software is enabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPECIALMODETYPE	Optional	enum	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter needs to be delivered only when the initiator switchover mode is special ALUA.
PATHTYPE	Optional	enum	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter needs to be delivered only when third-party multipathing software is enabled.
MULTIPATHTYPE	Optional	enum	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 223: Fibre Channel initiator
ID	Mandatory	string	FC initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
NAME	Conditional	string	Alias. **The value is described as follows:** The value contains 0 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	Host ID. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline 53: initializing 106: deleting 107: modifying
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.

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Parameter	Mandatory/ Conditional	Type	Description
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Create a Fibre Channel initiator as vStore 8.

```
Request:  POST /deviceManager/rest/sn123456780123456789/fc_initiator
{
    "ID": "A000000000000001",
    "NAME": "SSS1",
    "vstoreId":"8"
}

Response:
{
    "data": {
        "FAILOVERMODE": "255",
        "HEALTHSTATUS": "1",
        "ID": "a000000000000001",
        "ISFREE": "true",
        "MULTIPATHTYPE": "0",
```

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```
        "NAME": "SSS1",
        "OPERATIONSYSTEM": "255",
        "PATHTYPE": "255",
        "RUNNINGSTATUS": "28",
        "SPECIALMODETYPE": "255",
        "TYPE": 223,
        "vstoreId": "8",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.1.1.2 Interface for Creating an iSCSI Initiator (Host Port)

Function

This interface is used to create an iSCSI initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	iSCSI initiator IQN. **The value is described as follows:** The value consists of visible ASCII characters, starting with a letter or digit. **Length:**1~223
NAME	Optional	string	iSCSI initiator name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
USECHAP	Optional	bool	CHAP enabled or not. **The value is described as follows:** false: disabled true: enabled **Default:**false
CHAPNAME	Conditional	string	CHAP name. **The value is described as follows:** A CHAP name only contains digits, letters, or special characters (`~!@#$%^&*()-_=+|[{}];:<,.\>/?), and must start with a letter or a digit. **Length:**4~223 **Note:**This parameter is mandatory for enabling CHAP authentication.
CHAPPASSWORD	Conditional	string	CHAP password. **The value is described as follows:** 1. A password contains 12 to 16 characters. 2. A password must contain any three types of uppercase letters, lowercase letters, digits, spaces, and special characters (`~!@#$%^&*()-_=+|[{}];:<,.\>/?). 3. A password cannot be the same as the CHAP name or the reverse of the CHAP name. **Length:**12~16 **Note:**This parameter is mandatory for enabling CHAP authentication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name of the target. **The value is described as follows:** A CHAP name only contains digits, letters, or special characters (`~!@#$%^&*()-_=+|[{}];:<,.\>/?), and must start with a letter or a digit. **Length:**4~223 **Note:**This parameter is mandatory if DISCOVERYVERMODE is set to bidirectional authentication.
CHAPPASSWORDINI-TATORVERTARGET	Conditional	string	CHAP password of the target. **The value is described as follows:** 1. A password contains 12 to 16 characters. 2. A password must contain any three types of uppercase letters, lowercase letters, digits, spaces, and special characters (`~!@#$%^&*()-_=+|[{}];:<,.\>/?). 3. A password cannot be the same as the CHAP name or the reverse of the CHAP name. **Length:**12~16 **Note:**This parameter is mandatory if DISCOVERYVERMODE is set to bidirectional authentication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DISCOVERYVERMODE	Optional	enum	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication
NORMALVERMODE	Optional	enum	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication
PARENTTYPE	Optional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This parameter is delivered when an iSCSI initiator is associated with a host.
PARENTID	Optional	string	Host ID. **The value is described as follows:** - **Note:**This parameter is delivered when an iSCSI initiator is associated with a host.
MULTIPATHTYPE	Optional	enum	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software

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Parameter	Mandatory/Optional/Conditional	Type	Description
PATHTYPE	Optional	enum	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter needs to be delivered only when third-party multipathing software is enabled.
SPECIALMODETYPE	Optional	enum	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter needs to be delivered only when the initiator switchover mode is special ALUA.
FAILOVERMODE	Optional	enum	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter needs to be delivered only when third-party multipathing software is enabled.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 222: iSCSI initiator
ID	Mandatory	string	Indicates the ID of the iSCSI initiator. **The value is described as follows:** -
NAME	Conditional	string	Name of the iSCSI initiator. **The value is described as follows:** - **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	Host ID. **The value is described as follows:** Host ID. **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** Host name. **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline 53: initializing 106: deleting 107: modifying
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
USECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: on false: off
hostIP	Mandatory	string	Host IP address.

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Parameter	Mandatory/ Conditional	Type	Description
CHAPNAME	Conditional	string	CHAP name. **The value is described as follows:** - **Note:**This field is returned if CHAP authentication is enabled for the initiator.
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: ALUA
DISCOVERYVERMODE	Conditional	string(enum)	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.
NORMALVERMODE	Conditional	string(enum)	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name for the initiator to authenticate the target. **The value is described as follows:** - **Note:**This field is returned if bidirectional CHAP authentication is enabled for the initiator.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

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Example

- Create an iSCSI initiator for the vStore whose ID is 8.

```
Request:  POST /deviceManager/rest/sn123456780123456789/iscsi_initiator
{
   "ID": "cvcxvcxb2",
   "USECHAP": false,
   "MULTIPATHTYPE": "1",
   "FAILOVERMODE": "3",
   "SPECIALMODETYPE": "2",
   "PATHTYPE": "1",
   "vstoreId":"8"
}

Response:
{
   "data": {
      "FAILOVERMODE": "3",
      "HEALTHSTATUS": "1",
      "ID": "cvcxvcxb2",
      "ISFREE": "true",
      "MULTIPATHTYPE": "1",
      "OPERATIONSYSTEM": "255",
      "PATHTYPE": "1",
      "RUNNINGSTATUS": "28",
      "SPECIALMODETYPE": "2",
      "TYPE": 222,
      "USECHAP": "false",
      "hostIP": "",
      "vstoreId": "8",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.1.3 Interface for Creating an NVMe over RoCE Initiator

Function

This interface is used to create an NVMe over RoCE initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NQN of the RoCE initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**223
NAME	Optional	string	Alias of the RoCE initiator. **The value is described as follows:** The value contains 1 to 31 characters, including digits, letters, periods (.), underscores (_), and hyphens (-). **Length:**31 **Note:**If this parameter is not delivered, the value is null.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Initiator type. **The value is described as follows:** 57870: NVMe over RoCE initiator

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Indicates the initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit.
NAME	Mandatory	string	Indicates the initiator name. **The value is described as follows:** The value contains 1 to 31 characters, including digits, letters, periods (.), underscores (_), and hyphens (-).
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline
ISFREE	Mandatory	bool	Whether it is added to a host. **The value is described as follows:** false: added to the host. true: not added to the host.
hostIP	Mandatory	string	Host IP address.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Mandatory	string	vStore name.

Example

- Create an NVMe over RoCE initiator as vStore 8.

```
Request:  POST /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator?vstoreId=8
{
    "ID": "12345678912",
    "NAME": "mynqn1"
}

Response:
{
    "data": {
        "HEALTHSTATUS": "1",
        "ID": "12345678912",
        "ISFREE": "true",
        "NAME": "mynqn1",
        "RUNNINGSTATUS": "28",
        "TYPE": 57870,
        "hostIP": "",
        "vstoreId": "8",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.2 Delete

2.7.1.2.1 Interface for Deleting a Fibre Channel Initiator (Host Port)

Function

This interface is used to delete a free Fibre Channel initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fibre Channel initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting a free Fibre Channel initiator.

```
Request: DELETE /deviceManager/rest/$210235843910E6000009/fc_initiator/a000000000000000

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Delete a Fibre Channel initiator as tenant 8.

```
Request:  DELETE /deviceManager/rest/sn123456780123456789/fc_initiator/4444444444444444?
vstoreId=8

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.2.2 Interface for Deleting an FC Initiator from a Host (Host Port)

Function

Delete an FC initiator from a host.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/remove_fc_from_host

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	FC initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Delete an FC initiator from a host.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/fc_initiator/remove_fc_from_host
{
    "ID": "4444444444444444"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete an FC initiator from the host as vStore 8.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/fc_initiator/remove_fc_from_host
{
    "ID": "4444444444444444",
    "vstoreId":"8"
}

Response:
{
    "data": {},
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.7.1.2.3 Interface for Deleting an iSCSI Initiator (Host Port)

Function

This interface is used to delete a free iSCSI initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	iSCSI initiator IQN. **The value is described as follows:** The value consists of visible ASCII characters, starting with a letter or digit. **Length:**1~223
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting a free iSCSI initiator.

```
Request: DELETE /deviceManager/rest/$2102358437l0E7000007/iscsi_initiator/cvcxvcxb

Response:
{
  "data": {},
  "error": {
    "code": 0,
```

```
        "description": "0"
    }
}
```

- Delete the iSCSI initiator as the tenant whose ID is 8.

```
Request:  DELETE /deviceManager/rest/sn123456780123456789/iscsi_initiator/cvcxvcxb2?vstoreId=8

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.2.4 Interface for Deleting an iSCSI Initiator from a Host (Host Port)

Function

This interface is used to delete an iSCSI initiator from a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/remove_iscsi_from_host

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	iSCSI initiator IQN. **The value is described as follows:** The value consists of visible ASCII characters, starting with a letter or digit. **Length:**1~223
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

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Example

- Delete an iSCSI initiator from a host.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/iscsi_initiator/remove_iscsi_from_host
{
   "ID": "4444444444444444"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Delete the iSCSI initiator from the host as tenant 8.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/iscsi_initiator/remove_iscsi_from_host
{
   "ID": "4444444444444444",
   "vstoreId":"8"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.2.5 Interface for Deleting an NVMe over RoCE Initiator

Function

This interface is used to delete an NVMe over RoCE initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NQN of the RoCE initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**223
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting an NVMe over RoCE initiator.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/NVMe_over_RoCE_initiator
{
    "ID": "fff0000f00011111"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete the NVMe over RoCE initiator as vStore 8.

```
Request:  DELETE /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator
{
    "ID": "mynqn",
    "vstoreId":"8"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.1.2.6 Interface for Deleting an NVMe over RoCE Initiator from a Host

Function

This interface is used to delete an NVMe over RoCE initiator from a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/remove_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host ID. **Length:**223
ASSOCIATEOBJTYPE	Mandatory	enum	NVMe over RoCE initiator type. **The value is described as follows:** 57870: NVMe over RoCE initiator.
ASSOCIATEOBJID	Mandatory	string	NVMe over RoCE initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**31
vstoreId	Optional	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

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Example

- Deleting an NVMe over RoCE initiator from a host.

```
Request: PUT /deviceManager/rest/210235843910E6000009/host/remove_associate
{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 57870,
   "ASSOCIATEOBJID": "efcb312432655765"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Delete the NVMe over RoCE initiator from the host as vStore 8.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/host/remove_associate
{
   "ID": "18",
   "ASSOCIATEOBJTYPE": 57870,
   "ASSOCIATEOBJID": "mynqn",
   "vstoreId":"8"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.3 Modify

2.7.1.3.1 Interface for Changing the Fibre Channel Initiator vStore ID

Function

Change the vStore ID of the FC initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/changeVstore/fc_initiator

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	World Wide Name (WWN) of an initiator **The value is described as follows:** Stores port WWNs. A hexadecimal value that contains 16 characters, including letters (A to F), digits (0 to 9), and letters (a to f). The value cannot all be 0, F, or f.
newVstoreId	Mandatory	uint32	New vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Change the owning vStore of the FC initiator whose NQN is 1231231231231231 to the vStore whose ID is 1.

```
Request: PUT /deviceManager/rest/210235982510G2000016/changeVstore/fc_initiator
{
    "ID":"1231231231231231",
    "newVstoreId":"1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.3.2 Interface for Changing the iSCSI Initiator vStore ID

Function

Change the vStore ID of the FC initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/changeVstore/iscsi_initiator

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Indicates the IQN of an initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit.
newVstoreId	Mandatory	uint32	New vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Change the owning vStore of the iSCSI initiator whose IQN is myiqn to the vStore whose ID is 1.

```
Request: PUT /deviceManager/rest/210235982510G2000016/changeVstore/iscsi_initiator
{
    "ID":"myiqn",
    "newVstoreId":"1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.3.3 Interface for Changing the RoCE Initiator vStore ID

Function

Change the vStore ID of the RoCE initiator.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/changeVstore/NVMe_over_RoCE_initiator

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NQN of an initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**223
newVstoreId	Mandatory	uint32	New vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Change the owning vStore of the RoCE initiator whose NQN is mynqn to the vStore whose ID is 1.

```
Request: PUT /deviceManager/rest/210235982510G2000016/changeVstore/NVMe_over_RoCE_initiator
{
    "ID":"mynqn",
    "newVstoreId":"1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.1.3.4 Interface for Modifying a iSCSI Initiator Name

Function

This interface is used to modify a iSCSI initiator name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_iscsi_initiator_name

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CMO_SET_INITIATOR_NAME_CONTROLLER	Mandatory	string	Controller name.
CMO_SET_INITIATOR_NAME_VALUE	Mandatory	string	Initiator name. **The value is described as follows:** Contains letters, digits,hyphens (-), and periods (.). **Length:**0~31

Result

N/A

Example

- Modifying a iSCSI initiator name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/iscsi_iscsi_initiator_name
{
   "CMO_SET_INITIATOR_NAME_CONTROLLER" : "0B",
   "CMO_SET_INITIATOR_NAME_VALUE" : "name1"
}
Response:
{
   "data" : {},
   "error" : {
      "code" : 0,
      "description" : "0"
   }
}
```

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2.7.1.3.5 Interface for Modifying Fibre Channel Initiator Information (Host Port)

Function

This interface is used to modify Fibre Channel initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Fibre Channel initiator ID. **The value is described as follows:** Saving the port WWN. It is a hexadecimal value that contains 16 characters comprised of uppercase letters A to F, lowercase letters a to f, or digits 0 to 9, but cannot all be 0, F, or f.
NAME	Optional	string	Fibre Channel initiator name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**0~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
MULTIPATHTYPE	Optional	enum	Multipathing type, which can be changed only after multipathing is allocated to the host. **The value is described as follows:** 0: default 1: third-party multipathing software
PARENTTYPE	Optional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This parameter is delivered when a Fibre Channel initiator is associated with a host.
PARENTID	Optional	string	Host ID. **Note:**This parameter is delivered when a Fibre Channel initiator is associated with a host.
FAILOVERMODE	Optional	enum	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter is required only when third-party multipathing software is used.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPECIALMODETYPE	Optional	enum	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter needs to be delivered only when the initiator switchover mode is special ALUA.
PATHTYPE	Optional	enum	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter is required only when third-party multipathing software is used.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying Fibre Channel initiators.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fc_initiator/a000000000000000
{
    "NAME": "1234563333",
    "MULTIPATHTYPE": "1",
    "FAILOVERMODE": "3",
    "SPECIALMODETYPE": "2",
    "PATHTYPE": "1"
}

Response:
{
    "data": {},
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modify the basic information about the FC initiator of the vStore whose ID is 8.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/fc_initiator/1234567891234567
{
    "NAME": "1234563333",
    "MULTIPATHTYPE": "1",
    "FAILOVERMODE": "3",
    "SPECIALMODETYPE": "2",
    "PATHTYPE": "1",
    "vstoreId":"8"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.3.6 Interface for Modifying iSCSI Initiator Information (Host Port)

Function

This interface is used to modify iSCSI initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	iSCSI initiator IQN. **The value is described as follows:** The value consists of visible ASCII characters, starting with a letter or digit. **Length:**1~223

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	iSCSI initiator name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**0~31
USECHAP	Optional	bool	CHAP enabled or not. **The value is described as follows:** false: disabled. true: enabled.
CHAPNAME	Conditional	string	CHAP name. **Length:**4~223 **Note:**This parameter is mandatory when CHAP authentication is enabled.
CHAPPASSWORD	Conditional	string	CHAP password. **Length:**12~16 **Note:** 1. This parameter is mandatory when CHAP authentication is enabled. 2. This parameter is mandatory for changing passwords.
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name of the target. **Length:**4~223 **Note:**This parameter is mandatory when bi-directional authentication is enabled for DISCOVERYVERMODE or NORMALVERMODE.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHAPPASSWORDINI-TATORVERTARGET	Conditional	string	CHAP password of the target. **Length:**12~16 **Note:** 1. This parameter is mandatory when bi-directional authentication is enabled for DISCOVERYVERMODE or NORMALVERMODE. 2. This parameter is mandatory when you want to change the CHAP password of the target.
CHAPOLDPASSWORDINITATORVERTARGET	Conditional	string	Old CHAP password of the target. **Length:**1~16 **Note:**This parameter is mandatory when you want to change the CHAP password of the target.
CHAPOLDPASSWORD	Conditional	string	CHAP password. This parameter is mandatory for password change. **Length:**1~16 **Note:**This parameter is mandatory for changing passwords.
MULTIPATHTYPE	Optional	enum	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPECIALMODETYPE	Optional	enum	Special mode type of an initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter needs to be delivered only when the initiator switchover mode is special ALUA.
PATHTYPE	Optional	enum	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter is required only when third-party multipathing software is used.
FAILOVERMODE	Optional	enum	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter is required only when third-party multipathing software is used.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DISCOVERYVERMODE	Optional	enum	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication
NORMALVERMODE	Optional	enum	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication
PARENTTYPE	Optional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This parameter is delivered when an iSCSI initiator is associated with a host.
PARENTID	Optional	string	Host ID. **Note:**This parameter is delivered when an iSCSI initiator is associated with a host.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

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Example

- Modifying iSCSI initiators.

```
Request: PUT /deviceManager/rest/210235843710E7000007/iscsi_initiator/111111111111111111
{
    "MULTIPATHTYPE": "1",
    "NAME": "defr",
    "FAILOVERMODE": "3",
    "SPECIALMODETYPE": "2",
    "PATHTYPE": "1"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modify the basic information about the iSCSI initiator as vStore 6.

```
Request:  PUT /deviceManager/rest/2102352WYE41K1610101/iscsi_initiator/myiscsi1
{
    "MULTIPATHTYPE": "1",
    "NAME": "defr1",
    "FAILOVERMODE": "3",
    "SPECIALMODETYPE": "2",
    "PATHTYPE": "1",
    "vstoreId":"6"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.3.7 Interface for Modifying NVMe over RoCE Initiator Information

Function

This interface is used to modify basic information about NVMe over RoCE initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NQN of the RoCE initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**223
NAME	Optional	string	Alias of the RoCE initiator. **The value is described as follows:** The value contains 1 to 31 characters, including digits, letters, periods (.), underscores (_), and hyphens (-). **Length:**31
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying basic information about NVMe over RoCE initiators.

```
Request: PUT /deviceManager/rest/210235843710E7000007/NVMe_over_RoCE_initiator
{
    "ID": "fff0000f00011111",
    "NAME": "roce"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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- Modify the basic information about the NVMe over RoCE initiator as vStore 8.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator
{
    "ID": "mynqn",
    "NAME": "roce1",
    "vstoreId":"8"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.4 Query

2.7.1.4.1 Interface for Batch Querying Fibre Channel Initiator Information (Host Port)

Function

This interface is used to query basic information about Fibre Channel initiators in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
ISFREE	Optional	bool	Free or not. **The value is described as follows:** "false": added to a host "true": not added to a host
PARENTID	Optional	string	Host ID. **The value is described as follows:** - **Note:**This field is delivered when the value of ISFREE is "false" or this field of ISFREE is not delivered.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 223: Fibre Channel initiator
ID	Mandatory	string	Fibre Channel initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
NAME	Conditional	string	Alias. **The value is described as follows:** The value contains 0 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	ID of a host. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** -
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.

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Parameter	Mandatory/ Conditional	Type	Description
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.
vstoreName	Mandatory	string	vStore name.

Example

- Query basic information about Fibre Channel initiators in batches as vStore 8.

```
Request: GET /deviceManager/rest/sn123456780123456789/fc_initiator?vstoreId=8

Response: {
   "data": [
      {
         "FAILOVERMODE": "3",
         "HEALTHSTATUS": "1",
         "ID": "1234567891234567",
         "ISFREE": "true",
         "MULTIPATHTYPE": "1",
         "NAME": "1234563333",
         "OPERATIONSYSTEM": "255",
         "PATHTYPE": "1",
         "RUNNINGSTATUS": "28",
         "SPECIALMODETYPE": "2",
```

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```
            "TYPE": 223,
            "vstoreId": "8",
            "vstoreName": "tq"
        },
        {
            "FAILOVERMODE": "255",
            "HEALTHSTATUS": "1",
            "ID": "a000000000000001",
            "ISFREE": "true",
            "MULTIPATHTYPE": "0",
            "NAME": "SSS1",
            "OPERATIONSYSTEM": "255",
            "PATHTYPE": "255",
            "RUNNINGSTATUS": "28",
            "SPECIALMODETYPE": "255",
            "TYPE": 223,
            "vstoreId": "8",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.1.4.2 Interface for Batch Querying iSCSI Initiator Information (Host Port)

Function

This interface is used to batch query basic information about iSCSI initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
ISFREE	Optional	bool	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
PARENTID	Optional	string	Host ID. **The value is described as follows:** - **Note:**This field is delivered when the value of ISFREE is "false" or the ISFREE field is not delivered.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 222: iSCSI initiator
ID	Mandatory	string	Indicates the ID of the iSCSI initiator. **The value is described as follows:** -
NAME	Conditional	string	iSCSI initiator name. **The value is described as follows:** - **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	Host ID. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 27: Online 28: Offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
USECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: on false: off
CHAPNAME	Conditional	string	CHAP name. **The value is described as follows:** - **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software
DISCOVERYVERMODE	Conditional	string(enum)	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.
NORMALVERMODE	Conditional	string(enum)	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.

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Parameter	Mandatory/ Conditional	Type	Description
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name for the initiator to authenticate the target. **The value is described as follows:** - **Note:**This field is returned if bidirectional CHAP authentication is enabled for the initiator.
hostIP	Mandatory	string	Host IP address. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Query basic information about iSCSI initiators in batches as vStore 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/iscsi_initiator?vstoreId=8

Response:
{
   "data": [
      {
         "FAILOVERMODE": "255",
         "HEALTHSTATUS": "1",
         "ID": "iqng",
         "ISFREE": "true",
         "MULTIPATHTYPE": "0",
         "OPERATIONSYSTEM": "255",
         "PATHTYPE": "255",
         "RUNNINGSTATUS": "28",
         "SPECIALMODETYPE": "255",
         "TYPE": 222,
         "USECHAP": "false",
         "hostIP": "",
         "vstoreId": "8",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.4.3 Interface for Batch Querying NVMe over RoCE Initiator Information

Function

This interface is used to batch query basic information about NVMe over RoCE initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported. **Length:**31
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The value range indicates that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Length:**31
ISFREE		bool	Whether it is added to a host. **The value is described as follows:** false: added to the host. true: not added to the host. **Note:**If this parameter is not delivered, the results in all cases are returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type of an initiator. **The value is described as follows:** 57870: NVMe over RoCE initiator
ID	Mandatory	string	ID of an initiator. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit.
NAME	Conditional	string	Initiator name. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), periods (.) and hyphens (-). **Note:**This parameter is returned only when name has a value.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 0: unknown; 27: online; 28: offline

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Parameter	Mandatory/ Conditional	Type	Description
ISFREE	Mandatory	bool	Whether it is added to a host. **The value is described as follows:** false: added to the host. true: not added to the host.
PARENTTYPE	Mandatory	enum	Parent node type (host). **The value is described as follows:** 21: host **Note:**This parameter is returned only when the initiator is associated with a host.
PARENTID	Mandatory	uint32	Parent node ID (host ID). **The value is described as follows:** 0..24575 **Note:**This parameter is returned only when the initiator is associated with a host.
PARENTNAME	Conditional	string	Parent node name (host name). **The value is described as follows:** To obtain the value, run "show host general". **Note:**This parameter is returned only when the initiator is associated with a host.
hostIP	Mandatory	string	Host IP address.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Mandatory	string	vStore name.

Example

- Query basic information about NVMe over RoCE initiators that are not associated with hosts in batches as tenant 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator?
ISFREE=true&range=[0-100]&vstoreId=8

Response:
{
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "mynqn",
         "ISFREE": "true",
         "RUNNINGSTATUS": "28",
         "TYPE": 57870,
         "hostIP": "",
         "vstoreId": "8",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.4.4 Interface for Implementing Associated Query of NVMe over RoCE Initiator Information

Function

This interface is used to implement associated query of NVMe over RoCE initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator/associate

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter		string	Filter criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported. **Length:**31
range		string	Query range. **The value is described as follows:** Query range: [i-j]. The value range indicates that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Length:**31
ASSOCIATEOBJID	Mandatory	string	ID of the associated host or Ethernet port. **The value is described as follows:** You can run the "show host general" or "show port general" command to obtain the ID. **Length:**31
ASSOCIATEOBJTYPE	Mandatory	enum	Association type. **The value is described as follows:** 21: host; 213: Ethernet port
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
NAME	Conditional	string	Initiator name. **The value is described as follows:** The value is a string of 1 to 31 characters, including digits, letters, ".", "_", and "-". **Note:**This parameter is returned only when name has a value.
ID	Mandatory	string	Initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII code < 127) and must start with a letter or a digit.
ISFREE	Mandatory	bool	Whether to add a host. **The value is described as follows:** false: The host has been added. true: The host is not added.
TYPE	Mandatory	enum	Initiator type. **The value is described as follows:** 57870: NVMe over RoCE initiator
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: normal
PARENTID	Mandatory	uint32	Host ID. **The value is described as follows:** 0..24575.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Parent object type (host). **The value is described as follows:** 21: host
PARENTNAME	Mandatory	string	Host name. **The value is described as follows:** You can run the "show host general" command to obtain the value.
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 0: unknown; 27: online; 28: offline
hostIP	Mandatory	string	Host IP address.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Query the NVMe over RoCE initiator associated with the tenant whose ID is 2.

```
Request: GET /deviceManager/rest/2102350BVB10E9198703/NVMe_over_RoCE_initiator/associate?
ASSOCIATEOBJTYPE=21&ASSOCIATEOBJID=0&vstoreId=2

Response:
{
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "test",
         "ISFREE": "false",
         "PARENTID": "1",
         "PARENTNAME": "hs1",
         "PARENTTYPE": 21,
         "RUNNINGSTATUS": "28",
         "TYPE": 57870,
         "hostIP": "",
         "vstoreId": "2",
         "vstoreName": "xyz1"
      }
   ],
   "error": {
      "code": 0,
```

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```
        "description": "0"
    }
}
```

2.7.1.4.5 Interface for Querying a iSCSI Initiator Name

Function

Query an iSCSI initiator name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_iscsi_initiator_name

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
CMO_SET_INITIATOR_NAME_CONTROLLER	Mandatory	string	Controller name.
CMO_SET_INITIATOR_NAME_VALUE	Mandatory	string	Initiator name.

Example

- Query an iSCSI initiator name.

```
Request: GET /deviceManager/rest/210235843710E7000007/iscsi_iscsi_initiator_name

Response: {
    "data": [
        {
            "CMO_SET_INITIATOR_NAME_CONTROLLER": "0B",
            "CMO_SET_INITIATOR_NAME_VALUE":
"iqn.2006-08.com.huawei:oceanstor:21001051720c8a61:2"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.1.4.6 Interface for Querying Associated Fibre Channel Initiators (Host Port)

Function

This interface is used to query associated Fibre Channel initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port
ASSOCIATEOBJID	Mandatory	string	ID of the associated FC port. **The value is described as follows:** -
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 223: Fibre Channel initiator
ID	Mandatory	string	FC initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
NAME	Conditional	string	Alias. **The value is described as follows:** The value contains 0 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned if the initiator name is not blank.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Conditional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	ID of a host. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

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Example

- Query the associated FC initiator of the tenant whose ID is 3.

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_initiator/associate?
ASSOCIATEOBJTYPE=212&ASSOCIATEOBJID=1114368&range=[0-100]&vstoreId=3

Response:
{
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "1212121212121212",
         "ISFREE": "false",
         "MULTIPATHTYPE": "1",
         "NAME": "12",
         "OPERATIONSYSTEM": "1",
         "PARENTID": "1",
         "PARENTTYPE": 21,
         "PARENTNAME": "Host001",
         "RUNNINGSTATUS": "27",
         "TYPE": 223,
         "FAILOVERMODE": "3",
         "SPECIALMODETYPE": "2",
         "PATHTYPE": "1",
         "vstoreId": "3",
         "vstoreName": "xyz1"
      },
      {
         "HEALTHSTATUS": "1",
         "ID": "1313131313131313",
         "ISFREE": "false",
         "MULTIPATHTYPE": "1",
         "NAME": "13",
         "OPERATIONSYSTEM": "1",
         "PARENTID": "10",
         "PARENTTYPE": 21,
         "PARENTNAME": "Host001",
         "RUNNINGSTATUS": "27",
         "TYPE": 223,
         "FAILOVERMODE": "3",
         "SPECIALMODETYPE": "2",
         "PATHTYPE": "1",
         "vstoreId": "3",
         "vstoreName": "xyz1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.4.7 Interface for Querying Associated iSCSI Initiators (Host Port)

Function

This interface is used to querying associated iSCSI initiators.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/associate

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 213: Ethernet port
ASSOCIATEOBJID	Mandatory	string	Associated Ethernet port ID. **The value is described as follows:** -
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 222: iSCSI initiator
ID	Mandatory	string	Indicates the ID of the iSCSI initiator. **The value is described as follows:** -
NAME	Conditional	string	Alias. **The value is described as follows:** The value contains 0 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	ID of a host. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
USECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: on false: off
CHAPNAME	Conditional	string	CHAP name. **The value is described as follows:** - **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name of the target. **The value is described as follows:** - **Note:**This parameter is mandatory if DISCOVERYVERMODE is set to bidirectional authentication.
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software
DISCOVERYVERMODE	Conditional	string(enum)	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.
NORMALVERMODE	Conditional	string(enum)	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.

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Parameter	Mandatory/ Conditional	Type	Description
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Query the iSCSI initiator associated with the vStore whose ID is 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/iscsi_initiator/associate?
ASSOCIATEOBJTYPE=213&ASSOCIATEOBJID=281474976849923&vstoreId=2

Response:
{
   "data": [
      {
         "FAILOVERMODE": "255",
         "HEALTHSTATUS": "1",
         "ID": "iqn.2006-08.com.huawei:oceanstor:2100887766554433::1",
         "ISFREE": "true",
         "MULTIPATHTYPE": "0",
         "OPERATIONSYSTEM": "255",
         "PATHTYPE": "255",
         "RUNNINGSTATUS": "27",
```

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```
            "SPECIALMODETYPE": "255",
            "TYPE": 222,
            "USECHAP": "false",
            "vstoreId": "2",
            "vstoreName":
"xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1xyz1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.1.4.8 Interface for Querying Fibre Channel Initiator Information (Host Port)

Function

This interface is used to query Fibre Channel initiator information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Saving the port WWN. The value is a 16-bit hexadecimal number. **The value is described as follows:** -
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 223: Fibre Channel initiator
ID	Mandatory	string	FC initiator ID. **The value is described as follows:** Saving the port WWN. The value is a 16-bit hexadecimal number.
NAME	Conditional	string	Alias. **The value is described as follows:** The value contains 0 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Parent object type (host). **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	Host ID. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 27: online 28: offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** -
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.

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Parameter	Mandatory/ Conditional	Type	Description
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Query the basic information about the FC initiator as vStore 8.

```
Request: GET /deviceManager/rest/sn123456780123456789/fc_initiator/a000000000000001?vstoreId=8

Response: {
    "data": {
        "FAILOVERMODE": "255",
        "HEALTHSTATUS": "1",
        "ID": "a000000000000001",
        "ISFREE": "true",
        "MULTIPATHTYPE": "0",
        "NAME": "SSS1",
```

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```
        "OPERATIONSYSTEM": "255",
        "PATHTYPE": "255",
        "RUNNINGSTATUS": "28",
        "SPECIALMODETYPE": "255",
        "TYPE": 223,
        "vstoreId": "8",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.1.4.9 Interface for Querying iSCSI Initiator Information (Host Port)

Function

This interface is used to query basic information about an iSCSI initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	iSCSI initiator IQN. **The value is described as follows:** The value consists of visible ASCII characters, starting with a letter or digit. **Length:**1~223
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 222: iSCSI initiator
ID	Mandatory	string	Indicates the ID of the iSCSI initiator. **The value is described as follows:** -
NAME	Conditional	string	iSCSI initiator name. **The value is described as follows:** - **Note:**This field is returned if the initiator name is not blank.
PARENTTYPE	Conditional	enum	Type of the parent object. **The value is described as follows:** 21: host **Note:**This field is returned if the initiator is not a free one.
PARENTID	Conditional	string	Host ID. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Conditional	string	Host name. **The value is described as follows:** - **Note:**This field is returned if the initiator is not a free one.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 27: Online 28: Offline
ISFREE	Mandatory	string(bool)	Free or not. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
USECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: on false: off
CHAPNAME	Conditional	string	CHAP name. **The value is described as follows:** - **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
MULTIPATHTYPE	Mandatory	string(enum)	Multipathing type. **The value is described as follows:** 0: default 1: third-party multipathing software
DISCOVERYVERMODE	Conditional	string(enum)	Authentication mode in the discovery phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.
NORMALVERMODE	Conditional	string(enum)	Authentication mode in the normal phase. **The value is described as follows:** 0: no authentication 1: unidirectional authentication 2: bidirectional authentication **Note:**This field is returned if CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC **Note:**255 is returned if OPERATIONSYSTEM is not delivered.
CHAPNAMEINITATOR-VERTARGET	Conditional	string	CHAP name for the initiator to authenticate the target. **The value is described as follows:** - **Note:**This field is returned if bidirectional CHAP authentication is enabled for the initiator.

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Parameter	Mandatory/ Conditional	Type	Description
FAILOVERMODE	Mandatory	string(enum)	Initiator switchover mode. **The value is described as follows:** 0: early-version ALUA 1: common ALUA 2: ALUA not used 3: special ALUA **Note:**This parameter value is 255 when third-party multipathing software is disabled.
SPECIALMODETYPE	Mandatory	string(enum)	Special mode type of the initiator. **The value is described as follows:** 0: mode 0 1: mode 1 2: mode 2 3: mode 3 **Note:**This parameter value is 255 when the initiator switchover mode is not special ALUA.
PATHTYPE	Mandatory	string(enum)	Initiator path type. **The value is described as follows:** 0: preferred path 1: non-preferred path **Note:**This parameter value is 255 when third-party multipathing software is disabled.
hostIP	Mandatory	string	Host IP address.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

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Example

- Query the basic information about the iSCSI initiator as tenant 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/iscsi_initiator/iqng?vstoreId=8

Response:
{
   "data": {
      "FAILOVERMODE": "3",
      "HEALTHSTATUS": "1",
      "ID": "iqng",
      "ISFREE": "true",
      "MULTIPATHTYPE": "1",
      "NAME": "defr",
      "OPERATIONSYSTEM": "255",
      "PATHTYPE": "1",
      "RUNNINGSTATUS": "28",
      "SPECIALMODETYPE": "2",
      "TYPE": 222,
      "USECHAP": "false",
      "hostIP": "",
      "vstoreId": "8",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.4.10 Interface for Querying NVMe over RoCE Initiator Information

Function

This interface is used to query basic information about an NVMe over RoCE initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator/{id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	Initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII code < 127) and must start with a letter or a digit. **Length:**223
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Initiator type. **The value is described as follows:** 57870: NVMe over RoCE initiator
ID	Mandatory	string	Initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII code < 127) and must start with a letter or a digit.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Conditional	string	Initiator name. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), periods (.), and hyphens (-). **Note:**This parameter is returned only when "name" is set.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: Normal
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 0: -- 27: Online 28: Offline
ISFREE	Mandatory	bool	Whether the initiator is added to a host. **The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host.
PARENTTYPE	Mandatory	enum	Parent node type (host). **The value is described as follows:** 21: host **Note:**This parameter is returned only when the initiator is associated with a host.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	uint32	Parent node ID (host ID). **The value is described as follows:** 0..24575 **Note:**This parameter is returned only when the initiator is associated with a host.
PARENTNAME	Conditional	string	Parent node name (host name). **The value is described as follows:** To obtain the value, run "show host general". **Note:**This parameter is returned only when the initiator is associated with a host.
hostIP	Mandatory	string	Host IP address.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Query the basic information about the NVMe over RoCE initiator as tenant 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator/mynqn?
vstoreId=8

Response:
{
   "data": {
      "HEALTHSTATUS": "1",
      "ID": "mynqn",
      "ISFREE": "true",
      "RUNNINGSTATUS": "28",
      "TYPE": 57870,
      "hostIP": "",
      "vstoreId": "8",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.7.1.4.11 Interface for Querying the Number of Fibre Channel Initiators(Host Port)

Function

This interface is used to query the number of Fibre Channel initiators (host ports).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_initiator/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
ASSOCIATEOBJID	Conditional	string	ID of the associated FC port. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 212: FC port **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISFREE	Optional	bool	Free or not. **The value is described as follows:** false: No. The initiator has been added to a host. true: Yes. The initiator has not been added to a host.
PARENTID	Optional	string	Host ID. **Note:**This field is delivered when the value of ISFREE is "false" or this field of ISFREE is not delivered.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried Fibre Channel Initiator.

Example

- Querying the number of Fibre Channel initiators (host ports).

```
Request: GET /deviceManager/rest/210235843910E6000009/fc_initiator/count

Response: {
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of FC initiators (host ports) as vStore 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/fc_initiator/count?vstoreId=8

Response:
```

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```
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.1.4.12 Interface for Querying the Number of iSCSI Initiators(Host Port)

Function

This interface is used to query the number of iSCSI initiators (host ports).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_initiator/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 213: Ethernet port **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJID	Conditional	string	Associated Ethernet port ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISFREE	Optional	bool	Free or not. **The value is described as follows:** false: No. The initiator has been added to a host. true: Yes. The initiator has not been added to a host.
PARENTID	Optional	string	Host ID. **Note:**This field is delivered when the value of ISFREE is "false" or this field of ISFREE is not delivered.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried iSCSI initiators (host ports).

Example

- Querying the number of iSCSI initiators (host ports).

```
Request: GET /deviceManager/rest/210235843910E6000009/iscsi_initiator/count

Response:
{
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Query the number of iSCSI initiators (host ports) as vStore 8.

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```
Request:  GET /deviceManager/rest/sn12345678012345678 9/iscsi_initiator/count?vstoreId=8

Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.4.13 Interface for Querying the Number of NVMe over RoCE Initiators

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NVMe_over_RoCE_initiator/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
isFree	Conditional	bool	**The value is described as follows:** The value can be: "false": not free. The initiator is added to a host. "true": free. The initiator is not added to a host. **Note:**If not issued, all cases will be returned.
ASSOCIATEOBJTYPE	Conditional	enum	**The value is described as follows:** 21: host 213: Ethernet port **Note:**If this parameter is not delivered, the results in all cases are returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	**The value is described as follows:** To obtain the value, run "show host general" or "show port general". **Length:**31 **Note:**If this parameter is not delivered, the results in all cases are returned.
filter	Optional	string	**The value is described as follows:** Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported. **Length:**31
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	**The value is described as follows:** 0..8192

Example

- Querying the number of NVMe over RoCE initiators.

```
Request: GET /deviceManager/rest/210235843910E6000009/NVMe_over_RoCE_initiator/count

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Query the number of NVMe over RoCE initiators as tenant 8.

```
Request:  GET /deviceManager/rest/sn123456780123456789/NVMe_over_RoCE_initiator/count?
vstoreId=8

Response:
{
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.1.5 Others

2.7.1.5.1 Interface for Associating a Host with an NVMe over RoCE Initiator

Function

This interface is used to associate a host with an NVMe over RoCE initiator.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/create_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host ID. **Length:**223
ASSOCIATEOBJTYPE	Mandatory	enum	NVMe over RoCE initiator type. **The value is described as follows:** 57870: NVMe over RoCE initiator.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	NVMe over RoCE initiator ID. **The value is described as follows:** The value contains 1 to 223 characters (32 < ASCII codes < 127) and must start with a letter or digit. **Length:**31
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Associating a host with an NVMe over RoCE initiator.

```
Request: PUT /deviceManager/rest/210235843910E6000009/host/create_associate
{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 57870,
    "ASSOCIATEOBJID": "efcb312432655765"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Associate the tenant whose ID is 8 with the NVMe over RoCE initiator on the host.

```
Request:  PUT /deviceManager/rest/sn123456780123456789/host/create_associate
{
    "ID": "18",
    "ASSOCIATEOBJTYPE": 57870,
    "ASSOCIATEOBJID": "mynqn",
    "vstoreId":"8"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.7.2 lun

2.7.2.1 Add

2.7.2.1.1 Interface for Creating a LUN

Function

This interface is used to create a LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	LUN ID. **The value is described as follows:** -
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255
SUBTYPE	Optional	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN **Default:**0: common LUN
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ALLOCTYPE	Optional	enum	Space allocation type. **The value is described as follows:** 1: thin LUN **Default:**1: thin LUN
CAPACITY	Conditional	uint64	Configured capacity. **The value is described as follows:** - **Unit:**sectors **Note:**This parameter is unavailable when an eDevLUN is expanded but is mandatory when a traditional LUN is expanded.
WRITEPOLICY	Optional	enum	Write policy. **The value is described as follows:** 1: write back 2: write through **Note:**By default, the parameter value is write-back for common LUNs and write-through for eDevLUNs.
PREFETCHPOLICY	Optional	enum	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Default:**3: intelligent prefetch

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Parameter	Mandatory/Optional/Conditional	Type	Description
PREFETCHVALUE	Conditional	uint32	Prefetch policy value. **The value is described as follows:** The value of constant prefetch ranges from 0 to 2048 sectors. The value of variable prefetch ranges from 0 to 1024 times. **Note:**The field is not used.
OWNINGCONTROLLER	Optional	string	Owning controller. **The value is described as follows:** - **Note:**The field is not used.
REMOTELUNID	Conditional	string	External LUN ID of the eDevLUN. **The value is described as follows:** - **Note:**This parameter must be delivered if USAGETYPE is 1 and SUBTYPE is 0.

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Parameter	Mandatory/Optional/Conditional	Type	Description
USAGETYPE	Conditional	enum	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN **Default:**0: traditional LUN **Note:**This parameter is mandatory when the following is created: eDevLUN, VVol LUN, PE LUN, global image repository LUN, local image repository LUN, container configuration LUN, or in-band LUN.
ENABLECOMPRESSION	Optional	bool	Compression enabled or not. **The value is described as follows:** false: disabled true: enabled **Default:**true: enabled **Note:**eDevLUNs do not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLESMARTDEDUP	Optional	bool	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled **Default:**true: enabled **Note:**eDevLUNs do not support this parameter.
DISGUISEREMOTEARRAYID	Conditional	string	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over. **The value is described as follows:** - **Note:**This parameter must be delivered if LUN masquerading is enabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DISGUISESTATUS	Optional	enum	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs) **Default:**0: no masquerading
EXTENDIFSWITCH	Optional	bool	Whether to support the external DIF feature. **The value is described as follows:** false: not supported true: supported **Default:**false: not supported
ISCSITHINLUNTHRES-HOLD	Optional	uint32	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. **Default:**90

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Optional	bool	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Default:**false: off
WORKLOADTYPEID	Optional	string	Application type ID. **The value is described as follows:** The value ranges from 0 to 2048.
ignoreRsvCheck	Optional	bool	Whether to ignore the SCSI reservation check. **The value is described as follows:** false: no true: yes
serviceEnabled	Optional	bool	Whether to enable the service. **The value is described as follows:** false: off true: no **Default:**true **Note:**This parameter is valid only when the following is created: global image repository LUN, local image repository LUN, or container configuration LUN.

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Parameter	Mandatory/Optional/Conditional	Type	Description
devController	Optional	string	Owning controller of a block device. **The value is described as follows:** The value is all or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7. **Length:**3 **Note:**When you create a local image repository LUN or container configuration LUN, the value can be XA, XB, XC, or XD, where X is an integer ranging from 0 to 7. This parameter is valid only when the following is created: global image repository LUN, local image repository LUN, or container configuration LUN.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	ID of a LUN object. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** - **Unit:**sectors
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** - **Unit:**sectors
SECTORSIZE	Mandatory	string(uint64)	Block size. **The value is described as follows:** - **Unit:**bytes
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WWN	Mandatory	string	WWN. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running a write policy. **The value is described as follows:** 0: initializing 1: write back 2: write through
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **The value is described as follows:** - **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller. **The value is described as follows:** - **Note:**The field is not used.
WORKINGCONTROLLER	Mandatory	string	Working controller. **The value is described as follows:** - **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
THINCAPACITYUSAGE	Conditional	string(uint32)	Ratio of thin LUN capacity occupied by data to the capacity available to the thin LUN. **The value is described as follows:** - **Note:**This field is not returned if the LUN is being created.
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data replication capacity, expressed in sectors. Capacity consumed by data replication refers to the capacity used for snapshot copy-on-write (COW). **The value is described as follows:** - **Unit:**sectors
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
REMOTELUNID	Mandatory	string	ID of the external LUN that maps to the eDevLUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.

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Parameter	Mandatory/ Conditional	Type	Description
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN **Note:**.
remoteLunWwn	Mandatory	string	WWN of the external LUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
LUNMigrationOrigin	Mandatory	string(enum)	Indicates whether the LUN serves as the source or target LUN of LUN migration. **The value is described as follows:** 0: source LUN 1: target LUN **Note:**If there is no valid value, -1 is returned.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled. **The value is described as follows:** false: disabled true: enabled

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEDEDUPCHECK	Mandatory	string(bool)	Indicates whether deduplication check is enabled when weak hash is used. **The value is described as follows:** false: disabled true: enabled
DEDUPSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by deduplication. **The value is described as follows:** - **Unit:**sectors
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by compression. **The value is described as follows:** - **Unit:**sectors
TOTALSAVEDCAPACITY	Mandatory	string(uint64)	Total space saved. **The value is described as follows:** - **Unit:**sectors
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRESHOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. **Note:**If there is no valid value, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Note:**If there is no valid value, -1 is returned.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** -
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** -
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** -
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
DISGUISESTATUS	Conditional	string(enum)	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs)
DISGUISEREMOTEAR-RAYID	Conditional	string	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over. **The value is described as follows:** - **Note:**"--" is returned if the LUN is not masqueraded.
EXTENDIFSWITCH	Mandatory	string(bool)	Whether to support the external DIF feature. **The value is described as follows:** false: not supported true: supported
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	Replication ID list. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: NoProtected 1: Capacity 2: Performance 3: Extreme Performance 4: Multi-Tiers
CAPACITYALARMLE-VEL	Conditional	string(enum)	VASA: thin LUN capacity alarm severity. **The value is described as follows:** 2: normal 3: warning 6: critical **Note:**This field is returned for thin LUNs only.
WORKLOADTYPENAME	Mandatory	string	Application type name. **The value is described as follows:** -
WORKLOADTYPEID	Mandatory	string	Application type ID. **The value is described as follows:** - **Note:**"4294967295" indicates an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
takeOverLunWwn	Mandatory	string	WWN of the takeover LUN. **The value is described as follows:** -
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** - **Note:**If there is an ID, the ID is returned. If there is no ID, an empty string is returned.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
ISCLONE	Mandatory	string(bool)	Whether it is a clone LUN. **The value is described as follows:** false: no true: yes
SNAPSHOTSCHEDULEID	Mandatory	string	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the timing snapshot schedule.

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Parameter	Mandatory/ Conditional	Type	Description
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: false 1: true
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** The value can be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB. **Unit:**Sectors
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
serviceEnabled	Mandatory	bool	Block device enabling switch. **The value is described as follows:** 0: false 1: true
blockDeviceName	Mandatory	string	Block device name. **The value is described as follows:** The value contains digits, letters, and underscores (_).

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Parameter	Mandatory/ Conditional	Type	Description
devController	Mandatory	string	Owning controller of a block device. **The value is described as follows:** The value is all or --, or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7.
SMARTCACHEPARTITIONID	Mandatory	string	ID of the SmartCache partition. **The value is described as follows:** The value is from 1 to 16.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
MIRRORPOLICY	Mandatory	string	Indicates the mirroring policy.
SNAPSHOTIDS	Mandatory	string	Snapshot IDs.
ISCHECKZEROPAGE	Mandatory	string	Tag of the all-zero page check.
ISADDTOLUNGROUP	Mandatory	string(bool)	Whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes

Example

- Creating a LUN.

```
Request: POST /deviceManager/rest/210235843710E7000007/lun
{
    "NAME": "LUN073",
    "ALLOCTYPE": 1,
    "CAPACITY": 2097152,
    "PARENTID": "0",
    "WRITEPOLICY": 1,
    "WORKLOADTYPEID": "1",
    "USAGETYPE": "7",
    "serviceEnabled": "true",
    "devController":"0A"
}
```

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Response:


```
{
   "data": {
      "ALLOCCAPACITY": "0",
      "ALLOCTYPE": "1",
      "CAPABILITY": "3",
      "CAPACITY": "2097152",
      "CAPACITYALARMLEVEL": "2",
      "COMPRESSION": "0",
      "COMPRESSIONSAVEDCAPACITY": "0",
      "COMPRESSIONSAVEDRATIO": "0",
      "DEDUPSAVEDCAPACITY": "0",
      "DEDUPSAVEDRATIO": "0",
      "DESCRIPTION": "",
      "DISGUISEREMOTEARRAYID": "--",
      "DISGUISESTATUS": "0",
      "DRS_ENABLE": "false",
      "ENABLECOMPRESSION": "true",
      "ENABLEDEDUPCHECK": "false",
      "ENABLEISCSITHINLUNTHRESHOLD": "false",
      "ENABLESMARTDEDUP": "false",
      "EXPOSEDTOINITIATOR": "false",
      "EXTENDIFSWITCH": "false",
      "HEALTHSTATUS": "1",
      "ID": "57",
      "IOCLASSID": "",
      "IOPRIORITY": "1",
      "ISADD2LUNGROUP": "false",
      "ISADDTOLUNGROUP": "false",
      "ISCHECKZEROPAGE": "false",
      "ISCLONE": "false",
      "ISCSITHINLUNTHRESHOLD": "90",
      "LUNMigrationOrigin": "-1",
      "MIRRORPOLICY": "1",
      "MIRRORTYPE": "0",
      "NAME": "LUN073",
      "NGUID": "710062d5870009687817be5500000039",
      "OWNINGCONTROLLER": "--",
      "PARENTID": "0",
      "PARENTNAME": "s0",
      "PREFETCHPOLICY": "0",
      "PREFETCHVALUE": "0",
      "REMOTELUNID": "--",
      "REMOTEREPLICATIONIDS": "[]",
      "REPLICATION_CAPACITY": "0",
      "RUNNINGSTATUS": "27",
      "RUNNINGWRITEPOLICY": "1",
      "SECTORSIZE": "512",
      "SNAPSHOTIDS": "[]",
      "SNAPSHOTSCHEDULEID": "--",
      "SUBTYPE": "0",
      "THINCAPACITYUSAGE": "0",
      "TOTALSAVEDCAPACITY": "0",
      "TOTALSAVEDRATIO": "0",
      "TYPE": 11,
      "USAGETYPE": "7",
      "WORKINGCONTROLLER": "--",
      "WORKLOADTYPEID": "1",
      "WORKLOADTYPENAME": "Oracle_OLAP",
      "WRITEPOLICY": "1",
      "WWN": "67817be10062d5870009685500000039",
      "devController": "0A",
      "grainSize": "64",
      "isShowDedupAndCompression": "false",
      "remoteLunWwn": "--",
      "serviceEnabled": "true",
      "takeOverLunWwn": "--",
      "SMARTCACHEPARTITIONID": "1",
      "vstoreId":"0",
```


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```
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.1.2 Interface for Creating a LUN Clone

Function

This interface is used to create a LUN clone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISCLONE	Mandatory	bool	Whether a LUN is a clone LUN. **The value is described as follows:** true: yes
NAME	Mandatory	string	Clone name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
WORKLOADTYPEID	Optional	string	Application type ID. **The value is described as follows:** The value ranges from 0 to 2048.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CLONESOURCEID	Mandatory	uint32	Clone source object ID. **The value is described as follows:** The value ranges from 0 to 65535.
SPLITSPEED	Optional	enum	Clone splitting speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest **Default:**2: middle
ID	Optional	string	Clone object ID. **The value is described as follows:** The value ranges from 0 to 65535.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	Clone ID.
NAME	Mandatory	string	Clone name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity.
SECTORSIZE	Mandatory	string(uint64)	Block size.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped

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Parameter	Mandatory/ Conditional	Type	Description
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running a write policy. **The value is described as follows:** 0: initializing 1: write back 2: write through
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller.
IOCLASSID	Mandatory	string	I/O class.
IOPRIORITY	Conditional	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high

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Parameter	Mandatory/ Conditional	Type	Description
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
ISCHECKZEROPAGE	Mandatory	string(bool)	Tag of all-zero page check. **The value is described as follows:** false: not checked true: checked
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data protection capacity, which refers to the capacity used for snapshot copy-on-write (COW).
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) **Note:**.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled. **The value is described as follows:** false: disabled true: enabled

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Parameter	Mandatory/ Conditional	Type	Description
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
DEDUPSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by deduplication.
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by compression.
TOTALSAVEDCAPACITY	Mandatory	string(uint64)	Total space saved.
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRESHOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. **Note:**If there is no valid value, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Note:**If there is no valid value, -1 is returned.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication.
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression.
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio.
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported
WORKLOADTYPENAME	Mandatory	string	Application type name.
ISCLONE	Mandatory	string(bool)	Whether a LUN is a clone LUN. **The value is described as follows:** false: no true: yes
SPLITSTARTTIME	Mandatory	string(uint64)	Start time of clone splitting. **Note:**If the value is invalid, -1 is returned.
SPLITENDTIME	Mandatory	string(uint64)	Estimated end time of clone splitting. **Note:**If the value is invalid, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSPEED	Mandatory	string(enum)	Clone splitting speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest
SPLITSTATUS	Mandatory	string(enum)	Clone splitting status. **The value is described as follows:** 0: not split 1: splitting
cloneSourceId	Conditional	string(uint32)	Clone source object ID. **The value is described as follows:** 0 to 65535.
CREATECLONETIME	Mandatory	string(uint64)	Time when a clone is created.
CLONESOURCENAME	Mandatory	string	Name of the clone source object.
CLONESOURCETYPE	Mandatory	string(enum)	Type of the parent object to be cloned. **The value is described as follows:** 1: LUN 2: snapshot
SPLITRATE	Mandatory	uint32	Clone splitting rate. **The value is described as follows:** 0 to 100
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: false 1: true
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Parameter	Mandatory/ Conditional	Type	Description
DISGUISEREMOTEAR-RAYID	Mandatory	string(uint32)	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over.
grainSize	Conditional	string(uint32)	Thin LUN allocation unit. **The value is described as follows:** The value can be 4KB, 8 KB, 16KB, 32 KB, or 64KB. **Unit:**Sectors
SNAPSHOTIDS	Mandatory	array	Snapshot IDs.

Example

- Creating a LUN clone.

```
Request: POST /deviceManager/rest/210235843710E7000007/lun
{
   "CLONESOURCEID": "2",
   "ISCLONE": true,
   "NAME": "lun1_Clone_1710110628431",
   "DESCRIPTION": "",
   "SPLITSPEED": "2",
   "WORKLOADTYPEID": "3",
   "ID": "6"
}

Response: {
   "data": {
      "ALLOCCAPACITY": "0",
      "ALLOCTYPE": "1",
      "CAPACITY": "2097152",
      "CLONESOURCEID": "2",
      "CLONESOURCENAME": "lun1",
      "CLONESOURCETYPE": "1",
      "COMPRESSION": "0",
      "COMPRESSIONSAVEDCAPACITY": "0",
      "COMPRESSIONSAVEDRATIO": "0",
      "CREATECLONETIME": "1507732128",
      "DEDUPSAVEDCAPACITY": "0",
      "DEDUPSAVEDRATIO": "0",
      "DESCRIPTION": "",
      "DISGUISEREMOTEARRAYID": "0",
      "DRS_ENABLE": "false",
      "ENABLECOMPRESSION": "true",
      "ENABLEISCSITHINLUNTHRESHOLD": "false",
      "ENABLESMARTDEDUP": "1",
      "EXPOSEDTOINITIATOR": "false",
      "EXTENDIFSWITCH": "false",
      "grainSize": "8192",
      "HEALTHSTATUS": "1",
```

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```
        "ID": "6",
        "IOCLASSID": "",
        "ISADD2LUNGROUP": "false",
        "ISCHECKZEROPAGE": "false",
        "ISCLONE": "true",
        "ISCSITHINLUNTHRESHOLD": "90",
        "MIRRORPOLICY": "1",
        "MIRRORTYPE": "0",
        "NAME": "lun1_Clone_1710110628431",
        "OWNINGCONTROLLER": "0B",
        "PARENTID": "0",
        "PARENTNAME": "sp",
        "PREFETCHPOLICY": "0",
        "PREFETCHVALUE": "0",
        "REPLICATION_CAPACITY": "0",
        "RUNNINGSTATUS": "27",
        "RUNNINGWRITEPOLICY": "1",
        "SECTORSIZE": "512",
        "SNAPSHOTIDS": [

        ],
        "SPLITENDTIME": "-1",
        "SPLITRATE": "-1",
        "SPLITSPEED": "2",
        "SPLITSTARTTIME": "-1",
        "SPLITSTATUS": "0",
        "SUBTYPE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "0",
        "WORKLOADTYPENAME": "oracle_OLTP",
        "WRITEPOLICY": "1",
        "isShowDedupAndCompression": "false",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.1.3 Interface for Creating LUNs in Batches

Function

This interface is used to create LUNs in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	LUN ID. **The value is described as follows:** -
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -
parentName	Optional	string	Name of the owning storage pool. **The value is described as follows:** -
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255
SUBTYPE	Optional	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN **Default:**0: common LUN

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Parameter	Mandatory/Optional/Conditional	Type	Description
ALLOCTYPE	Optional	enum	Space allocation mode. **The value is described as follows:** 1: thin LUN **Default:**1: thin LUN
CAPACITY	Mandatory	uint64	Configured capacity. **The value is described as follows:** - **Unit:**Sectors **Note:**For traditional LUNs, this parameter is mandatory. For eDevLUNs, this parameter is not required.
WRITEPOLICY	Optional	enum	Write policy. **The value is described as follows:** 1: write-back 2: write-through **Note:**When a local LUN is created, the default value is write-back. When an eDevLUN is created, the default value is write-through.
PREFETCHPOLICY	Optional	enum	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Default:**3: intelligent prefetch

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Parameter	Mandatory/Optional/Conditional	Type	Description
PREFETCHVALUE	Conditional	uint32	Prefetch policy value. **The value is described as follows:** The constant prefetch value ranges from 0 to 2048 sectors. The variable prefetch value ranges from 0 to 1024. **Note:**This field has been discarded.
OWNINGCONTROLLER	Optional	string	Owning controller. **The value is described as follows:** - **Note:**This field has been discarded.
dataTransferPolicy	Mandatory	enum	Data transmission policy. **The value is described as follows:** -
initialDistributePolicy	Mandatory	enum	Initial distribution policy. **The value is described as follows:** -
IOPriority	Optional	enum	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
extendDifSwitch	Optional	bool	Whether to support the external DIF feature. **The value is described as follows:** false: not supported true: supported

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Parameter	Mandatory/Optional/Conditional	Type	Description
REMOTELUNID	Conditional	string	ID of the external LUN of the eDevLUN. **The value is described as follows:** - **Note:**If the value of USAGETYPE is 1 and the value of SUBTYPE is 0, this parameter must be delivered.
USAGETYPE	Conditional	enum	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN **Default:**0: traditional LUN **Note:**This parameter is mandatory when the following is created: eDevLUN, VVol LUN, PE LUN, global image repository LUN, local image repository LUN, container configuration LUN, or in-band LUN.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLECOMPRESSION	Optional	bool	Whether to enable compression. **The value is described as follows:** false: off true: on **Default:**true: The function is enabled. **Note:**eDevLUNs do not support this parameter.
ENABLESMARTDEDUP	Optional	bool	Enables or disables data deduplication. **The value is described as follows:** false: off true: on **Default:**true: The function is enabled. **Note:**eDevLUNs do not support this parameter.
ISCSITHINLUNTHRES-HOLD	Optional	uint32	Capacity alarm threshold when thin LUNs are mounted to Windows Server 2012. **The value is described as follows:** The value ranges from 50 to 99. **Default:**90
ENABLEISCSITHIN-LUNTHRESHOLD	Optional	bool	Whether to enable the threshold alarm function for iSCSI thin LUNs in Windows 2012. **The value is described as follows:** false: off true: on **Default:**false: disabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
WORKLOADTYPEID	Optional	string	Application type ID. **The value is described as follows:** The value ranges from 0 to 2048.
serviceEnabled	Optional	bool	Whether to enable the service. **The value is described as follows:** false: off true: on **Default:**true **Note:**This parameter is valid only when the following is created: global image repository LUN, local image repository LUN, or container configuration LUN.
devController	Optional	string	Owning controller of a block device. **The value is described as follows:** The value is all or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7. **Length:**3 **Note:**When you create a local image repository LUN or container configuration LUN, the value can be XA, XB, XC, or XD, where X is an integer ranging from 0 to 7. This parameter is valid only when the following is created: global image repository LUN, local image repository LUN, or container configuration LUN.

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Parameter	Mandatory/Optional/Conditional	Type	Description
userView	Optional	uint32	User view. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
PARENTTYPE	Optional	enum	Parent object type. **The value is described as follows:** 216: storage pool **Default:**216: storage pool

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	LUN ID. **The value is described as follows:** -
NAME	Mandatory	string	LUN name **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
parentID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
parentName	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
healthStatus	Mandatory	enum	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
runningStatus	Mandatory	enum	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
description	Conditional	string	Description. **The value is described as follows:** -
subType	Mandatory	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN
allocType	Mandatory	enum	Space allocation mode. **The value is described as follows:** 1: thin LUN

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Parameter	Mandatory/ Conditional	Type	Description
capacity	Mandatory	uint64	Configured capacity. **The value is described as follows:** - **Unit:**Sectors
allocCapacity	Mandatory	uint64	Used capacity. **The value is described as follows:** - **Unit:**Sectors
sectorSize	Mandatory	uint32	Block size. **The value is described as follows:** - **Unit:**Bytes
exposedToInitiator	Mandatory	bool	Whether mapping is required. **The value is described as follows:** false: not mapped. true: mapped.
wwn	Mandatory	string	WWN. **The value is described as follows:** -
WritePolicy	Mandatory	enum	Write policy. **The value is described as follows:** 1: write-back 2: write-through
RunningWritePolicy	Mandatory	enum	Running status of a write policy. **The value is described as follows:** 0: initializing 1: write back 2: write through

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Parameter	Mandatory/ Conditional	Type	Description
PrefetchValue	Mandatory	uint32	Data protection capacity, which is consumed for data protection. Currently, it refers to the capacity used for snapshot COW. When constant prefetch is used, the prefetch value is the number of sectors and the sector size is 512 bytes. **Unit:**Sectors
isAdd2LunGroup	Mandatory	bool	Whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
isAdd2LunGroup	Mandatory	bool	Whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
remoteLunId	Conditional	string	ID of the external LUN of the eDevLUN. **The value is described as follows:** - **Note:**If it is not an eDevLUN, "--" is returned.

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Parameter	Mandatory/ Conditional	Type	Description
usageType	Mandatory	enum	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN
enableDedupCheck	Mandatory	bool	Whether to use the check flag when the weak hash algorithm is used for deduplication. **The value is described as follows:** false: disabled. true: enabled.
remoteLunWwn	Mandatory	string	WWN of the external LUN. **The value is described as follows:** - **Note:**If it is not an eDevLUN, "--" is returned.
dedupSavedCapacity	Mandatory	uint64	Space saved by deduplication. **Unit:**Sectors

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Parameter	Mandatory/ Conditional	Type	Description
enableSmartDedup	Mandatory	bool	Whether data deduplication is enabled. **The value is described as follows:** false: disabled. true: enabled.
totalSavedCapacity	Mandatory	uint64	Total space saved. **The value is described as follows:** -
compressionSavedCapacity	Mandatory	uint64	Space saved by compression. **The value is described as follows:** - **Unit:**Sectors
compression	Mandatory	enum	Compression algorithm. **The value is described as follows:** 0: fast compression 1: deep compression
disguiseStatus	Conditional	enum	Whether to enable LUN masquerading. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs)

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Parameter	Mandatory/ Conditional	Type	Description
disguiseRemoteArrayId	Conditional	string	ID of a remote storage array that is masqueraded as a specified one. Used for capacity expansion when heterogeneous storage arrays are taken over from old storage arrays. **The value is described as follows:** - **Note:**If no masquerading is performed, "--" is returned.
workloadTypeId	Mandatory	string	Application type ID. **The value is described as follows:** - **Note:**"4294967295" is an invalid value.
workloadTypeName	Mandatory	string	Application type name. **The value is described as follows:** -
IOClassID	Mandatory	string	I/O class. **The value is described as follows:** - **Note:**If the ID exists, the ID is returned. If the ID does not exist, an empty string is returned.
IOPriority	Mandatory	enum	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high

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Parameter	Mandatory/ Conditional	Type	Description
isClone	Conditional	bool	Whether a LUN is a clone LUN. The value true indicates yes and the value false indicates no. **The value is described as follows:** false: no true: yes
grainSize	Mandatory	uint32	Thin LUN allocation unit. **The value is described as follows:** The value can be 4KB, 8 KB, 16KB, 32 KB, or 64KB. **Unit:**Sectors
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: no 1: yes
NGUID	Mandatory	string	Globally unique identifier of a namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
devController	Mandatory	string	Owning controller of a block device. **The value is described as follows:** The value is all or --, or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7.

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Parameter	Mandatory/ Conditional	Type	Description
blockDeviceName	Mandatory	string	Block device name. **The value is described as follows:** The value contains digits, letters, and underscores (_).
serviceEnabled	Mandatory	bool	Whether to enable or disable the block device. **The value is described as follows:** 0: no 1: yes
SmartCachePartitionID	Mandatory	string	ID of a SmartCache partition. **The value is described as follows:** 1 to 16.
RemoteReplicationIDs	Mandatory	array	IDs of remote replication tasks. **The value is described as follows:** - **Unit:**string
takeOverLunWwn	Mandatory	string	Takeover LUN WWN. **The value is described as follows:** -
snapshotScheduleId	Mandatory	uint32	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**The value "0" indicates that the LUN is not added to a timing snapshot schedule.

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Parameter	Mandatory/ Conditional	Type	Description
CAPABILITY	Mandatory	enum	VASA: storage capability level. **The value is described as follows:** 0: NoProtected 1: Capacity 2: Performance 3: Extreme Performance 4: Multi-Tiers
DRS_Enable	Mandatory	bool	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: no true: yes
capacityAlarmLevel	Mandatory	enum	VASA: thin LUN capacity alarm severity. **The value is described as follows:** 2: normal 3: warning 6: critical **Note:**This parameter is returned only for thin LUNs.
dedupSavedRatio	Mandatory	uint32	Space saving ratio of deduplication. **The value is described as follows:** - **Unit:**%
compressionSavedRatio	Mandatory	uint32	Capacity saving ratio of compression. **The value is described as follows:** - **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
LUNMigrationOrigin	Mandatory	enum	Whether the LUN serves as the source or target LUN of LUN migration. **The value is described as follows:** 0: source LUN 1: target LUN **Note:**If the value is invalid, -1 is returned.
totalSavedRatio	Mandatory	uint32	Total space saving ratio. **The value is described as follows:** - **Unit:**%
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating LUNs in batches.

```
Request: POST /deviceManager/rest/2102353QQR10L4000001/lun/batch
[{
    "ALLOCTYPE": 1,
    "CAPACITY": 209715200,
    "DESCRIPTION": "",
    "NAME": "LUN1100000",
    "PARENTID": "0",
    "PARENTTYPE": 216,
    "WORKLOADTYPEID": "0",
    "WRITEPOLICY": 1
},
{
    "ALLOCTYPE": 1,
    "CAPACITY": 209715200,
    "DESCRIPTION": "",
    "NAME": "LUN1100001",
    "PARENTID": "0",
    "PARENTTYPE": 216,
    "WORKLOADTYPEID": "0",
    "WRITEPOLICY": 1
}]

Response:
{
    "data":[
        {
            "ALLOCTYPE": "1",
            "CAPABILITY": "3",
            "CAPACITY": "209715200",
            "CAPACITYALARMLEVEL": "2",
```

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```
        "COMPRESSION": "0",
        "COMPRESSIONSAVEDCAPACITY": "0",
        "COMPRESSIONSAVEDRATIO": "0",
        "DEDUPSAVEDCAPACITY": "0",
        "DEDUPSAVEDRATIO": "0",
        "DESCRIPTION": "",
        "DISGUISEREMOTEARRAYID": "--",
        "DISGUISESTATUS": "0",
        "DRS_ENABLE": false,
        "ENABLECOMPRESSION": true,
        "ENABLEDEDUPCHECK": false,
        "ENABLEISCSITHINLUNTHRESHOLD": false,
        "ENABLESMARTDEDUP": true,
        "ID": "109",
        "IOClassId": "",
        "IOPRIORITY": "1",
        "ISCSITHINLUNTHRESHOLD": "90",
        "LUNMigrationOrigin": "-1",
        "MIRRORPOLICY": "1",
        "MIRRORTYPE": "0",
        "NAME": "LUN1100000",
        "NGUid": "710023040803960f001112620000006d",
        "OWNINGCONTROLLER": "--",
        "PARENTID": "0",
        "PARENTNAME": "s0",
        "PREFETCHPOLICY": "0",
        "PREFETCHVALUE": "0",
        "REMOTELUNID": "--",
        "REMOTEREPLICATIONIDS": "[]",
        "RUNNINGWRITEPOLICY": "1",
        "SMARTCACHEPARTITIONID": "--",
        "SNAPSHOTSCHEDULEID": "--",
        "SUBTYPE": "0",
        "SnapshotIDs": "[]",
        "THINCAPACITYUSAGE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "0",
        "WORKINGCONTROLLER": "--",
        "WORKLOADTYPEID": "0",
        "WRITEPOLICY": "1",
        "allocCapacity": "0",
        "devController": "--",
        "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
        },
        "exposedToInitiator": "0",
        "extendDifSwitch": "0",
        "grain_size": "32",
        "healthStatus": "1",
        "isAdd2LunGroup": "0",
        "isCheckZeroPage": "1",
        "isClone": "0",
        "isShowDedupAndCompression": "0",
        "remoteLunWwn": "--",
        "replicationCapacity": "0",
        "runningStatus": "27",
        "sectorSize": "512",
        "serviceEnabled": false,
        "takeOverLunWwn": "--",
        "workloadTypeName": "Default",
        "wwn": "6001112100230408039 60f620000006d",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    {
```


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```
        "ALLOCTYPE": "1",
        "CAPABILITY": "3",
        "CAPACITY": "209715200",
        "CAPACITYALARMLEVEL": "2",
        "COMPRESSION": "0",
        "COMPRESSIONSAVEDCAPACITY": "0",
        "COMPRESSIONSAVEDRATIO": "0",
        "DEDUPSAVEDCAPACITY": "0",
        "DEDUPSAVEDRATIO": "0",
        "DESCRIPTION": "",
        "DISGUISEREMOTEARRAYID": "--",
        "DISGUISESTATUS": "0",
        "DRS_ENABLE": false,
        "ENABLECOMPRESSION": true,
        "ENABLEDEDUPCHECK": false,
        "ENABLEISCSITHINLUNTHRESHOLD": false,
        "ENABLESMARTDEDUP": true,
        "ID": "110",
        "IOClassId": "",
        "IOPRIORITY": "1",
        "ISCSITHINLUNTHRESHOLD": "90",
        "LUNMigrationOrigin": "-1",
        "MIRRORPOLICY": "1",
        "MIRRORTYPE": "0",
        "NAME": "LUN1100001",
        "NGUid": "710023040803960f001112620000006e",
        "OWNINGCONTROLLER": "--",
        "PARENTID": "0",
        "PARENTNAME": "s0",
        "PREFETCHPOLICY": "0",
        "PREFETCHVALUE": "0",
        "REMOTELUNID": "--",
        "REMOTEREPLICATIONIDS": "[]",
        "RUNNINGWRITEPOLICY": "1",
        "SMARTCACHEPARTITIONID": "--",
        "SNAPSHOTSCHEDULEID": "--",
        "SUBTYPE": "0",
        "SnapshotIDs": "[]",
        "THINCAPACITYUSAGE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "0",
        "WORKINGCONTROLLER": "--",
        "WORKLOADTYPEID": "0",
        "WRITEPOLICY": "1",
        "allocCapacity": "0",
        "devController": "--",
        "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
        },
        "exposedToInitiator": "0",
        "extendDifSwitch": "0",
        "grain_size": "32",
        "healthStatus": "1",
        "isAdd2LunGroup": "0",
        "isCheckZeroPage": "1",
        "isClone": "0",
        "isShowDedupAndCompression": "0",
        "remoteLunWwn": "--",
        "replicationCapacity": "0",
        "runningStatus": "27",
        "sectorSize": "512",
        "serviceEnabled": false,
        "takeOverLunWwn": "--",
        "workloadTypeName": "Default",
        "wwn": "6001112100230408039 60f620000006e",
```


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```
            "vstoreId":"0",
            "vstoreName":"System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.1.4 (Not Recommended) Interface for Adding a LUN to a LUN Consistency Group

Function

This interface is used to add a LUN to a LUN consistency group (you are advised to use Interface for Adding a LUN to a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
ASSOCIATEOBJID	Mandatory	string	ID of a LUN to be added to a LUN consistency group. **The value is described as follows:** 0 to 16383.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object LUN. **The value is described as follows:** 11: LUN
vstoreId	Optional	string	vStore ID.

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Result

N/A

Example

- Adding a LUN to a LUN consistency group.

```
Request: POST /deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP/
CREATE_ASSOCIATE
{
   "ID": "1",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "1"
}
Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.2.1.5 (Not Recommended) Interface for Creating a LUN Clone

Function

This interface is used to create a LUN clone (you are advised to use Interface for Creating a Clone Pair instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISCLONE	Mandatory	bool	Is clone or not. **The value is described as follows:** true: yes

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
WORKLOADTYPEID	Optional	string	Application type ID.
CLONESOURCEID	Mandatory	uint32	Clone source object ID. **The value is described as follows:** The value ranges from 0 to 65535.
SPLITSPEED	Optional	enum	Clone split speed. **The value is described as follows:** 1:low 2:middle 3:high 4:highest **Default:**2: middle
ID	Optional	string	Clone ID. **The value is described as follows:** The value ranges from 0 to 65535.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 11: LUN

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool.
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty 15: write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: online 28: offline 53: initializing 106: deleting
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN

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Parameter	Mandatory/ Conditional	Type	Description
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: Thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity.
SECTORSIZE	Mandatory	string(uint64)	Block size.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running write policy. **The value is described as follows:** 0: initializing 1: write back 2: write through
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller.
IOClassID	Mandatory	string	I/O class.
IOPriority	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1:low 2:middle 3:high
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness(VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
ISCHECKZEROPAGE	Mandatory	string(bool)	Tag of all-zero page check. **The value is described as follows:** false: not checked true: checked
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data protection capacity, which refers to the capacity used for snapshot copy-on-write (COW).
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) **Note:**.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled. **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror Type. **The value is described as follows:** 0:common LUN 1:MirrorLUN 2:Mirror Copy LUN
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
DEDUPSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by deduplication.
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by compression.
TOTALSAVEDCAPACITY	Mandatory	string(uint64)	Total space saved.
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled

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Parameter	Mandatory/ Conditional	Type	Description
ISCSITHINLUNTHRES-HOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. **Note:**If there is no valid value, -1 is returned.
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Note:**If there is no valid value, -1 is returned.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication.
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression.
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio.
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported
WORKLOADTYPENAM E	Mandatory	string	Application type name.
ISCLONE	Mandatory	string(bool)	Is clone or not. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
splitStartTime	Mandatory	string(uint64)	clone split start time. **Note:**If there is no valid value, -1 is returned.
splitEndTime	Mandatory	string(uint64)	Expected clone split end time. **Note:**If there is no valid value, -1 is returned.
SPLITSPEED	Mandatory	string(enum)	Clone split speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest
splitStatus	Mandatory	string(enum)	Clone split status. **The value is described as follows:** 0: not split 1: splitting
cloneSourceId	Conditional	string(uint32)	Clone source object ID. **The value is described as follows:** 0 to 65535.
createCloneTime	Mandatory	string(uint64)	Time when clone is created.
cloneSourceName	Mandatory	string	Clone source object name.
cloneSourceType	Mandatory	string(enum)	Clone source type. **The value is described as follows:** 1: LUN 2: snapshot
SPLITRATE	Mandatory	uint32	Clone split rate. **The value is described as follows:** 0 to 100.

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Parameter	Mandatory/ Conditional	Type	Description
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0:false;1:true

Example

- Creating a LUN clone.

```
Request: POST/deviceManager/rest/210235843710E7000007/lun
{
   "CLONESOURCEID": "2",
   "ISCLONE": true,
   "NAME": "lun1_Clone_1710110628431",
   "DESCRIPTION": "",
   "SPLITSPEED": "2",
   "WORKLOADTYPEID": "3",
   "ID": "6"
}
Response:
{
   "data":
   {
      "ALLOCCAPACITY": "0",
      "ALLOCTYPE": "1",
      "CAPACITY": "2097152",
      "CLONESOURCEID": "2",
      "CLONESOURCENAME": "lun1",
      "CLONESOURCETYPE": "1",
      "COMPRESSION": "0",
      "COMPRESSIONSAVEDCAPACITY": "0",
      "COMPRESSIONSAVEDRATIO": "0",
      "CREATECLONETIME": "1507732128",
      "DEDUPSAVEDCAPACITY": "0",
      "DEDUPSAVEDRATIO": "0",
      "DESCRIPTION": "",
      "DRS_ENABLE": "false",
      "ENABLECOMPRESSION":"true"
      "ENABLEDEDUP":"true"
      "ENABLEISCSITHINLUNTHRESHOLD": "false",
      "EXPOSEDTOINITIATOR": "false",
      "EXTENDIFSWITCH": "false",
      "HEALTHSTATUS": "1",
      "ID": "6",
      "IOCLASSID": "",
      "IOPRIORITY": "1",
      "ISADD2LUNGROUP": "false",
      "ISCHECKZEROPAGE": "false",
      "ISCLONE": "true",
      "ISCSITHINLUNTHRESHOLD": "90",
      "MIRRORPOLICY": "1",
      "MIRRORTYPE": "0",
      "NAME": "lun1_Clone_1710110628431",
      "OWNINGCONTROLLER": "0B",
      "PARENTID": "0",
      "PARENTNAME": "sp",
      "PREFETCHPOLICY": "0",
      "PREFETCHVALUE": "0",
      "REPLICATION_CAPACITY": "0",
```

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```
        "RUNNINGSTATUS": "27",
        "RUNNINGWRITEPOLICY": "1",
        "SECTORSIZE": "512",
        "SPLITENDTIME": "-1",
        "SPLITRATE": "-1",
        "SPLITSPEED": "2",
        "SPLITSTARTTIME": "-1",
        "SPLITSTATUS": "0",
        "SUBTYPE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "0",
        "WORKLOADTYPENAME": "oracle_OLTP",
        "WRITEPOLICY": "1",
        "isShowDedupAndCompression": "false"
    },
    "error":
    {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.1.6 (Not Recommended) Interface for Creating a LUN Consistency Group

Function

This interface is used to create a LUN consistency group (you are advised to use Interface for Creating a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
DESCRIPTION	Optional	string	Description. **Length:**1~255

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
SNAPSCHEDULEID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** 1 to 512. **Note:**If the value is "0", it indicates that the LUN consistency group is not added to the HyperCDP schedule.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 1: Normal 53: Initializing 106: Deleting
REMOVESNAP	Mandatory	string	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes
CGTYPE	Mandatory	string	Type of a consistency group. **The value is described as follows:** 0: LUN consistency group 1: HyperCopy consistency group
HYPERCDPSCHEDULE-DISABLE	Mandatory	string	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: not disable 1: disable

Example

- Creating a LUN consistency group.

```
Request: POST/deviceManager/rest/210235843910E6000009/LUN_CONSISTENCY_GROUP
{
   "NAME": "lunCg1",
   "DESCRIPTION": ""
}

Response:
{
   "data": {
      "CGTYPE":"0",
      "DESCRIPTION": "",
      "HYPERCDPSCHEDULEDISABLE":"0",
```

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```
        "ID": "1",
        "NAME": "lunCg1",
        "REMOVESNAP":"0",
        "RUNNINGSTATUS":"1",
        "SNAPSCHEDULEID": "0",
        "TYPE": 57645
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.2 Delete

2.7.2.2.1 Interface for Deleting a LUN

Function

This interface is used to delete a LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN ID.
SUBTYPE	Optional	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN

Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
isDelayDelete	Optional	bool	Whether to remove a LUN to the recycle bin. **The value is described as follows:** false: no true: yes The default value is the recycle bin policy switch.
vstoreId	Optional	string	vStore ID.

Result

N/A

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Usage Guidelines

1:This operation will delete the LUN information from the system and the data in the LUN will be lost.

2:Before performing this operation, ensure that the selected LUN is correct and services on the LUN have been stopped.

3:A LUN cannot be deleted in the following situations:

3.1:The LUN is added to the mapping view.

3.2:The LUN is used for remote replication.

3.3:The LUN is applied to a snapshot.

4:If immediate deletion is not specified, the system determines whether to move the LUN to the recycle bin or forcibly delete it based on the recycle bin policy.

Example

- Move the LUN to the recycle bin.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/lun/0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting a LUN.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/lun/0?isDelayDelete=false
Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.2.2.2 (Not Recommended) Interface for Deleting a LUN Consistency Group

Function

This interface is used to delete a LUN consistency group (you are advised to use Interface for Deleting a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.

Result

N/A

Example

- Deleting a LUN consistency group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/LUN_CONSISTENCY_GROUP/1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.2.2.3 (Not Recommended) Interface for Removing a LUN from a LUN Consistency Group

Function

This interface is used to remove a LUN from a LUN consistency group (you are advised to use Interface for Removing a LUN from a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/REMOVE_ASSOCIATE

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
ASSOCIATEOBJID	Mandatory	string	ID of a LUN to be removed from a LUN consistency group. **The value is described as follows:** 0 to 65535.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object LUN. **The value is described as follows:** 11: LUN
REMOVESNAP	Optional	enum	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes **Default:**0: no
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Removing a LUN from a LUN consistency group.

```
Request: DELETE /deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP/
REMOVE_ASSOCIATE
{
    "ID": "1",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "2"
}
Response: {
    "data": {},
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.2.3 Modify

2.7.2.3.1 Interface for Modifying a LUN Clone

Function

This interface is used to modify the split status and speed of a LUN clone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lunclone_split_switch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone ID. **The value is described as follows:** The value ranges from 0 to 16383.
ISCLONE	Mandatory	bool	Is clone or not. **The value is described as follows:** true: yes
SPLITSPEED	Optional	enum	Clone splitting speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**medium

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPLITACTION	Optional	enum	Clone splitting action. **The value is described as follows:** 1: Start splitting. 2: Stop splitting.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Clone ID.
NAME	Mandatory	string	Clone name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
SPLITACTION	Conditional	enum	Clone splitting action. **The value is described as follows:** 1: Clone splitting starts. 2: Clone splitting stops.
ISCLONE	Mandatory	string(bool)	Whether a LUN is a clone LUN. **The value is described as follows:** false: no true: yes
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 11: LUN

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Parameter	Mandatory/ Conditional	Type	Description
IMPORTANTPSW	Conditional	string	Authentication password of an important transaction.

Example

- Changing the clone splitting speed.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lunclone_split_switch
{
   "SPLITSPEED": 3,
   "ID": "6",
   "ISCLONE": true
}
Response:
{
   "data": {
      "ID":"6",
      "IMPORTANTPSW":"714598854192",
      "ISCLONE":"true",
      "NAME":"clone_lun5",
      "TYPE":11,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Splitting the LUN clone.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lunclone_split_switch
{
   "ID": "6",
   "SPLITACTION": 1,
   "ISCLONE": true,
   "SPLITSPEED": 3
}
Response: {
   "data": {
      "ID":"6",
      "IMPORTANTPSW":"718893821673",
      "ISCLONE":"true",
      "NAME":"clone_lun5",
      "SPLITACTION":"1",
      "TYPE":11,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Stopping splitting the LUN clone.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lunclone_split_switch
{
   "ID": "6",
   "SPLITACTION": 2,
   "ISCLONE": true
```

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```
}
Response: {
    "data": {
        "ID":"6",
        "IMPORTANTPSW":"757548528314",
        "ISCLONE":"true",
        "NAME":"clone_lun5",
        "SPLITACTION":"2",
        "TYPE":11,
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.3.2 Interface for Modifying LUN Information

Function

This interface is used to modify LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN ID. **The value is described as follows:** -
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
SUBTYPE	Optional	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 3: inner LUN
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: asynchronous 1: synchronous **Default:**1: synchronous **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PREFETCHPOLICY	Optional	enum	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Conditional	uint32	Prefetch policy value. **The value is described as follows:** The value of constant prefetch ranges from 0 to 2048 sectors. The value of variable prefetch ranges from 0 to 1024 times. **Note:**The field is not used.
OWNINGCONTROLLER	Optional	string	Owning controller. **The value is described as follows:** -
EXTENDIFSWITCH	Optional	bool	Indicates whether the external data integrity field (DIF) feature is supported. **The value is described as follows:** false: not supported true: supported
ISCSITHINLUNTHRES-HOLD	Optional	uint32	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** [50,99] **Note:**The field is not used.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Optional	bool	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Note:**The field is not used.
WRITEPOLICY	Optional	enum	Write policy. **The value is described as follows:** 1: write back 2: write through **Note:**This parameter does not support the value of 2 (write through) when the value of the SUBTYPE parameter is 0 (common LUN).
DISGUISESTATUS	Optional	enum	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs)

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Parameter	Mandatory/Optional/Conditional	Type	Description
serviceEnabled	Optional	bool	Whether to enable or disable the block device. **The value is described as follows:** false: off true: on
devController	Optional	string	Owning controller of a block device. **The value is described as follows:** The value is in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7. **Length:**3
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Modify a LUN.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lun/0
{
    "DESCRIPTION": "123456"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying the owning controller of the LUN, and enabling or disabling the block device.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lun/0
{
    "DEVCONTROLER": "0A"
    "SERVICEENABLED": "true"
}

Response:
{
    "data": {},
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.7.2.3.3 (Not Recommended) Interface for Modifying a LUN Consistency Group

Function

This interface is used to modify a LUN consistency group (you are advised to use Interface for Modifying a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
NAME	Optional	string	Name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**1~255

Result

N/A

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Example

- Modifying a LUN consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/LUN_CONSISTENCY_GROUP/1
{
   "DESCRIPTION": "first lunCg",
   "NAME": "lunCg123"
}

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.2.4 Query

2.7.2.4.1 Interface for Batch Querying LUN Consistency Groups

Function

This interface is used to batch query basic information about LUN consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filtering criteria. **The value is described as follows:** Query by specifying NAME and ID is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
RSSTYPE	Optional	enum	Type of LUN consistency groups that support value-added features. **The value is described as follows:** 0: LUN consistency group that has HyperCDP consistency groups 1: LUN consistency group that can be backed up or restored

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0~8191.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Description.
SNAPSCHEDULEID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** 1~512. **Note:**If the value is "0", it indicates that the LUN consistency group is not added to the HyperCDP schedule.
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 1: Normal 53: Initializing 106: Deleting
REMOVESNAP	Mandatory	string	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes
CGTYPE	Mandatory	string	Type of a consistency group. **The value is described as follows:** 0: LUN consistency group 1: HyperCopy consistency group
HYPERCDPSCHEDULE-DISABLE	Mandatory	string	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: not disable 1: disable
WWN	Mandatory	string	WWN.

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Example

- Batch querying LUN consistency groups.

```
Request: GET/deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP?
range=[0-100]
Response: {
   "data": [
      {
         "CGTYPE": "0",
         "DESCRIPTION": "",
         "HYPERCDPSCHEDULEDISABLE": "0",
         "ID": "1",
         "NAME": "lunCg1",
         "REMOVESNAP": "0",
         "RUNNINGSTATUS": "1",
         "SNAPSCHEDULEID": "0",
         "TYPE": 57645,
         "WWN": "6049fca100037d290003599b00000001"
      },
      {
         "CGTYPE": "0",
         "DESCRIPTION": "",
         "HYPERCDPSCHEDULEDISABLE": "0",
         "ID": "2",
         "NAME": "lunCg2",
         "REMOVESNAP": "0",
         "RUNNINGSTATUS": "1",
         "SNAPSCHEDULEID": "0",
         "TYPE": 57645,
         "WWN": "6049fca100037d290003667300000002"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Batch querying the LUN consistency groups that can be backed up or restored.

```
Request: GET /deviceManager/rest/0123456789012345678 9/lun_consistency_group?
RSSTYPE=1&range=[0-100]
Response:
{
   "data": [
      {
         "CGTYPE": "0",
         "DESCRIPTION": "",
         "HYPERCDPSCHEDULEDISABLE": "0",
         "ID": "3",
         "NAME": "LunCG003",
         "REMOVESNAP": "0",
         "RUNNINGSTATUS": "1",
         "SNAPSCHEDULEID": "0",
         "TYPE": 57645,
         "WWN": "6049fca100037d2900078bee00000003"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.7.2.4.2 Interface for Batch Querying LUN Information

Function

This interface is used to batch query basic information about LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: NAME, ID, PARENTID, CAPACITY, ISADD2LUNGROUP, OWNINGCONTROLLER, HEALTHSTATUS, WWN, RUNNINGSTATUS, SUBTYPE, functionType, mapped, USAGETYPE, blockDeviceController, and devController. OWNINGCONTROLLER and WWN must be queried precisely.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

Parameter	Mandatory/Optional/Conditional	Type	Description
RSSTYPE	Optional	enum	Type of the LUN that supports value-added features. **The value is described as follows:** 12: LUN that can function as the primary LUN of a remote replication pair 13: remote LUN that can function as the secondary LUN of remote replication 18: LUN that can function as the source LUN of LUN migration 19: LUN that can function as the target LUN of LUN migration 22: LUN that supports snapshots 25: primary LUN that supports SAN HyperMetro 26: secondary LUN that supports SAN HyperMetro 32: LUN that has snapshots 33: target object that can be used for snapshot rollback 34: clone LUN 35: common LUN 36: LUN that can be added to a HyperCDP schedule 38: LUN that can function as the source object of a HyperCopy pair 39: LUN that can function as the target object of a HyperCopy pair

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Parameter	Mandatory/Optional/Conditional	Type	Description
			40: HyperCopy pair that can be added to a HyperCopy consistency group 41: LUN that can be added to the LUN consistency group (or protection group) 42: LUN that has enabled HyperCDP 43: LUN that supports HyperCDP 46: LUN that can function as the primary LUN of a SAN HyperMetro pair and SAN asynchronous remote replication pair 47: LUN that can function as the secondary LUN of a SAN HyperMetro pair and the primary LUN of a SAN asynchronous remote replication pair 48: LUN that can function as the primary LUN of a SAN synchronous remote replication pair and SAN asynchronous remote replication pair 49: LUN that can function as the secondary LUN of a SAN synchronous remote replication pair and the primary LUN of a SAN asynchronous remote replication pair 50: LUN that can function as the secondary LUN of a SAN asynchronous remote replication pair

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Parameter	Mandatory/Optional/Conditional	Type	Description
			and standby SAN asynchronous remote replication pair.
RSSASSOCIATEOBJID		string	ID of a value-added associated object (RSSTYPE specifies the object ID, for example, the ID of the primary LUN in a remote replication pair). **The value is described as follows:** - **Note:**This parameter must be delivered when RSSTYPE is set to 39. The value is the source object ID of a single HyperCopy pair to be created.
excludeIds	Optional	string	Filtering ID list.
excludedProtection-GroupList	Optional	string	Protection group ID list for excluding LUNs. **The value is described as follows:** The value ranges from 1 to 65535. **Length:**2048 **Note:** 1. This parameter is valid only when RSSTYPE is set to 39. 2. excludedProtection-GroupList and excludedLunGroupList are mutually exclusive.

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludedLunGroupList	Optional	string	LUN group ID list for excluding LUNs. **The value is described as follows:** 1-65535 **Length:**2048 **Note:** 1. This parameter is valid only when RSSTYPE is set to 39. 2. excludedProtectionGroupList and excludedLunGroupList are mutually exclusive.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	LUN ID. **The value is described as follows:** -
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** -
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** -
SECTORSIZE	Mandatory	string(uint64)	Block size. **The value is described as follows:** -
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WWN	Mandatory	string	WWN. **The value is described as follows:** -
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running a write policy. **The value is described as follows:** 1: write back 2: write through

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Parameter	Mandatory/ Conditional	Type	Description
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **The value is described as follows:** - **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller. **The value is described as follows:** - **Note:**The field is not used.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio.
SMARTCACHEPARTITIONID	Mandatory	string	ID of the SmartCache partition. **The value is described as follows:** The value is from 1 to 16.
WORKINGCONTROLLER	Mandatory	string	Working controller. **The value is described as follows:** - **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
THINCAPACITYUSAGE	Conditional	string(uint32)	Ratio of thin LUN capacity occupied by data to the capacity available to the thin LUN. **The value is described as follows:** - **Note:**This field is returned for thin LUNs only.
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data replication capacity, expressed in sectors. Capacity consumed by data replication refers to the capacity used for snapshot copy-on-write (COW). **The value is described as follows:** -
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
REMOTELUNID	Mandatory	string	ID of the external LUN that maps to the eDevLUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.

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Parameter	Mandatory/ Conditional	Type	Description
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN
remoteLunWwn	Mandatory	string	WWN of the external LUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRES-HOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. The default value is 90.
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on

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Parameter	Mandatory/ Conditional	Type	Description
DISGUISESTATUS	Conditional	string(enum)	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs) **Note:**This field is not returned if the LUN is not masqueraded.
DISGUISEREMOTEAR-RAYID	Conditional	string	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over. **The value is described as follows:** - **Note:**This field is not returned if the LUN is not masqueraded.
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported

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Parameter	Mandatory/ Conditional	Type	Description
HASRSSOBJECT	Mandatory	string(json)	Status list of associated value-added service objects. **The value is described as follows:** -
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: NoProtected 1: Capacity 2: Performance 3: Extreme Performance 4: Multi-Tiers
CAPACITYALARMLE-VEL	Conditional	string(enum)	VASA: thin LUN capacity alarm severity. **The value is described as follows:** 2: normal 3: warning 6: critical **Note:**This field is returned for thin LUNs only.
WORKLOADTYPEID	Mandatory	string	Application type ID. **The value is described as follows:** - **Note:**"4294967295" indicates an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
WORKLOADTYPENAME	Mandatory	string	Application type name. **The value is described as follows:** -
takeOverLunWwn	Mandatory	string	WWN of the takeover LUN. **The value is described as follows:** -
SNAPSHOTSCHEDULEID	Mandatory	string	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the timing snapshot schedule.
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** - **Note:**If there is an ID, the ID is returned. If there is no ID, an empty string is returned.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** -
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** -
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** -
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Space saved by deduplication. **The value is described as follows:** -
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Space saved by compression. **The value is described as follows:** -
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total space saved. **The value is described as follows:** -
ISCLONE	Mandatory	string(bool)	Whether it is a clone LUN. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
lunCgId	Mandatory	string	LUN consistency group ID. **The value is described as follows:** The value is from 1 to 4096. **Note:**If the value is "0", it indicates that the LUN is not added to the LUN consistency group.
hyperCdpScheduleId	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** The value is from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the HyperCDP schedule.
mapped	Mandatory	string(bool)	Whether the LUN is mapped. **The value is described as follows:** false: no true: yes
HYPERCDPSCHEDULE-DISABLE	Mandatory	string(bool)	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: enables the HyperCDP schedule. 1: disables the HyperCDP schedule.
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring

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Parameter	Mandatory/ Conditional	Type	Description
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: false 1: true
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** The value can be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB.
ISCHECKZEROPAGE	Conditional	string(bool)	Tag of the all-zero page check. **The value is described as follows:** false: not checked true: checked **Note:**This field is returned for thin LUNs only.
functionType	Mandatory	string(uint8_t)	Function type. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.

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Parameter	Mandatory/ Conditional	Type	Description
serviceEnabled	Mandatory	bool	Whether the block device is enabled. **The value is described as follows:** false: off true: on
blockDeviceName	Mandatory	string	Block device name. **The value is described as follows:** The value contains digits, letters, and underscores (_).
devController	Mandatory	string	Owning controller of a block device. **The value is described as follows:** The value is all or --, or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
createTime	Mandatory	string(uint64)	Time when the LUN was created.

Example

- The command is used to query basic information about LUNs in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/lun?range=[0-100]

Response: {
   "data": [
      {
         "ALLOCCAPACITY": "0",
         "ALLOCTYPE": "1",
         "CAPABILITY": "3",
         "CAPACITY": "209715200",
         "CAPACITYALARMLEVEL": "2",
         "COMPRESSION": "0",
         "COMPRESSIONSAVEDCAPACITY": "0",
         "COMPRESSIONSAVEDRATIO": "0",
         "DEDUPSAVEDCAPACITY": "0",
         "DEDUPSAVEDRATIO": "0",
         "DESCRIPTION": "",
         "DISGUISEREMOTEARRAYID": "--",
         "DISGUISESTATUS": "0",
         "DRS_ENABLE": "false",
```

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```
            "ENABLECOMPRESSION": "true",
            "ENABLEISCSITHINLUNTHRESHOLD": "false",
            "ENABLESMARTDEDUP": "true",
            "EXPOSEDTOINITIATOR": "false",
            "EXTENDIFSWITCH": "false",
            "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\",\"drStar\":\"FALSE\"}",
            "HEALTHSTATUS": "1",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "0",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISADD2LUNGROUP": "false",
            "ISCHECKZEROPAGE": "true",
            "ISCLONE": "false",
            "ISCSITHINLUNTHRESHOLD": "90",
            "MIRRORPOLICY": "1",
            "MIRRORTYPE": "0",
            "NAME": "zfy",
            "NGUID": "710062d5870001f87817bec000000000",
            "OWNINGCONTROLLER": "--",
            "PARENTID": "0",
            "PARENTNAME": "s0",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SNAPSHOTSCHEDULEID": "--",
            "SUBTYPE": "0",
            "THINCAPACITYUSAGE": "0",
            "TOTALSAVEDCAPACITY": "0",
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "5",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "4294967295",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "67817be10062d5870001f8c000000000",
            "blockDeviceName": "GLOBAL_REPO_0",
            "createTime": "1639483898",
            "devController": "all",
            "functionType": "1",
            "grainSize": "16",
            "hyperCdpScheduleId": "0",
            "isShowDedupAndCompression": "false",
            "lunCgId": "0",
            "mapped": "false",
            "remoteLunWwn": "--",
            "serviceEnabled": "true",
            "takeOverLunWwn": "--",
            "SMARTCACHEPARTITIONID": "1",
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- This interface is used to batch query basic information about target LUNs when the ID of the source object for which a HyperCopy pair is created is 160.

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```
Request: GET /deviceManager/rest/2102350BSA10F1000003/lun?
RSSTYPE=39&RSSASSOCIATEOBJID=[160]&range=[0-100]

Response: {
   "data": [
      {
         "ALLOCCAPACITY": "0",
         "ALLOCTYPE": "1",
         "CAPABILITY": "3",
         "CAPACITY": "20971520",
         "CAPACITYALARMLEVEL": "2",
         "COMPRESSION": "0",
         "COMPRESSIONSAVEDCAPACITY": "0",
         "COMPRESSIONSAVEDRATIO": "0",
         "DEDUPSAVEDCAPACITY": "0",
         "DEDUPSAVEDRATIO": "0",
         "DESCRIPTION": "",
         "DISGUISEREMOTEARRAYID": "--",
         "DRS_ENABLE": "false",
         "ENABLECOMPRESSION": "true",
         "ENABLEISCSITHINLUNTHRESHOLD": "false",
         "ENABLESMARTDEDUP": "true",
         "EXPOSEDTOINITIATOR": "false",
         "EXTENDIFSWITCH": "false",
         "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"TRUE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\"}",
         "HEALTHSTATUS": "1",
         "HYPERCDPSCHEDULEDISABLE": "0",
         "ID": "0",
         "IOCLASSID": "",
         "IOPRIORITY": "1",
         "ISADD2LUNGROUP": "false",
         "ISCHECKZEROPAGE": "false",
         "ISCLONE": "false",
         "ISCSITHINLUNTHRESHOLD": "90",
         "MIRRORPOLICY": "1",
         "MIRRORTYPE": "0",
         "NAME": "LUN001",
         "NGUID": "7100015ca6001d0b5ce8832600000005",
         "OWNINGCONTROLLER": "--",
         "PARENTID": "0",
         "PARENTNAME": "pool",
         "PREFETCHPOLICY": "0",
         "PREFETCHVALUE": "0",
         "REMOTELUNID": "--",
         "REPLICATION_CAPACITY": "0",
         "RUNNINGSTATUS": "27",
         "RUNNINGWRITEPOLICY": "1",
         "SECTORSIZE": "512",
         "SNAPSHOTSCHEDULEID": "--",
         "SUBTYPE": "0",
         "THINCAPACITYUSAGE": "0",
         "TOTALSAVEDCAPACITY": "0",
         "TOTALSAVEDRATIO": "0",
         "TYPE": 11,
         "USAGETYPE": "0",
         "WORKINGCONTROLLER": "--",
         "WORKLOADTYPEID": "4294967295",
         "WORKLOADTYPENAME": "",
         "WRITEPOLICY": "1",
         "WWN": "610223310032bcaa01448ef800000000",
         "hyperCdpScheduleId": "0",
         "lunCgId": "--",
         "mapped": "false",
         "remoteLunWwn": "--",
         "takeOverLunWwn": "--",
         "isShowDedupAndCompression": "false",
```

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```
            "grainSize": "16",
            "functionType": "1",
            "serviceEnabled": "false",
            "blockDeviceName": "--",
            "createTime": "1639483898",
            "devController": "--",
            "SMARTCACHEPARTITIONID": "1",
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Batch querying the LUNs that can be backed up or restored.


```
Request: GET /deviceManager/rest/0123456789012345678 9/lun?RSSTYPE=44&range=[0-100]

Response: {
    "data": [
        {
            "ALLOCCAPACITY": "0",
            "ALLOCTYPE": "1",
            "CAPABILITY": "3",
            "CAPACITY": "20971520",
            "CAPACITYALARMLEVEL": "2",
            "COMPRESSION": "0",
            "COMPRESSIONSAVEDCAPACITY": "0",
            "COMPRESSIONSAVEDRATIO": "0",
            "DEDUPSAVEDCAPACITY": "0",
            "DEDUPSAVEDRATIO": "0",
            "DESCRIPTION": "",
            "DISGUISEREMOTEARRAYID": "--",
            "DRS_ENABLE": "false",
            "ENABLECOMPRESSION": "true",
            "ENABLEISCSITHINLUNTHRESHOLD": "false",
            "ENABLESMARTDEDUP": "true",
            "EXPOSEDTOINITIATOR": "false",
            "EXTENDIFSWITCH": "false",
            "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"TRUE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\"}",
            "HEALTHSTATUS": "1",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "0",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISADD2LUNGROUP": "false",
            "ISCHECKZEROPAGE": "false",
            "ISCLONE": "false",
            "ISCSITHINLUNTHRESHOLD": "90",
            "MIRRORPOLICY": "1",
            "MIRRORTYPE": "0",
            "NAME": "LUN001",
            "NGUID": "7100015ca6001d0b5ce8832600000005",
            "OWNINGCONTROLLER": "--",
            "PARENTID": "0",
            "PARENTNAME": "pool",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SNAPSHOTSCHEDULEID": "--",
```

```
            "SUBTYPE": "0",
            "THINCAPACITYUSAGE": "0",
            "TOTALSAVEDCAPACITY": "0",
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "0",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "4294967295",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "610223310032bcaa01448ef800000000",
            "hyperCdpScheduleId": "0",
            "lunCgId": "--",
            "mapped": "false",
            "remoteLunWwn": "--",
            "takeOverLunWwn": "--",
            "isShowDedupAndCompression": "false",
            "grainSize": "16",
            "functionType": 1,
            "serviceEnabled": "false",
            "blockDeviceName": "--",
            "createTime": "1639483898",
            "devController": "--",
            "SMARTCACHEPARTITIONID": "1",
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.4.3 Interface for Implementing Associated Query of LUN Information

Function

This interface is used to implement associated query of basic information about LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 21: host 27: snapshot 230: SmartQoS policy 256: LUN group 245: mapping view 266: disk domain 57439: application type 57527: timing snapshot schedule 57645: LUN consistency group (discarded) 57646: snapshot consistency group 57703: HyperCopy consistency group 57846: protection group 57880: recycle bin view 273: SmartCache

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** If "ASSOCIATEOBJTYPE" is set to the SmartQoS policy and "ASSOCIATEOBJID" is set to "4294967295", LUNs not associated with the SmartQoS policy are queried. If "ASSOCIATEOBJTYPE" is set to the recycle bin view, the value of "ASSOCIATEOBJID" must be the index returned when you query the objects in the recycle bin view, indicating that details about the objects in the recycle bin view are queried.

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Parameter	Mandatory/Optional/Conditional	Type	Description

ASSOCIATEMETADATA	Optional	json	Queries the LUNs that a host can access through these ports.
			The value is described as follows: When the associated object is a host, the service port list can be used in the parameters.
			{
			"ports": {
			"fc": ["PORT_ID1","PORT_ID2","PORT_ID3"],
			"iscsi": ["PORT_ID1","PORT_ID2","PORT_ID3"]
			}
			}.
			Note: This parameter is delivered when the associated object is a host.

range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10,000 records can be returned.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	ID of a LUN object. **The value is described as follows:** -
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: NoProtected 1: Capacity 2: Performance 3: Extreme Performance 4: Multi-Tiers
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN 5: in-band LUN
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** -
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** -
SECTORSIZE	Mandatory	string(uint64)	Block size. **The value is described as follows:** -
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WWN	Mandatory	string	WWN. **The value is described as follows:** -
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running a write policy. **The value is described as follows:** 1: write back 2: write through
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring

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Parameter	Mandatory/ Conditional	Type	Description
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **The value is described as follows:** - **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller. **The value is described as follows:** - **Note:**The field is not used.
WORKINGCONTROLLER	Mandatory	string	Working controller. **The value is described as follows:** - **Note:**The field is not used.
THINCAPACITYUSAGE	Conditional	string(uint32)	Ratio of thin LUN capacity occupied by data to the capacity available to the thin LUN. **The value is described as follows:** - **Note:**This field is returned for thin LUNs only.

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Parameter	Mandatory/ Conditional	Type	Description
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data replication capacity, expressed in sectors. Capacity consumed by data replication refers to the capacity used for snapshot copy-on-write (COW). **The value is described as follows:** -
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
REMOTELUNID	Mandatory	string	ID of the external LUN that maps to the eDevLUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN 8: in-band LUN

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Parameter	Mandatory/ Conditional	Type	Description
remoteLunWwn	Mandatory	string	WWN of the external LUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRES-HOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: disabled true: enabled
DISGUISESTATUS	Mandatory	string(enum)	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs)
DISGUISEREMOTEAR-RAYID	Conditional	string	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over. **The value is described as follows:** - **Note:**"--" is returned if the LUN is not masqueraded.

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Parameter	Mandatory/ Conditional	Type	Description
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported
HASRSSOBJECT	Mandatory	string(json)	Status list of associated value-added service objects. **The value is described as follows:** -
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
CAPACITYALARMLE-VEL	Conditional	string(enum)	VASA: thin LUN capacity alarm severity. **The value is described as follows:** 2: normal 3: warning 6: critical **Note:**This field is returned for thin LUNs only.
WORKLOADTYPENAME	Mandatory	string	Application type name. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
WORKLOADTYPEID	Mandatory	string	Application type ID. **The value is described as follows:** - **Note:**"4294967295" indicates an invalid value.
takeOverLunWwn	Mandatory	string	WWN of the takeover LUN. **The value is described as follows:** -
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** - **Note:**If there is an ID, the ID is returned. If there is no ID, an empty string is returned.
HYPERCDPSCHEDULE-DISABLE	Mandatory	string(bool)	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: enables the HyperCDP schedule. 1: disables the HyperCDP schedule.
mapped	Mandatory	string(bool)	Whether the LUN is mapped. **The value is described as follows:** false: no true: yes
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** -
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** -
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** -
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Space saved by deduplication. **The value is described as follows:** -
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Space saved by compression. **The value is described as follows:** -
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total space saved. **The value is described as follows:** -
ISCLONE	Mandatory	string(bool)	Whether it is a clone LUN. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
SNAPSHOTSCHEDULEID	Mandatory	string	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512.
hyperCdpScheduleId	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** The value is from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the HyperCDP schedule.
lunCgId	Mandatory	string	LUN consistency group ID. **The value is described as follows:** The value is from 1 to 4096. **Note:**If the value is "0", it indicates that the LUN is not added to the LUN consistency group.
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: false 1: true
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** The value can be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB.

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Parameter	Mandatory/ Conditional	Type	Description
ISCHECKZEROPAGE	Conditional	string(bool)	Tag of the all-zero page check. **The value is described as follows:** false: not checked true: checked **Note:**This field is returned for thin LUNs only.
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
SMARTCACHEPARTI-TIONID	Mandatory	string	ID of the SmartCache partition. **The value is described as follows:** The value is from 1 to 16. **Note:**If there is an ID, the ID is returned. If there is no ID, "--" is returned.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
createTime	Mandatory	string(uint64)	Time when the LUN was created.

Example

- Implementing associated query of basic information about LUNs.

```
Request: GET/deviceManager/rest/210235843710E7000007/lun/associate?
ASSOCIATEOBJTYPE=256&ASSOCIATEOBJID=0&range=[0-100]
Response: {
   "data": [
      {
         "ALLOCCAPACITY": "0",
```

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```
            "ALLOCTYPE": "1",
            "CAPABILITY": "3",
            "CAPACITY": "409600",
            "CAPACITYALARMLEVEL": "2",
            "COMPRESSION": "0",
            "COMPRESSIONSAVEDCAPACITY": "0",
            "COMPRESSIONSAVEDRATIO": "0",
            "DEDUPSAVEDCAPACITY": "0",
            "DEDUPSAVEDRATIO": "0",
            "DESCRIPTION": "",
            "DISGUISEREMOTEARRAYID": "--",
            "DISGUISESTATUS": "0",
            "DRS_ENABLE": "false",
            "ENABLECOMPRESSION": "true",
            "ENABLEISCSITHINLUNTHRESHOLD": "false",
            "ENABLESMARTDEDUP": "true",
            "EXPOSEDTOINITIATOR": "false",
            "EXTENDIFSWITCH": "false",
            "HASRSSOBJECT": "{\"SnapShot\":\"TRUE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"TRUE
\",\"CloudBackup\":\"FALSE\"}",
            "HEALTHSTATUS": "1",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "8",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISADD2LUNGROUP": "true",
            "ISCHECKZEROPAGE": "false",
            "ISCLONE": "false",
            "ISCSITHINLUNTHRESHOLD": "90",
            "MIRRORPOLICY": "1",
            "MIRRORTYPE": "0",
            "NAME": "lun_wf0000",
            "NGUID": "71005e7fe8003e867cc3852300000014",
            "OWNINGCONTROLLER": "--",
            "PARENTID": "0",
            "PARENTNAME": "pool",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SNAPSHOTSCHEDULEID": "--",
            "SUBTYPE": "0",
            "THINCAPACITYUSAGE": "0",
            "TOTALSAVEDCAPACITY": "0",
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "0",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "4294967295",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "654899810075cd6e000dc2db00000008",
            "hyperCdpScheduleId": "0",
            "lunCgId": "6",
            "mapped": "false",
            "remoteLunWwn": "--",
            "takeOverLunWwn": "--",
            "isShowDedupAndCompression": "false",
            "createTime": "1639466771",
            "grainSize": "16",
            "SMARTCACHEPARTITIONID": "--",
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
```


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```
    },
    {
        "ALLOCCAPACITY": "0",
        "ALLOCTYPE": "1",
        "CAPABILITY": "3",
        "CAPACITY": "409600",
        "CAPACITYALARMLEVEL": "2",
        "COMPRESSION": "0",
        "COMPRESSIONSAVEDCAPACITY": "0",
        "COMPRESSIONSAVEDRATIO": "0",
        "DEDUPSAVEDCAPACITY": "0",
        "DEDUPSAVEDRATIO": "0",
        "DESCRIPTION": "",
        "DISGUISEREMOTEARRAYID": "--",
        "DISGUISESTATUS": "0",
        "DRS_ENABLE": "false",
        "ENABLECOMPRESSION": "true",
        "ENABLEISCSITHINLUNTHRESHOLD": "false",
        "ENABLESMARTDEDUP": "true",
        "EXPOSEDTOINITIATOR": "false",
        "EXTENDIFSWITCH": "false",
        "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"TRUE
\",\"CloudBackup\":\"FALSE\"}",
        "HEALTHSTATUS": "1",
        "HYPERCDPSCHEDULEDISABLE": "0",
        "ID": "9",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "ISADD2LUNGROUP": "true",
        "ISCHECKZEROPAGE": "false",
        "ISCLONE": "false",
        "ISCSITHINLUNTHRESHOLD": "90",
        "MIRRORPOLICY": "1",
        "MIRRORTYPE": "0",
        "NAME": "lun_wf0001",
        "NGUID": "71005e7fe8003e867cc3852300000014",
        "OWNINGCONTROLLER": "--",
        "PARENTID": "0",
        "PARENTNAME": "pool",
        "PREFETCHPOLICY": "0",
        "PREFETCHVALUE": "0",
        "REMOTELUNID": "--",
        "REPLICATION_CAPACITY": "0",
        "RUNNINGSTATUS": "27",
        "RUNNINGWRITEPOLICY": "1",
        "SECTORSIZE": "512",
        "SNAPSHOTSCHEDULEID": "--",
        "SUBTYPE": "0",
        "THINCAPACITYUSAGE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "0",
        "WORKINGCONTROLLER": "--",
        "WORKLOADTYPEID": "4294967295",
        "WORKLOADTYPENAME": "",
        "WRITEPOLICY": "1",
        "WWN": "654899810075cd6e000dc31600000009",
        "hyperCdpScheduleId": "0",
        "lunCgId": "6",
        "mapped": "false",
        "remoteLunWwn": "--",
        "takeOverLunWwn": "--",
        "isShowDedupAndCompression": "false",
        "createTime": "1639466771",
        "grainSize": "16",
        "SMARTCACHEPARTITIONID": "--",
```


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```
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Associating the object index ID in the recycle bin view to query the basic information about the LUN.


```
Request: GET /deviceManager/rest/2102351NYH10K1000091/lun/associate?
ASSOCIATEOBJTYPE=57880&ASSOCIATEOBJID=4

Response: {
    "data": [
        {
            "ALLOCCAPACITY": "0",
            "ALLOCTYPE": "1",
            "CAPABILITY": "3",
            "CAPACITY": "6291456",
            "CAPACITYALARMLEVEL": "2",
            "COMPRESSION": "0",
            "COMPRESSIONSAVEDCAPACITY": "0",
            "COMPRESSIONSAVEDRATIO": "0",
            "DEDUPSAVEDCAPACITY": "0",
            "DEDUPSAVEDRATIO": "0",
            "DISGUISEREMOTEARRAYID": "--",
            "DISGUISESTATUS": "0",
            "DRS_ENABLE": "false",
            "ENABLECOMPRESSION": "true",
            "ENABLEISCSITHINLUNTHRESHOLD": "false",
            "ENABLESMARTDEDUP": "true",
            "EXPOSEDTOINITIATOR": "false",
            "EXTENDIFSWITCH": "false",
            "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\",\"drStar\":\"FALSE\"}",
            "HEALTHSTATUS": "1",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "20",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISADD2LUNGROUP": "false",
            "ISCHECKZEROPAGE": "true",
            "ISCLONE": "false",
            "ISCSITHINLUNTHRESHOLD": "90",
            "MIRRORPOLICY": "1",
            "DESCRIPTION": "",
            "MIRRORTYPE": "0",
            "NAME": "HB_LUN0005",
            "NGUID": "71005e7fe8003e867cc3852300000014",
            "OWNINGCONTROLLER": "--",
            "PARENTID": "0",
            "PARENTNAME": "s0",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SNAPSHOTSCHEDULEID": "--",
            "SUBTYPE": "0",
            "THINCAPACITYUSAGE": "0",
            "TOTALSAVEDCAPACITY": "0",
```


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```
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "0",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "4294967295",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "67cc3851005e7fe8003e862300000014",
            "grainSize": "16",
            "hyperCdpScheduleId": "0",
            "isShowDedupAndCompression": "false",
            "lunCgId": "0",
            "mapped": "false",
            "remoteLunWwn": "--",
            "takeOverLunWwn": "--",
            "SMARTCACHEPARTITIONID": "--",
            "SC_HITRAGE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.4.4 Interface for Querying Information about the Bitmap of the Physical Space Allocated to LUNs

Function

This interface is used to query information about the bitmap of the physical space allocated to LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_bitmap/get_alloc

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LUNID	Mandatory	string	Requests the LUN ID to obtain its bitmap information.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SEGMENTSTARTOFF-SETBYTES	Mandatory	uint64	Starting position of a segment. **Note:** 1. The value cannot be greater than the size of the requested LUN or snapshot. 2. The value is an integer multiple of 512 bytes.
SEGMENTLENGTHBYTES	Mandatory	uint64	Segment length. **Note:** 1. The value cannot be greater than the size of the requested LUN or snapshot. 2. The value is an integer multiple of 512 bytes.
BITMAPCHUNKSIZE	Mandatory	uint64	Block size. **Note:** 1. The value is greater than or equal to the size of a local unit bitmap. 2. The value is an integer multiple of the size of a local unit bitmap.

Result

Parameter	Mandatory/Conditional	Type	Description
CHUNKBITMAP	Mandatory	string	Bitmap information, represented by a hexadecimal character string of the memory buffer.
LUNID	Mandatory	string	Requests the LUN ID.

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Example

- Querying information about the bitmap of the physical space allocated to LUNs.

```
Request: GET /deviceManager/rest/210235843710E7000007/lun_bitmap/get_alloc?
BITMAPCHUNKSIZE=65536&LUNID=1&SEGMENTLENGTHBYTES=536870912&SEGMENTSTARTOFFSETB
YTES=0

Response:
{
   "data": {
      "CHUNKBITMAP": "fffffff...",
      "LUNID": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.2.4.5 Interface for Querying LUN Information

Function

This interface is used to query basic information about LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	LUN ID. **The value is described as follows:** - **Note:**Either ID or NAME must be set.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**Either ID or NAME must be set.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	LUN ID. **The value is described as follows:** -
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 31 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN 2: PE LUN
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** -
SECTORSIZE	Mandatory	string(uint64)	Block size. **The value is described as follows:** -
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WWN	Mandatory	string	WWN. **The value is described as follows:** -
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running a write policy. **The value is described as follows:** 1: write back 2: write through
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
OWNINGCONTROLLER	Mandatory	string	Owning controller. **The value is described as follows:** - **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **The value is described as follows:** - **Note:**The field is not used.
WORKINGCONTROLLER	Mandatory	string	Working controller. **The value is described as follows:** - **Note:**The field is not used.
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: NoProtected 1: Capacity 2: Performance 3: Extreme Performance 4: Multi-Tiers

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITYALARMLE-VEL	Conditional	string(enum)	VASA: thin LUN capacity alarm severity. **The value is described as follows:** 2: normal 3: warning 6: critical **Note:**This field is returned for thin LUNs only.
THINCAPACITYUSAGE	Conditional	string(uint32)	Ratio of thin LUN capacity occupied by data to the capacity available to the thin LUN. **The value is described as follows:** - **Note:**This field is returned for thin LUNs only.
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
ISADDTOLUNGROUP	Mandatory	string(bool)	Whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes **Note:**The meaning of this field is the same as that of ISADD2LUNGROUP.

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Parameter	Mandatory/ Conditional	Type	Description
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data replication capacity, expressed in sectors. Capacity consumed by data replication refers to the capacity used for snapshot copy-on-write (COW). **The value is described as follows:** -
REMOTELUNID	Mandatory	string	ID of the external LUN that maps to the eDevLUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
USAGETYPE	Mandatory	string(enum)	LUN usage. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN) 2: VVol LUN 3: PE LUN 5: global image repository LUN 6: local image repository LUN 7: container configuration LUN
HYPERCDPSCHEDULE-DISABLE	Mandatory		Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: enables the HyperCDP schedule. 1: disables the HyperCDP schedule.

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Parameter	Mandatory/ Conditional	Type	Description
MIRRORPOLICY	Mandatory	string(enum)	Mirror policy. **The value is described as follows:** 0: no mirroring 1: mirroring
remoteLunWwn	Mandatory	string	WWN of the external LUN. **The value is described as follows:** - **Note:**"--" is returned for non-eDevLUNs.
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
ENABLESMARTDEDUP	Mandatory	string(bool)	Deduplication enabled or not (this field is no longer used). **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRES-HOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. The default value is 90.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on
DISGUISESTATUS	Mandatory	string(enum)	LUN masquerading status. **The value is described as follows:** 0: no masquerading 1: basic masquerading (supported by eDevLUNs) 2: extended masquerading (supported by eDevLUNs) 3: inherited masquerading (not supported) 4: third-party masquerading (supported by eDevLUNs)
DISGUISEREMOTEAR-RAYID	Conditional	string	Masqueraded as the specified remote array ID. Used in the expansion scenario when the heterogeneous storage arrays are taken over. **The value is described as follows:** - **Note:**"--" is returned if the LUN is not masqueraded.

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Parameter	Mandatory/ Conditional	Type	Description
EXTENDIFSWITCH	Mandatory	string(bool)	Whether to support the external DIF feature. **The value is described as follows:** false: not supported true: supported
SNAPSHOTIDS	Mandatory	string(array)	Snapshot ID list. **The value is described as follows:** -
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	Replication ID list.
LUNMigrationOrigin	Mandatory	string(enum)	Indicates whether the LUN serves as the source or target LUN of LUN migration. **The value is described as follows:** 0: source LUN 1: target LUN **Note:**If there is no valid value, -1 is returned.
WORKLOADTYPENAME	Mandatory	string	Application type name. **The value is described as follows:** -
WORKLOADTYPEID	Mandatory	string	Application type ID. **The value is described as follows:** - **Note:**"4294967295" indicates an invalid value.
takeOverLunWwn	Mandatory	string	WWN of the takeover LUN. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
CLONEIDS	Mandatory	string	Indicates the clone ID. **The value is described as follows:** All positive integers.
SNAPSHOTSCHEDULEID	Mandatory	string	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the timing snapshot schedule.
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** - **Note:**If there is an ID, the ID is returned. If there is no ID, an empty string is returned.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** -
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** -
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Space saved by deduplication. **The value is described as follows:** -
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Space saved by compression. **The value is described as follows:** -
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total space saved. **The value is described as follows:** -
ISCLONE	Mandatory	string(bool)	Whether it is a clone LUN. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
lunCgId	Mandatory	string	ID of the LUN consistency group. **The value is described as follows:** 1 to 4096. **Note:** 1. If a LUN is not added to the protection group/LUN consistency group, the value of this field is "0", and the value of the "protectGroupIds" field is "--". 2. If a LUN is added to protection group "0", the value of this field is "0", and the value of the "protectGroupIds" field is "0". 3. If a LUN is added to multiple protection groups, the value of this field is the smallest non-zero protection group ID.
protectGroupIds	Mandatory	string	LUN protection group ID list **The value is described as follows:** Multiple IDs are separated by commas (,).
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: false 1: true

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Parameter	Mandatory/ Conditional	Type	Description
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** The value can be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB.
HASRSSOBJECT	Mandatory	string(json)	Status list of associated value-added service objects. **The value is described as follows:** -
LUNCOPYIDS	Mandatory	string	List of LUN clone IDs. **The value is described as follows:** -
hyperCdpScheduleId	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** The value is from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the HyperCDP schedule.
mapped	Mandatory	string(bool)	Whether the LUN is mapped. **The value is described as follows:** false: no true: yes
ISCHECKZEROPAGE	Conditional	string(bool)	Tag of the all-zero page check. **The value is described as follows:** false: not checked true: checked **Note:**This field is returned for thin LUNs only.

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Parameter	Mandatory/ Conditional	Type	Description
functionType	Mandatory	string(uint8_t)	Function type. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
serviceEnabled	Mandatory	bool	Block device enabling switch. **The value is described as follows:** false: off true: on
blockDeviceName	Mandatory	string	Block device name. **The value is described as follows:** The value can contain digits, letters, and underscores (_).
devController	Mandatory	string	Owning controller of a block device. **The value is described as follows:** The value is all or --, or in the format of XA, XB, XC, or XD, where X is an integer ranging from 0 to 7.
SMARTCACHEPARTI-TIONID	Mandatory	string	ID of the SmartCache partition. **The value is described as follows:** The value is from 1 to 16.

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Parameter	Mandatory/ Conditional	Type	Description
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio.
vstoreId	Mandatory	string	vStore ID.
createTime	Mandatory	string(uint64)	Time when the LUN was created.

Example

- Querying basic information about LUNs.

```
Request: GET /deviceManager/rest/210235843710E7000007/lun/0

Response: {
   "data": {
      "ALLOCCAPACITY": "0",
      "ALLOCTYPE": "1",
      "CAPABILITY": "3",
      "CAPACITY": "209715200",
      "CAPACITYALARMLEVEL": "2",
      "CLONEIDS": "[]",
      "COMPRESSION": "0",
      "COMPRESSIONSAVEDCAPACITY": "0",
      "COMPRESSIONSAVEDRATIO": "0",
      "DEDUPSAVEDCAPACITY": "0",
      "DEDUPSAVEDRATIO": "0",
      "DESCRIPTION": "",
      "DISGUISEREMOTEARRAYID": "--",
      "DISGUISESTATUS": "0",
      "DRS_ENABLE": "false",
      "ENABLECOMPRESSION": "true",
      "ENABLEISCSITHINLUNTHRESHOLD": "false",
      "ENABLESMARTDEDUP": "true",
      "EXPOSEDTOINITIATOR": "false",
      "EXTENDIFSWITCH": "false",
      "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\",\"drStar\":\"FALSE\"}",
      "HEALTHSTATUS": "1",
      "HYPERCDPSCHEDULEDISABLE": "0",
      "ID": "0",
      "IOCLASSID": "",
      "IOPRIORITY": "1",
      "ISADD2LUNGROUP": "false",
      "ISCHECKZEROPAGE": "true",
      "ISCLONE": "false",
      "ISCSITHINLUNTHRESHOLD": "90",
      "LUNCOPYIDS": "[]",
      "LUNMigrationOrigin": "-1",
      "MIRRORPOLICY": "1",
      "MIRRORTYPE": "0",
      "NAME": "zfy",
      "NGUID": "710062d5870001f87817bec000000000",
      "OWNINGCONTROLLER": "--",
      "PARENTID": "0",
      "PARENTNAME": "s0",
      "PREFETCHPOLICY": "0",
      "PREFETCHVALUE": "0",
      "REMOTELUNID": "--",
      "REMOTEREPLICATIONIDS": "[]",
      "REPLICATION_CAPACITY": "0",
```

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```
        "RUNNINGSTATUS": "27",
        "RUNNINGWRITEPOLICY": "1",
        "SECTORSIZE": "512",
        "SNAPSHOTIDS": "[]",
        "SNAPSHOTSCHEDULEID": "--",
        "SUBTYPE": "0",
        "THINCAPACITYUSAGE": "0",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 11,
        "USAGETYPE": "5",
        "WORKINGCONTROLLER": "--",
        "WORKLOADTYPEID": "4294967295",
        "WORKLOADTYPENAME": "",
        "WRITEPOLICY": "1",
        "WWN": "67817be10062d5870001f8c000000000",
        "blockDeviceName": "GLOBAL_REPO_0",
        "createTime": "1635479153",
        "devController": "all",
        "functionType": "1",
        "grainSize": "16",
        "hyperCdpScheduleId": "0",
        "isShowDedupAndCompression": "false",
        "lunCgId": "0",
        "mapped": "false",
        "protectGroupIds": "",
        "remoteLunWwn": "--",
        "serviceEnabled": "true",
        "takeOverLunWwn": "--",
        "SMARTCACHEPARTITIONID": "1",
        "SC_HITRAGE": "0",
        "vstoreId": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.4.6 Interface for Querying the LUN Difference Between a Protection Group and a Clone Group

Function

This interface is used to query the LUN difference between a protection group and a clone group.

URL

https://${ip}:${port}/api/v2/get_diff_lun

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
cloneCgId	Mandatory	uint32	Clone consistency group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	ID.
name	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
healthStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write-protected

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Parameter	Mandatory/ Conditional	Type	Description
runningStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
capacity	Mandatory	string(uint64)	Configured capacity.
wwn	Mandatory	string	WWN.

Example

- Querying basic information about LUNs.

```
Request: GET /api/v2/get_diff_lun?pgId=0&cloneCgId=0
Response:
{
   "data": [
      {
         "ID": "1",
         "name": "x",
         "healthStatus": "1",
         "runningStatus": "27",
         "capacity": "4194304",
         "wwn": "6ad020310004050600043bb500000001",
         "TYPE": "11"
      }
   ],
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.7.2.4.7 Interface for Querying the LUN Difference Between a Protection Group and a Snapshot Consistency Group

Function

This interface is used to query the LUN difference between a protection group and a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/get_diff_lun

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
snapCgId	Mandatory	uint32	Snapshot consistency group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	ID.
name	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
healthStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write-protected

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Parameter	Mandatory/ Conditional	Type	Description
runningStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
capacity	Mandatory	string(uint64)	Configured capacity.
wwn	Mandatory	string	WWN.

Example

- Querying basic information about the LUN difference between a protection group and a snapshot consistency group.

```
Request: GET /api/v2/get_diff_lun?pgId=0&snapCgId=0
Response:
{
   "data": [
      {
         "ID": "1",
         "name": "x",
         "healthStatus": "1",
         "runningStatus": "27",
         "capacity": "4194304",
         "wwn": "6ad020310004050600043bb500000001",
         "TYPE": "11"
      }
   ],
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.7.2.4.8 Interface for Querying the LUN Quantity Difference Between a Protection Group and a Clone Group

Function

This interface is used to query the LUN quantity difference between a protection group and a clone group.

URL

https://${ip}:${port}/api/v2/get_diff_lun/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.
cloneCgId	Mandatory	uint32	Clone consistency group ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried LUNs.

Example

- Querying the number of LUNs.

```
Request: GET /api/v2/get_diff_lun/count?pgId=0&cloneCgId=0
Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.7.2.4.9 Interface for Querying the LUN Quantity Difference Between a Protection Group and a Snapshot Consistency Group

Function

This interface is used to query the LUN quantity difference between a protection group and a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/get_diff_lun/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.
snapCgId	Mandatory	uint32	Snapshot consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried LUNs.

Example

- Querying the LUN quantity difference between a protection group and a snapshot consistency group.

```
Request: GET /api/v2/get_diff_lun/count?pgId=0&snapCgId=0
Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.7.2.4.10 Interface for Querying the Number of LUNs

Function

This interface is used to query the number of LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: NAME, ID, PARENTID, CAPACITY, ISADD2LUNGROUP, OWNINGCONTROLLER, HEALTHSTATUS, WWN, and RUNNINGSTATUS. OWNINGCONTROLLER and WWN must be queried precisely.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Optional	enum	Associated object type. **The value is described as follows:** 11: LUN 21: host 27: snapshot 230: SmartQoS policy 256: LUN group 245: mapping view 266: disk domain 57439: application type 57527: timing snapshot schedule 57645: LUN consistency group (discarded) 57646: snapshot consistency group 57703: HyperCopy consistency group 57846: protection group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	Associated object ID. **The value is described as follows:** If "ASSOCIATEOBJTYPE" is set to the SmartQoS policy and "ASSOCIATEOBJID" is set to "4294967295", LUNs not associated with the SmartQoS policy are queried. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RSSTYPE	Optional	enum	Type of the LUN that supports value-added features. **The value is described as follows:** 12: LUN that can function as the primary LUN of a remote replication pair 13: remote LUN that can function as the secondary LUN of remote replication 18: LUN that can function as the source LUN of LUN migration 19: LUN that can function as the target LUN of LUN migration 22: LUN that supports snapshots 25: primary LUN that supports SAN HyperMetro 26: secondary LUN that supports SAN HyperMetro 32: LUN that has snapshots 33: target object that can be used for snapshot rollback 34: clone LUN 35: common LUN 36: LUN that can be added to a HyperCDP schedule 38: LUN that can function as the source object of a HyperCopy pair 39: LUN that can function as the target object of a HyperCopy pair

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Parameter	Mandatory/Optional/Conditional	Type	Description
			40: HyperCopy pair that can be added to a HyperCopy consistency group 41: LUN that can be added to the LUN consistency group (or protection group) 42: LUN that has enabled HyperCDP 43: LUN that supports HyperCDP
RSSASSOCIATEOBJID		string	Value-added associated object ID. **Note:**This parameter must be delivered when RSSTYPE is set to 39. The value is the source object ID of a single HyperCopy pair to be created.
excludeIds	Optional	string	Filtering ID list.
excludedProtection-GroupList	Optional	string	Protection group ID list for excluding LUNs. **The value is described as follows:** The value ranges from 1 to 65535. **Length:**2048 **Note:** 1. This parameter is valid only when RSSTYPE is set to 39. 2. excludedProtection-GroupList and excludedLunGroupList are mutually exclusive.

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludedLunGroupList	Optional	string	LUN group ID list for excluding LUNs. **The value is described as follows:** The value ranges from 1 to 65535. **Length:**2048 **Note:** 1. This parameter is valid only when RSSTYPE is set to 39. 2. excludedProtectionGroupList and excludedLunGroupList are mutually exclusive.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried LUNs.

Example

- Querying the number of LUNs.

```
Request: GET/deviceManager/rest/210235843910E6000009/lun/count

Response:
{
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.2.4.11 (Not Recommended) Interface for Batch Querying LUN Clone

Function

This interface is used to batch query LUN clones (you are advised to use Interface for Batch Querying Clone Pairs instead of this interface).

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISCLONE	Mandatory	bool	Is clone or not. **The value is described as follows:** true: yes
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, CLONESOURCENAME, CLONESOURCEID, CLONESOURCETYPE,HEALTHSTATUS, RUNNINGSTATUS, SPLITSTATUS, ALLOCTYPE, PARENTID, CAPACITY, ISADD2LUNGROUP, OWNINGCONTROLLER, and WWN are supported. OWNINGCONTROLLER and WWN must be queried precisely.
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 11: LUN
ID	Mandatory	string	LUN ID.
NAME	Mandatory	string	LUN name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool.
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty 15: write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN
CAPACITY	Mandatory	string(uint64)	Configured capacity. **Unit:**sectors
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **Unit:**sectors
SECTORSIZE	Mandatory	string(uint64)	Block size. **Unit:**bytes
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running write policy. **The value is described as follows:** 1: write back 2: write through
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring

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Parameter	Mandatory/ Conditional	Type	Description
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller.
IOCLASSID	Mandatory	string	I/O class. **Note:**If there is an ID, the ID is returned. If there is no ID, an empty string is returned.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness (VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
ISCHECKZEROPAGE	Mandatory	string(bool)	Tag of all-zero page check. **The value is described as follows:** false: not checked true: checked

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Parameter	Mandatory/ Conditional	Type	Description
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data protection capacity, which refers to the capacity used for snapshot copy-on-write (COW). **Unit:**sectors
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
USAGETYPE	Mandatory	string(enum)	LUN usage scope. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN)
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled. **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror Type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
DEDUPSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by deduplication. **Unit:**Sectors
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by compression. **Unit:**Sectors
TOTALSAVEDCAPACITY	Mandatory	string(uint64)	Total space saved. **Unit:**Sectors
ENABLEDEDUP	Mandatory	string(bool)	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled
ISCSITHINLUNTHRESHOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows Server 2012. **The value is described as follows:** The value ranges from 50 to 99. The default value is 90.
ENABLEISCSITHINLUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows Server 2012. **The value is described as follows:** false: off true: on
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **Unit:**%
COMPRESSIONSAVEDRATIO	Mandatory	stirng(uint32)	Space saving ratio of compression. **Unit:**%
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported
WORKLOADTYPENAME	Mandatory	string	Application type name.
ISCLONE	Mandatory	string(bool)	Is clone or not. **The value is described as follows:** false: no true: yes
SPLITSTARTTIME	Mandatory	string(uint64)	Clone split start time. **Note:**If there is no valid value, -1 is returned.
SPLITENDTIME	Mandatory	string(uint64)	Expected clone split end time. **Note:**If there is no valid value, -1 is returned.
SPLITSPEED	Mandatory	string(enum)	Clone splitting speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
SPLITRATE	Mandatory	string(uint32)	Clone splitting rate. **The value is described as follows:** 0..100 **Note:**If there is no valid value, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSTATUS	Mandatory	string(enum)	Clone split status. **The value is described as follows:** 0: not split 1: splitting
CLONESOURCEID	Mandatory	string(uint32)	Clone source object ID. **The value is described as follows:** 0 to 65535.
CREATECLONETIME	Mandatory	string(uint64)	Time when clone is created.
CLONESOURCENAME	Mandatory	string	Clone source object name.
CLONESOURCETYPE	Mandatory	string(enum)	Clone source type. **The value is described as follows:** 1: LUN 2: snapshot
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0:false;1:true
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** 4KB 8KB 16KB 32KB 64KB **Unit:**Sectors

Example

- Batch querying basic information about LUN clones.

```
Request: GET/deviceManager/rest/210235843710E7000007/lun?ISCLONE=true&range=[0-100]
Response:
{
   "data": [
      {
         "ALLOCCAPACITY": "0",
         "ALLOCTYPE": "1",
         "CAPACITY": "409600",
         "CLONESOURCEID": "0",
```

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```
            "CLONESOURCENAME": "lun0000",
            "CLONESOURCETYPE": "1",
            "COMPRESSION": "0",
            "COMPRESSIONSAVEDCAPACITY": "0",
            "COMPRESSIONSAVEDRATIO": "0",
            "CREATECLONETIME": "1567865993",
            "DEDUPSAVEDCAPACITY": "0",
            "DEDUPSAVEDRATIO": "0",
            "DESCRIPTION": "",
            "DISGUISEREMOTEARRAYID": "--",
            "DRS_ENABLE": "false",
            "ENABLECOMPRESSION": "true",
            "ENABLEISCSITHINLUNTHRESHOLD": "false",
            "ENABLESMARTDEDUP": "true",
            "EXPOSEDTOINITIATOR": "false",
            "EXTENDIFSWITCH": "false",
            "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\"}",
            "HEALTHSTATUS": "1",
            "ID": "350",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISADD2LUNGROUP": "false",
            "ISCHECKZEROPAGE": "false",
            "ISCLONE": "true",
            "ISCSITHINLUNTHRESHOLD": "90",
            "MIRRORPOLICY": "1",
            "MIRRORTYPE": "0",
            "NAME": "clone",
            "OWNINGCONTROLLER": "--",
            "PARENTID": "0",
            "PARENTNAME": "pool",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SPLITENDTIME": "-1",
            "SPLITRATE": "0",
            "SPLITSPEED": "2",
            "SPLITSTARTTIME": "1567865993",
            "SPLITSTATUS": "0",
            "SUBTYPE": "0",
            "TOTALSAVEDCAPACITY": "0",
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "0",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "654899810075cd6e002cbcef0000015e",
            "remoteLunWwn": "--",
            "takeOverLunWwn": "--",
            "isShowDedupAndCompression": "false",
            "grainSize": "16"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.2.4.12 (Not Recommended) Interface for Batch Querying LUN Consistency Groups

Function

This interface is used to batch query basic information about LUN consistency groups (you are advised to use Interface for Batch Querying Protection Groups instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filtering criteria. **The value is described as follows:** Query by specifying NAME and ID is supported.
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RSSTYPE	Optional	enum	Type of LUN consistency groups that support value-added features. **The value is described as follows:** 0: LUN consistency group that has HyperCDP consistency groups 1: LUN consistency group that can be backed up or restored

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
SNAPSCHEDULEID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** 1 to 512. **Note:**If the value is "0", it indicates that the LUN consistency group is not added to the HyperCDP schedule.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 1: Normal 53: Initializing 106: Deleting
REMOVESNAP	Mandatory	string	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes
CGTYPE	Mandatory	string	Type of a consistency group. **The value is described as follows:** 0: LUN consistency group 1: HyperCopy consistency group
HYPERCDPSCHEDULE-DISABLE	Mandatory	string	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: not disable 1: disable
WWN	Mandatory	string	WWN.

Example

- Batch querying LUN consistency groups.

```
Request: GET/deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP?
range=[0-100]
Response: {
   "data": [
      {
         "CGTYPE": "0",
         "DESCRIPTION": "",
         "HYPERCDPSCHEDULEDISABLE": "0",
         "ID": "1",
         "NAME": "lunCg1",
```

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```
            "REMOVESNAP": "0",
            "RUNNINGSTATUS": "1",
            "SNAPSCHEDULEID": "0",
            "TYPE": 57645,
            "WWN": "6049fca100037d290003599b00000001"
        },
        {
            "CGTYPE": "0",
            "DESCRIPTION": "",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "2",
            "NAME": "lunCg2",
            "REMOVESNAP": "0",
            "RUNNINGSTATUS": "1",
            "SNAPSCHEDULEID": "0",
            "TYPE": 57645,
            "WWN": "6049fca100037d290003667300000002"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Batch querying the LUN consistency groups that can be backed up or restored.


```
Request: GET /deviceManager/rest/0123456789012345678 9/lun_consistency_group?
RSSTYPE=1&range=[0-100]
Response:
{
    "data": [
        {
            "CGTYPE": "0",
            "DESCRIPTION": "",
            "HYPERCDPSCHEDULEDISABLE": "0",
            "ID": "3",
            "NAME": "LunCG003",
            "REMOVESNAP": "0",
            "RUNNINGSTATUS": "1",
            "SNAPSCHEDULEID": "0",
            "TYPE": 57645,
            "WWN": "6049fca100037d2900078bee00000003"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.4.13 (Not Recommended) Interface for Implementing Associated Query of LUN Consistency Groups

Function

This interface is used to implement associated query of basic information about LUN consistency groups (you are advised to use Interface for Implementing Associated Query of Protection Groups instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_consistency_group/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 57527: HyperCDP schedule
ASSOCIATEOBJID	Mandatory	string	Associated object ID.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Description.
SNAPSCHEDULEID	Mandatory	string	Timing snapshot schedule ID. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**If the value is "0", it indicates that the LUN is not added to the timing snapshot schedule.
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 1: Normal 53: Initializing 106: Deleting
REMOVESNAP	Mandatory	enum	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes
CGTYPE	Mandatory	enum	Type of a consistency group. **The value is described as follows:** 0: LUN consistency group 1: HyperCopy consistency group
HYPERCDPSCHEDULE-DISABLE	Mandatory	enum	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: not disable 1: disable

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Parameter	Mandatory/ Conditional	Type	Description
WWN	Mandatory	string	WWN.

Example

- Querying the LUN consistency groups in the HyperCDP schedule.

```
Request: GET /deviceManager/rest/210515630459135190 87/lun_consistency_group/associate?
TYPE=57645&ASSOCIATEOBJTYPE=57527&ASSOCIATEOBJID=1&range=[0-100]
Response: {
  {
    "data": [
    {
      "CGTYPE": "0",
      "DESCRIPTION": "",
      "HYPERCDPSCHEDULEDISABLE": "0",
      "ID": "0",
      "NAME": "PG",
      "REMOVESNAP": "0",
      "RUNNINGSTATUS": "1",
      "SNAPSCHEDULEID": "1",
      "TYPE": 57645,
      "WWN": "684ad581009336ab0066a1f500000000"
    }
  ],
    "error": {
      "code": 0,
      "description": "0"
    }
  }
```

2.7.2.4.14 (Not Recommended) Interface for Querying a LUN Consistency Group

Function

This interface is used to query information about a LUN consistency group (you are advised to use Interface for Querying a Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	LUN consistency group ID. **The value is described as follows:** 0 to 16383.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
SNAPSCHEDULEID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** 1 to 512. **Note:**If the value is "0", it indicates that the LUN consistency group is not added to the HyperCDP schedule.
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 1: Normal 53: Initializing 106: Deleting

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Parameter	Mandatory/ Conditional	Type	Description
REMOVESNAP	Mandatory	string	Whether to remove the snapshot of the LUN from the snapshot consistency group. **The value is described as follows:** 0: no 1: yes
CGTYPE	Mandatory	string	Type of a consistency group. **The value is described as follows:** 0: LUN consistency group 1: HyperCopy consistency group
HYPERCDPSCHEDULE-DISABLE	Mandatory	string	Whether to disable the HyperCDP schedule. **The value is described as follows:** 0: not disable 1: disable

Example

- Querying information about a LUN consistency group.

```
Request: GET /deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP/1
Response:
{
    "data": {
        "CGTYPE":"0",
        "DESCRIPTION": "",
        "HYPERCDPSCHEDULEDISABLE":"0",
        "ID": "1",
        "NAME": "lunCg1",
        "REMOVESNAP":"0",
        "RUNNINGSTATUS":"1",
        "SNAPSCHEDULEID": "0",
        "TYPE": 57645
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.2.4.15 (Not Recommended) Interface for Querying LUN Clone Information

Function

This interface is used to query basic information about LUN clones (you are advised to use Interface for Querying Clone Pair Information instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Clone ID. **The value is described as follows:** The value ranges from 0 to 65535.
ISCLONE	Mandatory	bool	Is clone or not. **The value is described as follows:** true: yes

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 11:LUN
ID	Mandatory	string	ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the owning storage pool.
PARENTNAME	Mandatory	string	Name of the owning storage pool. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty 15: write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin LUN

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITY	Mandatory	string(uint64)	Configured capacity.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity.
SECTORSIZE	Mandatory	string(uint64)	Block size.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapped or not. **The value is described as follows:** false: not mapped true: mapped
WRITEPOLICY	Mandatory	string(enum)	Write policy. **The value is described as follows:** 1: write back 2: write through
RUNNINGWRITEPOLICY	Mandatory	string(enum)	Running write policy. **The value is described as follows:** 1: write back 2: write through
MIRRORPOLICY	Mandatory	string(enum)	Mirroring policy. **The value is described as follows:** 0: no mirroring 1: mirroring
PREFETCHPOLICY	Mandatory	string(enum)	Prefetch policy. **The value is described as follows:** 0: no prefetch 1: constant prefetch 2: variable prefetch 3: intelligent prefetch **Note:**The field is not used.
PREFETCHVALUE	Mandatory	string(uint32)	Prefetch policy value. **Note:**The field is not used.
OWNINGCONTROLLER	Mandatory	string	Owning controller.

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Parameter	Mandatory/ Conditional	Type	Description
IOCLASSID	Mandatory	string	ID of the I/O class object.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
DRS_ENABLE	Mandatory	string(bool)	VMware vStorage APIs for Storage Awareness(VASA): DRS supported or not. **The value is described as follows:** false: not supported true: supported
ISCHECKZEROPAGE	Mandatory	string(bool)	Tag of all-zero page check. **The value is described as follows:** false: not checked true: checked
REPLICATION_CAPACITY	Mandatory	string(uint64)	Data protection capacity, which refers to the capacity used for snapshot copy-on-write (COW).
ISADD2LUNGROUP	Mandatory	string(bool)	Indicates whether a LUN has been added to a LUN group. **The value is described as follows:** false: no true: yes
USAGETYPE	Mandatory	string(enum)	LUN usage scope. **The value is described as follows:** 0: traditional LUN 1: eDevLUN (LUN created using an external LUN)

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Parameter	Mandatory/ Conditional	Type	Description
ENABLECOMPRESSION	Mandatory	string(bool)	Indicates whether compression is enabled. **The value is described as follows:** false: disabled true: enabled
MIRRORTYPE	Mandatory	string(enum)	Mirror type. **The value is described as follows:** 0: common LUN 1: mirror LUN 2: mirror copy LUN
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
DEDUPSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by deduplication.
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Space saved by compression.
TOTALSAVEDCAPACITY	Mandatory	string(uint64)	Total space saved.
ISCSITHINLUNTHRESHOLD	Mandatory	string(uint32)	Capacity alarm threshold when thin LUNs are mounted to Windows 2012. **The value is described as follows:** The value ranges from 50 to 99. The default value is 90.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEISCSITHIN-LUNTHRESHOLD	Mandatory	string(bool)	iSCSI thin LUN alarm switch in Windows 2012. **The value is described as follows:** false: off true: on **Note:**If there is no valid value, -1 is returned.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication.
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression.
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio.
EXTENDIFSWITCH	Mandatory	string(bool)	Whether the external DIF feature is supported. **The value is described as follows:** false: not supported true: supported
WORKLOADTYPENAME	Mandatory	string	Application type name.
ISCLONE	Mandatory	string(bool)	Is clone or not. **The value is described as follows:** false: no true: yes
SPLITSTARTTIME	Mandatory	string(uint64)	Clone split start time. **Note:**If there is no valid value, -1 is returned.
SPLITENDTIME	Mandatory	string(uint64)	Expected clone split end time. **Note:**If there is no valid value, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSPEED	Mandatory	string(enum)	Clone split speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest
SPLITRATE	Mandatory	string(uint32)	Clone split progress. **The value is described as follows:** 0..100 **Note:**If there is no valid value, -1 is returned.
SPLITSTATUS	Mandatory	string(enum)	Clone split status. **The value is described as follows:** 0: not split 1: splitting
CLONESOURCEID	Mandatory	string(uint32)	Clone source object ID. **The value is described as follows:** 0 to 65535.
CREATECLONETIME	Mandatory	string(uint64)	Time when clone is created.
CLONESOURCENAME	Mandatory	string	Clone source object name.
CLONESOURCETYPE	Mandatory	string(enum)	Clone source type. **The value is described as follows:** 1: LUN 2: snapshot
ENABLEDEDUP	Mandatory	string(bool)	Deduplication enabled or not. **The value is described as follows:** false: disabled true: enabled

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Parameter	Mandatory/ Conditional	Type	Description
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0:false;1:true
grainSize	Mandatory	uint32	Grain size of a thin LUN. **The value is described as follows:** 4KB 8KB 16KB 32KB 64KB

Example

- Querying basic information about LUN clones.

```
Request: GET /deviceManager/rest/210235843710E7000007/lun/0?ISCLONE=true
Response:
{
   "data": [
      {
         "ALLOCCAPACITY": "0",
         "ALLOCTYPE": "1",
         "CAPACITY": "409600",
         "CLONESOURCEID": "0",
         "CLONESOURCENAME": "lun0000",
         "CLONESOURCETYPE": "1",
         "COMPRESSION": "0",
         "COMPRESSIONSAVEDCAPACITY": "0",
         "COMPRESSIONSAVEDRATIO": "0",
         "CREATECLONETIME": "1567865993",
         "DEDUPSAVEDCAPACITY": "0",
         "DEDUPSAVEDRATIO": "0",
         "DESCRIPTION": "",
         "DISGUISEREMOTEARRAYID": "--",
         "DRS_ENABLE": "false",
         "ENABLECOMPRESSION": "true",
         "ENABLEISCSITHINLUNTHRESHOLD": "false",
         "ENABLESMARTDEDUP": "true",
         "EXPOSEDTOINITIATOR": "false",
         "EXTENDIFSWITCH": "false",
         "HASRSSOBJECT": "{\"SnapShot\":\"FALSE\",\"LunCopy\":\"FALSE\",\"RemoteReplication
\":\"FALSE\",\"SplitMirror\":\"FALSE\",\"LunMigration\":\"FALSE\",\"LUNMirror\":\"FALSE
\",\"HyperMetro\":\"FALSE\",\"LunClone\":\"FALSE\",\"HyperCopy\":\"FALSE\",\"HyperCDP\":\"FALSE
\",\"CloudBackup\":\"FALSE\"}",
         "HEALTHSTATUS": "1",
         "ID": "350",
         "IOCLASSID": "",
         "IOPRIORITY": "1",
         "ISADD2LUNGROUP": "false",
         "ISCHECKZEROPAGE": "false",
         "ISCLONE": "true",
         "ISCSITHINLUNTHRESHOLD": "90",
         "MIRRORPOLICY": "1",
         "MIRRORTYPE": "0",
         "NAME": "clone",
         "OWNINGCONTROLLER": "--",
```

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```
            "PARENTID": "0",
            "PARENTNAME": "pool",
            "PREFETCHPOLICY": "0",
            "PREFETCHVALUE": "0",
            "REMOTELUNID": "--",
            "REPLICATION_CAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "RUNNINGWRITEPOLICY": "1",
            "SECTORSIZE": "512",
            "SPLITENDTIME": "-1",
            "SPLITRATE": "0",
            "SPLITSPEED": "2",
            "SPLITSTARTTIME": "1567865993",
            "SPLITSTATUS": "0",
            "SUBTYPE": "0",
            "TOTALSAVEDCAPACITY": "0",
            "TOTALSAVEDRATIO": "0",
            "TYPE": 11,
            "USAGETYPE": "0",
            "WORKLOADTYPENAME": "",
            "WRITEPOLICY": "1",
            "WWN": "654899810075cd6e002cbcef0000015e",
            "remoteLunWwn": "--",
            "takeOverLunWwn": "--",
            "isShowDedupAndCompression": "false",
            "grainSize": "16"
        }
    ],
    "error":
    {
        "code": 0,
        "description": "0"
    }
}
```


2.7.2.4.16 (Not Recommended) Interface for Querying the Number of LUN Clones

Function

This interface is used to query the number of LUN clones (you are advised to use Interface for Querying the Number of Clone Pairs instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISCLONE	Mandatory	bool	Is clone or not. **The value is described as follows:** true: yes

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, CLONESOURCENAME, CLONESOURCEID, CLONESOURCETYPE,HEALTHSTATUS, RUNNINGSTATUS, SPLITSTATUS, ALLOCTYPE, PARENTID, CAPACITY, ISADD2LUNGROUP, OWNINGCONTROLLER and WWN are supported. NINGCONTROLLER and WWN must be queried precisely.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried LUN clones.

Example

- Querying the number of LUN clones.

```
Request: GET/deviceManager/rest/210235843910E6000009/lun/count?ISCLONE=true

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.7.2.4.17 (Not Recommended) Interface for Querying the Number of LUN Consistency Groups

Function

This interface is used to query the number of LUN consistency groups (you are advised to use Interface for Querying the Number of Protection Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN_CONSISTENCY_GROUP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filtering criteria. **The value is described as follows:** Query by specifying NAME and ID is supported.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string	Number of LUN consistency groups to be queried according to the filtering criteria.

Example

- Querying the number of LUN consistency groups.

```
Request: GET /deviceManager/rest/20140729a5s4d54s4w12/LUN_CONSISTENCY_GROUP/count
Response:
{
   "data": {
      "COUNT": "2"
   },
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.7.2.5 Others

2.7.2.5.1 Interface for Expanding a LUN

Function

This interface is used to expand a LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun/expand

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
CAPACITY	Conditional	uint64	Expanded capacity. **Note:**This parameter is unavailable when an eDevLUN is to be expanded but is mandatory when a traditional LUN is to be expanded.
ID	Mandatory	string	LUN ID.
SUBTYPE	Optional	uint32	Subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN

Result

N/A

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Usage Guidelines

If remote replication or HyperMetro is configured for the LUN, ensure that all remote replication or HyperMetro relationships of the LUN are expanded. Otherwise, remote replication or HyperMetro services will be interrupted.

Example

- Expanding a LUN.

```
Request: PUT /deviceManager/rest/210235843710E7000007/lun/expand
{
   "CAPACITY": 4194304,
   "ID": "65"
}
Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.3 mapping_view

2.7.3.1 Add

2.7.3.1.1 Interface for Batch Creating Mappings

Function

This interface is used to batch create mappings.

URL

https://${ip}:${port}/api/v2/mapping/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hostId	Conditional	uint32	Host ID. **The value is described as follows:** 0..24575 **Note:**Host ID.

Parameter	Mandatory/Optional/Conditional	Type	Description
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0..65535 **Note:**LUN ID.
portGroupId	Optional	uint32	Port group ID. **The value is described as follows:** 0..4095 **Note:**Port group ID.
hostLunIdStart	Optional	uint32	Start value of the host LUN ID. **The value is described as follows:** 0..4095 **Note:**Only one hostLunIdStart can be carried each time the interface is invoked.
hostName	Conditional	string	Host name. **Length:**1~255 **Note:**Host name.
lunName	Conditional	string	LUN name. **Length:**1~255 **Note:**LUN name.
portGroupName	Optional	string	Port group name. **Length:**1~255 **Note:**Port group name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
assoMetaData	Optional	string(array)	Associated metadata. **The value is described as follows:** JSON parameters lunId Description: LUN ID Value type: string (number) Condition: mandatory hostLunId Description: host LUN ID Value type: string (number) Condition: mandatory
force	Optional	bool	Whether to perform a consistency check for HyperMetro host LUN IDs. **The value is described as follows:** true: no. false: yes.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping
ID	Mandatory	string	Mapping ID.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
NAME	Mandatory	string	Mapping name.
lunName	Mandatory	string	LUN name.
lunId	Mandatory	string	LUN ID.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Batch creating mappings.

```
Request: POST /api/v2/mapping/batch
[{
   "lunId":"0",
   "hostId":"0"
},
{
   "lunId":"1",
   "hostId":"0"
}]

Response:
{
   "data": [
      {
         "ENABLEINBANDCOMMAND": "false",
         "ID": "6",
         "NAME": "map_1627610144323168_idx1",
         "lunId": "37",
         "lunName": "lt1",
         "vstoreId": "6",
         "vstoreName": "tq",
         "TYPE": 245,
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ENABLEINBANDCOMMAND": "false",
         "ID": "6",
         "NAME": "map_1627610144323168_idx1",
         "lunId": "38",
```

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```
            "lunName": "lt2",
            "vstoreId": "6",
            "vstoreName": "tq",
            "TYPE": 245,
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Create mappings of vStore "6" in batches.

```
Request: POST /api/v2/mapping/batch
[{
    "lunId":"37",
    "hostId":"9",
    "vstoreId":"6"
},
{
    "lunId":"38",
    "hostId":"9",
    "vstoreId":"6"
}]

Response:
{
    "data": [
        {
            "ENABLEINBANDCOMMAND": "false",
            "ID": "2",
            "NAME": "map_1627609501501475_idx1",
            "lunId": "37",
            "lunName": "lt1",
            "vstoreId": "6",
            "vstoreName": "tq",
            "TYPE": 245,
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ENABLEINBANDCOMMAND": "false",
            "ID": "2",
            "NAME": "map_1627609501501475_idx1",
            "lunId": "38",
            "lunName": "lt2",
            "vstoreId": "6",
            "vstoreName": "tq",
            "TYPE": 245,
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.3.1.2 Interface for Creating a Mapping

Function

This interface is used to create a mapping.

URL

https://${ip}:${port}/api/v2/mapping

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0..8191 **Note:**Host group ID.
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0..16383 **Note:**LUN group ID.
hostId	Conditional	uint32	Host ID. **The value is described as follows:** 0..8191 **Note:**Host ID.
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0..65535 **Note:**LUN ID.
portGroupId	Optional	uint32	Port group ID. **The value is described as follows:** 0..4095 **Note:**Port group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
hostLunIdStart	Optional	uint32	Start value of the host LUN ID. **The value is described as follows:** 0..4095 **Note:**Start value of the host LUN ID.
hostGroupName	Conditional	string	Host group name. **Length:**1~255 **Note:**Host group name.
lunGroupName	Conditional	string	LUN group name. **Length:**1~255 **Note:**LUN group name.
hostName	Conditional	string	Host name. **Length:**1~255 **Note:**Host name.
lunName	Conditional	string	LUN name. **Length:**1~255 **Note:**LUN name.
portGroupName	Optional	string	Port group name. **Length:**1~255 **Note:**Port group name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
assoMetaData	Optional	string(array)	Associated metadata. **The value is described as follows:** JSON parameters lunId Description: LUN ID Value type: string (number) Condition: mandatory hostLunId Description: host LUN ID Value type: string (number) Condition: mandatory
force	Optional	bool	Whether to perform a consistency check for HyperMetro host LUN IDs. **The value is described as follows:** true: no. false: yes.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping
ID	Mandatory	string	Mapping ID.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
AVAILABLEHOSTLU-NIDLIST	Mandatory	array	List of available host LUN IDs.
INBANDLUNWWN	Mandatory	string	World wide name (WWN) of the command device.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Creating a mapping.

```
Request: POST /api/v2/mapping
{
    "hostGroupId": "0",
    "lunGroupId": "9",
    "portGroupId": "5"
}

Response:
{
    "data": {
        "NAME": "map_1627547862208082_idx1",
        "TYPE": 245,
        "AVAILABLEHOSTLUNIDLIST":
"[0,1,2,3,4,5,6,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,4
```

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        "ID": "19",
        "ENABLEINBANDCOMMAND": "0",
        "vstoreId": "6",
        "vstoreName": "tq",
        "DESCRIPTION": "",
        "INBANDLUNWWN": ""
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}

2.7.3.1.3 (Not Recommended)Interface for Creating a Mapping

Function

This interface is used to create a mapping (This interface is inherited from earlier versions and is not recommended in this version. Interface for Creating a Mapping is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Mapping view name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~63
ID	Optional	string	ID of a mapping view.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping view
ID	Mandatory	string	ID of a mapping view.
NAME	Mandatory	string	Mapping view name.
DESCRIPTION	Mandatory	string	Description.
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
AVAILABLEHOSTLU-NIDLIST	Mandatory	array	List of available host LUN IDs.
INBANDLUNWWN	Mandatory	string	WWN of the command device.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Creating a mapping.

```
Request: POST /deviceManager/rest/sn123456780123456789/mappingview
{
   "NAME": "mp2"
}

Response:
{
   "data": {
      "AVAILABLEHOSTLUNIDLIST":
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        "DESCRIPTION": "",
        "ENABLEINBANDCOMMAND": "false",
        "ID": "6",
        "INBANDLUNWWN": "",
        "NAME": "mp2",
        "TYPE": 245,
        "vstoreId": "3",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"

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```
  }
}
```

2.7.3.1.4 (Not Recommended)Interface for Creating a Mapping Association

Function

This interface is used to create a mapping association (This interface is inherited from earlier versions and is not recommended in this version. Interface for Creating a Mapping is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/create_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping view ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 14: host group 256: LUN group 257: port group **Note:**Only after host groups are associated, LUN groups or port groups can be associated.
ASSOCIATEOBJID	Mandatory	string	ID of the associated host group, LUN group, or port group.
HOSTLUNID	Optional	string	Start value of the host LUN ID. **Length:**0~4095
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

N/A

Example

- Creating a mapping association.

```
Request: PUT /deviceManager/rest/210235843710E7000007/mappingview/create_associate
{
    "ASSOCIATEOBJTYPE": 14,
    "ASSOCIATEOBJID": "1",
    "ID": "3"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Create a mapping view association of tenant "3".

```
Request: PUT/deviceManager/rest/sn123456780123456789/mappingview/create_associate
{
    "ASSOCIATEOBJTYPE": 14,
    "ASSOCIATEOBJID": "0",
    "ID": "5",
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.2 Delete

2.7.3.2.1 Interface for Deleting a Mapping

Function

This interface is used to delete a mapping.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping?hostId=xx&lunId=xx

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping?hostName=xx&lunName=xx

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping?hostGroupId=xx&lunGroupId=xx

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping?hostGroupName=xx&lunGroupName=xx

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Access Method

DELETE

DELETE

DELETE

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hostId	Conditional	uint32	Host ID. **The value is described as follows:** 0 to 8191. **Note:**Host ID.
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0 to 65535. **Note:**LUN ID.
hostName	Conditional	string	Host name. **Length:**1~31 **Note:**Host name.
lunName	Conditional	string	LUN name. **Length:**1~31 **Note:**LUN name.
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0 to 8191. **Note:**Host group ID.
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0 to 16383. **Note:**LUN group ID.
hostGroupName	Conditional	string	Host group name. **Length:**1~31 **Note:**Host group name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
lunGroupName	Conditional	string	LUN group name. **Length:**1~31 **Note:**LUN group name.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Delete a mapping view.

```
Request: DELETE /deviceManager/rest/ST000000000000000100/mapping
{
    "hostGroupId":0,
    "lunGroupId":0
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete a mapping view as vStore 3.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/mapping
{
    "hostGroupId":0,
    "lunGroupId":0,
    "vstoreId":"0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete a mapping view.

```
Request: DELETE /deviceManager/rest/ST000000000000000100/mapping
{
    "hostGroupName":"HostGroupTest",
    "lunGroupName":"LunGroupTest"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.2.2 (Not Recommended)Interface for Deleting a Mapping Association

Function

This interface is used to delete a mapping view association (This interface is inherited from earlier versions and is not recommended in this version. Interface for Deleting a Mapping is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/remove_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping view ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 14: host group 256: LUN group 257: port group **Note:**Only when associated host groups exist, associated LUN groups or port groups can be deleted.
ASSOCIATEOBJID	Mandatory	string	ID of the associated host group, LUN group, or port group.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting a mapping view association.

```
Request: PUT /deviceManager/rest/210235843710E7000007/mappingview/remove_associate
{
    "ID": "2",
    "ASSOCIATEOBJTYPE": 256,
    "ASSOCIATEOBJID": "4"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete the mapping view association of the tenant whose ID is 3.

```
Request: PUT /deviceManager/rest/sn123456780123456789/mappingview/remove_associate
{
    "ASSOCIATEOBJTYPE": 14,
    "ASSOCIATEOBJID": "0",
    "ID": "5",
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.2.3 (Not Recommended)Interface for Deleting Mapping

Function

This interface is used to delete a mapping view (This interface is inherited from earlier versions and is not recommended in this version. Interface for Deleting a Mapping is recommended.).

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping view ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Delete a mapping view.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/mappingview
{
    "ID":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete a mapping view as vStore 3.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/mappingview
{
    "ID":"2",
    "vstoreId":"3"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.3.3 Modify

2.7.3.3.1 Interface for Modifying a Mapping

Function

This interface is used to modify the port group of a mapping, including changing the port group ID and removing the port group from the mapping.

URL

https://${ip}:${port}/api/v2/mapping

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hostId	Conditional	uint32	Host ID. **The value is described as follows:** 0 to 8191. **Note:**None.
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0 to 65535. **Note:**None.
portGroupId	Conditional	uint32	Port group ID. **The value is described as follows:** 0 to 4095. **Note:**None.
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0 to 8191. **Note:**None.

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Parameter	Mandatory/Optional/Conditional	Type	Description
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0 to 16383. **Note:**None.
hostName	Conditional	string	Host name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**None.
lunName	Conditional	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**None.
portGroupName	Conditional	string	Port group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**None.

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Parameter	Mandatory/Optional/Conditional	Type	Description
hostGroupName	Conditional	string	Host group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**None.
lunGroupName	Conditional	string	LUN group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**None.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying the port group in the mapping of the host group and LUN group.

```
Request: PUT /api/v2/mapping
{
    "hostGroupId": "0",
    "lunGroupId": "0" ,
    "portGroupId": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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- Modify the port group in the mapping formed by the host group and LUN group as vStore 3.

```
Request: PUT /api/v2/mapping
{
    "hostGroupId": "0",
    "lunGroupId": "3" ,
    "portGroupId": "7",
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying the port group in the mapping of the host group and LUN group by specifying the names.

```
Request: PUT /api/v2/mapping
{
    "hostGroupName": "name",
    "lunGroupName": "name" ,
    "portGroupName": "newName"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying the port group in the mapping of the host and LUN group.

```
Request: PUT /api/v2/mapping
{
    "hostId": "0",
    "lunGroupId": "0" ,
    "portGroupId": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying the port group in the mapping of the host and LUN group by specifying the names.

```
Request: PUT /api/v2/mapping
{
    "hostName": "name",
    "lunGroupName": "name" ,
    "portGroupName": ""
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
```

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```
        "description": "0"
    }
}
```

- Removing a port group from the mapping.

```
Request: PUT /api/v2/mapping
{
    "hostId": "0",
    "lunGroupId": "0" ,
    "portGroupId": ""
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.3.2 (Not Recommended)Interface for Modifying Mapping Information

Function

This interface is used to modify mapping views (This interface is inherited from earlier versions and is not recommended in this version. Interface for Modifying a Mapping is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping view ID.
NAME	Optional	string	Name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~63

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEINBANDCOM-MAND	Optional	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying mapping views.

```
Request: PUT /deviceManager/rest/210235843710E7000007/mappingview/1
{
   "ENABLEINBANDCOMMAND": "true"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
   "description": "0"
   }
}
```

- Modify the mapping view of the tenant whose ID is 3.

```
Request: PUT /deviceManager/rest/sn123456780123456789/mappingview/5
{
   "ENABLEINBANDCOMMAND": "true",
   "vstoreId":"3"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.3.4 Query

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2.7.3.4.1 Interface for Querying Associated Mappings

Function

This interface is used to query associated mappings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 14: host group 21: host 256: LUN group
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN, host group, host, or LUN group.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 12345: Mapping
ID	Mandatory	string	Mapping ID.
NAME	Mandatory	string	Mapping name.
hostId	Mandatory	uint32	Host ID.
hostName	Mandatory	string	Host name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
lunId	Mandatory	uint32	LUN ID. **The value is described as follows:** 0..65535
lunName	Mandatory	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
hostGroupId	Mandatory	uint32	Host group ID. **The value is described as follows:** 0..8191

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Parameter	Mandatory/ Conditional	Type	Description
hostGroupName	Mandatory	string	Host group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
lunGroupId	Mandatory	uint32	LUN group ID. **The value is described as follows:** 0..16383
lunGroupName	Mandatory	string	LUN group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
portGroupId	Mandatory	uint32	Port group ID. **The value is described as follows:** 0..4095
portGroupName	Mandatory	string	Port group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
mappingType	Mandatory	string(enum)	Mapping type. **The value is described as follows:** 0: unmapped 1: host 2: host group 3: LUN 4: LUN group

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Querying associated mappings.

```
Request: GET  /deviceManager/rest/sn123456780123456789/mapping/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=0&range=[0-100]

Response:
{
   "data": [
      {
         "ID": "0",
         "hostGroupName": "hg1",
         "hostName": "",
         "NAME": "map_1626922989653287_idx1",
         "lunId": "",
         "lunName": "",
         "lunGroupId": "3",
         "lunGroupName": "lg4",
         "mappingType": "2",
         "hostGroupId": "0",
         "portGroupId": "",
         "vstoreId": "3",
         "vstoreName": "tq",
         "portGroupName": "",
         "hostId": "",
         "TYPE": 12345
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the mapping of the tenant whose D is 3.

```
Request: GET  /deviceManager/rest/sn123456780123456789/mapping/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=0&range=[0-100]&vstoreId=3

Response:
{
   "data": [
      {
         "ID": "0",
         "hostGroupName": "hg1",
         "hostName": "",
         "NAME": "map_1626922989653287_idx1",
         "lunId": "",
         "lunName": "",
         "lunGroupId": "3",
         "lunGroupName": "lg4",
         "mappingType": "2",
         "hostGroupId": "0",
         "portGroupId": "",
```

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```
            "vstoreId": "3",
            "vstoreName": "tq",
            "portGroupName": "",
            "hostId": "",
            "TYPE": 12345
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.3.4.2 Interface for Querying Mapping Information

Function

This interface is used to query basic mapping information.

URL

https://${ip}:${port}/api/v2/mapping?hostId=xx&lunId=xx&portGroupId=xx

https://${ip}:${port}/api/v2/mapping?
hostName=xx&lunName=xx&portGroupName=xx

https://${ip}:${port}/api/v2/mapping?
hostGroupId=xx&lunGroupId=xx&portGroupId=xx

https://${ip}:${port}/api/v2/mapping?
hostGroupName=xx&lunGroupName=xx&portGroupName=xx

Access Method

GET

GET

GET

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hostId	Conditional	uint32	Host ID. **Note:**Host ID.
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0..65535 **Note:**LUN ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
portGroupId	Optional	uint32	Port group ID. **The value is described as follows:** 0..4095
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0..8191 **Note:**Host group ID.
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0..16383 **Note:**LUN group ID.
hostName	Conditional	string	Host name. **Length:**1~255 **Note:**Host name.
lunName	Conditional	string	LUN name. **Length:**1~255 **Note:**LUN name.
portGroupName	Optional	string	Port group name. **Length:**1~255
hostGroupName	Conditional	string	Host group name. **Length:**1~255 **Note:**Host group name.
lunGroupName	Conditional	string	LUN group name. **Length:**1~255 **Note:**LUN group name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
relationType	Optional	string(enum)	Mapping type. **The value is described as follows:** 0: not mapped 1: mapping between a host group and a LUN group 2: mapping between a host and a LUN group 3: mapping between a host and a LUN
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 12345: mapping
hostId	Conditional	uint32	Host ID.
hostName	Conditional	string	Host name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
lunId	Conditional	uint32	LUN ID. **The value is described as follows:** 0..65535

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Parameter	Mandatory/ Conditional	Type	Description
lunName	Conditional	string	LUN name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0..8191
hostGroupName	Conditional	string	Host group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0..16383
lunGroupName	Conditional	string	LUN group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
portGroupId	Conditional	uint32	Port group ID. **The value is described as follows:** 0..4095

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Parameter	Mandatory/ Conditional	Type	Description
portGroupName	Conditional	string	Port group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
vstoreName	Mandatory	string	vStore name.
vstoreId	Mandatory	string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Example

- Querying mapping information with filtering rules.

```
Request: GET /api/v2/mapping?hostId=0&lunId=6

Response:
{
   "data": {
      "lunId": "6",
      "lunName": "lt1",
      "hostId": "0",
      "hostName": "ht1",
      "portGroupId": "",
      "portGroupName": "",
      "vstoreId": "6",
      "vstoreName": "tq",
      "TYPE": 12345
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the mapping of the tenant whose ID is 6 with filtering.

```
Request: GET /api/v2/mapping?hostId=0&lunId=6&vstoreId=6

Response:
{
   "data": {
      "lunId": "6",
      "lunName": "lt1",
      "hostId": "0",
      "hostName": "ht1",
      "portGroupId": "",
      "portGroupName": "",
      "vstoreId": "6",
      "vstoreName": "tq",
      "TYPE": 12345
   },
   "error": {
```

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```
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.4.3 Interface for Querying the Maximum Range of a Host LUN ID

Function

This interface is used to query the maximum range of a host LUN ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_host_lun_max_id

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
MAXSIZE	Mandatory	string(uint32)	Maximum number of host LUN IDs.

Example

- Querying the maximum range of a host LUN ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/get_host_lun_max_id

Response: {
    "data": {
        "MAXSIZE": "4096"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.4.4 Interface for Querying the Number of Associated Mapping Views

Function

This interface is used to query the number of associated mapping views.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	ID of the associated LUN, host group, host, or LUN group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11: LUN 14: host group 21: host 256: LUN group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried mapping views.

Example

- Querying the number of associated mapping views.

  ```
  Request: GET /deviceManager/rest/sn123456780123456789/mappingview/count?
  ASSOCIATEOBJTYPE=256&ASSOCIATEOBJID=0
  ```

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```
Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of associated mapping views as vStore 3.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview/count?
ASSOCIATEOBJTYPE=256&ASSOCIATEOBJID=0&vstoreId=3

Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.3.4.5 Interface for Querying the Number of Mapping Views

Function

This interface is used to query the number of mapping views.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mapping/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	Associated object ID, such as the host group ID and LUN group ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11: LUN 14: host group 21: host 256: LUN group 257: port group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried mapping views.

Example

- Querying the number of mapping views.

```
Request: GET /deviceManager/rest/210235843910E6000009/mapping/count

Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of mapping views as vStore 3.

```
Request: GET /deviceManager/rest/210235843910E6000009/mapping/count?vstoreId=3

Response:
{
   "data": {
      "COUNT": "0"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.4.6 (Not Recommended)Interface for Batch Querying Mapping Information

Function

This interface is used to batch query basic information about mapping views (This interface is inherited from earlier versions and is not recommended in this version. Interface for Querying Associated Mappings is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	The following fields are supported: NAME, hostName, lunGroupName, portGroupName, and hostGroupName.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping view
ID	Mandatory	string	ID of a mapping view.
NAME	Mandatory	string	Mapping view name.
DESCRIPTION	Mandatory	string	Description.
INBANDLUNWWN	Mandatory	string	Command device WWN.
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
hostId	Conditional	integer	Indicates the host ID. **The value is described as follows:** 0 to 24575
hostName	Conditional	string	Host name.
hostGroupId	Conditional	integer	Indicates the host group ID. **The value is described as follows:** 0 to 8191
hostGroupName	Conditional	string	Host group name.

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Parameter	Mandatory/ Conditional	Type	Description
portGroupId	Conditional	integer	Port group ID. **The value is described as follows:** 0 to 4095
portGroupName	Conditional	string	Indicates the name of a port group.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying basic information about mapping views.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview?range=[0-100]

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ENABLEINBANDCOMMAND": "false",
         "ID": "0",
         "INBANDLUNWWN": "",
         "NAME": "map_1626918647082700_idx1",
         "TYPE": 245,
         "hostGroupId": "0",
         "hostGroupName": "hg1",
         "hostName": "",
         "lunGroupId": "3",
         "lunGroupName": "lg4",
         "portGroupId": "7",
         "portGroupName": "pgt2",
         "vstoreId": "3",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the basic information about mapping views of tenant "3" in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview?range=[0-100]&vstoreId=3

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ENABLEINBANDCOMMAND": "false",
         "ID": "0",
         "INBANDLUNWWN": "",
```

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```
            "NAME": "map_1626918647082700_idx1",
            "TYPE": 245,
            "hostGroupId": "0",
            "hostGroupName": "hg1",
            "hostName": "",
            "lunGroupId": "3",
            "lunGroupName": "lg4",
            "portGroupId": "7",
            "portGroupName": "pgt2",
            "vstoreId": "3",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.3.4.7 (Not Recommended)Interface for Implementing Associated Query of Mapping Information

Function

This interface is used to implement associated query of mapping view information (This interface is inherited from earlier versions and is not recommended in this version. Interface for Querying Associated Mappings is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 14: host group 27: snapshot 256: LUN group 257: port group
ASSOCIATEOBJID	Mandatory	string	Associated object ID, such as LUN ID and host group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of a mapping view.
DESCRIPTION	Mandatory	string	Description.
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping view
NAME	Mandatory	string	Mapping view name.

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Parameter	Mandatory/ Conditional	Type	Description
hostName	Conditional	string	Host name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
hostGroupId	Conditional	uint32	Host group ID. **The value is described as follows:** 0..8191 **Note:**The output is displayed only when "hostGroupName" is set.
hostGroupName	Conditional	string	Host group name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
lunGroupId	Conditional	uint32	LUN group ID. **The value is described as follows:** 0..16383 **Note:**The output is displayed only when "lunGroupName" is set.
lunGroupName	Conditional	string	LUN group name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
portGroupId	Conditional	uint32	Port group ID. **The value is described as follows:** 0..4095 **Note:**The output is displayed only when "portGroupName" is set.
portGroupName	Conditional	string	Port group name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Implementing associated query of mapping view information.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=1

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ENABLEINBANDCOMMAND": "false",
         "ID": "2",
         "NAME": "mpt1",
         "TYPE": 245,
         "hostGroupId": "1",
         "hostGroupName": "hgt1",
         "hostName": "",
         "lunGroupId": "2",
         "lunGroupName": "lgt1",
         "portGroupId": "1",
         "portGroupName": "pgt1",
         "vstoreId": "4",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

- Query the mapping view associated with the tenant whose ID is 4.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=1&vstoreId=4

Response:
{
    "data": [
        {
            "DESCRIPTION": "",
            "ENABLEINBANDCOMMAND": "false",
            "ID": "2",
            "NAME": "mpt1",
            "TYPE": 245,
            "hostGroupId": "1",
            "hostGroupName": "hgt1",
            "hostName": "",
            "lunGroupId": "2",
            "lunGroupName": "lgt1",
            "portGroupId": "1",
            "portGroupName": "pgt1",
            "vstoreId": "4",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.3.4.8 (Not Recommended)Interface for Querying Mapping Information

Function

This interface is used to query basic information about mapping views (This interface is inherited from earlier versions and is not recommended in this version. Interface for Querying Mapping Information is recommended).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping view ID.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping view
ID	Mandatory	string	Object ID, saving the port IQN.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
ENABLEINBANDCOM-MAND	Mandatory	string(bool)	Indicates whether the command device is enabled. **The value is described as follows:** false: no true: yes
INBANDLUNWWN	Mandatory	string	Command device WWN.
AVAILABLEHOSTLU-NIDLIST	Mandatory	array	List of available host LUN IDs.
vstoreId	Mandatory	string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	Tenant name.

Example

- Querying basic information about mapping views.

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview/0

Response:
{
    "data": {
        "AVAILABLEHOSTLUNIDLIST":
"[0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,
38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,7
2,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104
,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,1
29,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,15
```

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3,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,
178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,2
02,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,22
6,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,
251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,2
75,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,29
9,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,
324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,3
48,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,37
2,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,
397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,4
21,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,44
5,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,
470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,4
94,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,51
8,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,
543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,5
67,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,59
1,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,
616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,6
40,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,66
4,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,
689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,7
13,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,73
7,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,
762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,7
86,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,81
0,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,
835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,8
59,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,88
3,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,
908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,9
32,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,95
6,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,
981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000,1001,1002,1003,1
004,1005,1006,1007,1008,1009,1010,1011,1012,1013,1014,1015,1016,1017,1018,1019,1020,1021,1022,
1023,1024,1025,1026,1027,1028,1029,1030,1031,1032,1033,1034,1035,1036,1037,1038,1039,1040,1041
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79,1080,1081,1082,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1
098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1109,1110,1111,1112,1113,1114,1115,1116,
1117,1118,1119,1120,1121,1122,1123,1124,1125,1126,1127,1128,1129,1130,1131,1132,1133,1134,1135
,1136,1137,1138,1139,1140,1141,1142,1143,1144,1145,1146,1147,1148,1149,1150,1151,1152,1153,115
4,1155,1156,1157,1158,1159,1160,1161,1162,1163,1164,1165,1166,1167,1168,1169,1170,1171,1172,11
73,1174,1175,1176,1177,1178,1179,1180,1181,1182,1183,1184,1185,1186,1187,1188,1189,1190,1191,1
192,1193,1194,1195,1196,1197,1198,1199,1200,1201,1202,1203,1204,1205,1206,1207,1208,1209,1210,
1211,1212,1213,1214,1215,1216,1217,1218,1219,1220,1221,1222,1223,1224,1225,1226,1227,1228,1229
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8,1249,1250,1251,1252,1253,1254,1255,1256,1257,1258,1259,1260,1261,1262,1263,1264,1265,1266,12
67,1268,1269,1270,1271,1272,1273,1274,1275,1276,1277,1278,1279,1280,1281,1282,1283,1284,1285,1
286,1287,1288,1289,1290,1291,1292,1293,1294,1295,1296,1297,1298,1299,1300,1301,1302,1303,1304,
1305,1306,1307,1308,1309,1310,1311,1312,1313,1314,1315,1316,1317,1318,1319,1320,1321,1322,1323
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61,1362,1363,1364,1365,1366,1367,1368,1369,1370,1371,1372,1373,1374,1375,1376,1377,1378,1379,1
380,1381,1382,1383,1384,1385,1386,1387,1388,1389,1390,1391,1392,1393,1394,1395,1396,1397,1398,
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55,1456,1457,1458,1459,1460,1461,1462,1463,1464,1465,1466,1467,1468,1469,1470,1471,1472,1473,1
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1493,1494,1495,1496,1497,1498,1499,1500,1501,1502,1503,1504,1505,1506,1507,1508,1509,1510,1511
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1587,1588,1589,1590,1591,1592,1593,1594,1595,1596,1597,1598,1599,1600,1601,1602,1603,1604,1605
,1606,1607,1608,1609,1610,1611,1612,1613,1614,1615,1616,1617,1618,1619,1620,1621,1622,1623,162
4,1625,1626,1627,1628,1629,1630,1631,1632,1633,1634,1635,1636,1637,1638,1639,1640,1641,1642,16

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43,1644,1645,1646,1647,1648,1649,1650,1651,1652,1653,1654,1655,1656,1657,1658,1659,1660,1661,1
662,1663,1664,1665,1666,1667,1668,1669,1670,1671,1672,1673,1674,1675,1676,1677,1678,1679,1680,
1681,1682,1683,1684,1685,1686,1687,1688,1689,1690,1691,1692,1693,1694,1695,1696,1697,1698,1699
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37,1738,1739,1740,1741,1742,1743,1744,1745,1746,1747,1748,1749,1750,1751,1752,1753,1754,1755,1
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1775,1776,1777,1778,1779,1780,1781,1782,1783,1784,1785,1786,1787,1788,1789,1790,1791,1792,1793
,1794,1795,1796,1797,1798,1799,1800,1801,1802,1803,1804,1805,1806,1807,1808,1809,1810,1811,181
2,1813,1814,1815,1816,1817,1818,1819,1820,1821,1822,1823,1824,1825,1826,1827,1828,1829,1830,18
31,1832,1833,1834,1835,1836,1837,1838,1839,1840,1841,1842,1843,1844,1845,1846,1847,1848,1849,1
850,1851,1852,1853,1854,1855,1856,1857,1858,1859,1860,1861,1862,1863,1864,1865,1866,1867,1868,
1869,1870,1871,1872,1873,1874,1875,1876,1877,1878,1879,1880,1881,1882,1883,1884,1885,1886,1887
,1888,1889,1890,1891,1892,1893,1894,1895,1896,1897,1898,1899,1900,1901,1902,1903,1904,1905,190
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6,3317,3318,3319,3320,3321,3322,3323,3324,3325,3326,3327,3328,3329,3330,3331,3332,3333,3334,33
35,3336,3337,3338,3339,3340,3341,3342,3343,3344,3345,3346,3347,3348,3349,3350,3351,3352,3353,3
354,3355,3356,3357,3358,3359,3360,3361,3362,3363,3364,3365,3366,3367,3368,3369,3370,3371,3372,
3373,3374,3375,3376,3377,3378,3379,3380,3381,3382,3383,3384,3385,3386,3387,3388,3389,3390,3391
,3392,3393,3394,3395,3396,3397,3398,3399,3400,3401,3402,3403,3404,3405,3406,3407,3408,3409,341
0,3411,3412,3413,3414,3415,3416,3417,3418,3419,3420,3421,3422,3423,3424,3425,3426,3427,3428,34
29,3430,3431,3432,3433,3434,3435,3436,3437,3438,3439,3440,3441,3442,3443,3444,3445,3446,3447,3
448,3449,3450,3451,3452,3453,3454,3455,3456,3457,3458,3459,3460,3461,3462,3463,3464,3465,3466,
3467,3468,3469,3470,3471,3472,3473,3474,3475,3476,3477,3478,3479,3480,3481,3482,3483,3484,3485
,3486,3487,3488,3489,3490,3491,3492,3493,3494,3495,3496,3497,3498,3499,3500,3501,3502,3503,350
4,3505,3506,3507,3508,3509,3510,3511,3512,3513,3514,3515,3516,3517,3518,3519,3520,3521,3522,35
23,3524,3525,3526,3527,3528,3529,3530,3531,3532,3533,3534,3535,3536,3537,3538,3539,3540,3541,3
542,3543,3544,3545,3546,3547,3548,3549,3550,3551,3552,3553,3554,3555,3556,3557,3558,3559,3560,
3561,3562,3563,3564,3565,3566,3567,3568,3569,3570,3571,3572,3573,3574,3575,3576,3577,3578,3579
,3580,3581,3582,3583,3584,3585,3586,3587,3588,3589,3590,3591,3592,3593,3594,3595,3596,3597,359
8,3599,3600,3601,3602,3603,3604,3605,3606,3607,3608,3609,3610,3611,3612,3613,3614,3615,3616,36
17,3618,3619,3620,3621,3622,3623,3624,3625,3626,3627,3628,3629,3630,3631,3632,3633,3634,3635,3
636,3637,3638,3639,3640,3641,3642,3643,3644,3645,3646,3647,3648,3649,3650,3651,3652,3653,3654,
3655,3656,3657,3658,3659,3660,3661,3662,3663,3664,3665,3666,3667,3668,3669,3670,3671,3672,3673
,3674,3675,3676,3677,3678,3679,3680,3681,3682,3683,3684,3685,3686,3687,3688,3689,3690,3691,369
2,3693,3694,3695,3696,3697,3698,3699,3700,3701,3702,3703,3704,3705,3706,3707,3708,3709,3710,37
11,3712,3713,3714,3715,3716,3717,3718,3719,3720,3721,3722,3723,3724,3725,3726,3727,3728,3729,3
730,3731,3732,3733,3734,3735,3736,3737,3738,3739,3740,3741,3742,3743,3744,3745,3746,3747,3748,
3749,3750,3751,3752,3753,3754,3755,3756,3757,3758,3759,3760,3761,3762,3763,3764,3765,3766,3767
,3768,3769,3770,3771,3772,3773,3774,3775,3776,3777,3778,3779,3780,3781,3782,3783,3784,3785,378
6,3787,3788,3789,3790,3791,3792,3793,3794,3795,3796,3797,3798,3799,3800,3801,3802,3803,3804,38
05,3806,3807,3808,3809,3810,3811,3812,3813,3814,3815,3816,3817,3818,3819,3820,3821,3822,3823,3
824,3825,3826,3827,3828,3829,3830,3831,3832,3833,3834,3835,3836,3837,3838,3839,3840,3841,3842,
3843,3844,3845,3846,3847,3848,3849,3850,3851,3852,3853,3854,3855,3856,3857,3858,3859,3860,3861
,3862,3863,3864,3865,3866,3867,3868,3869,3870,3871,3872,3873,3874,3875,3876,3877,3878,3879,388

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0,3881,3882,3883,3884,3885,3886,3887,3888,3889,3890,3891,3892,3893,3894,3895,3896,3897,3898,3899,3900,3901,3902,3903,3904,3905,3906,3907,3908,3909,3910,3911,3912,3913,3914,3915,3916,3917,3918,3919,3920,3921,3922,3923,3924,3925,3926,3927,3928,3929,3930,3931,3932,3933,3934,3935,3936,3937,3938,3939,3940,3941,3942,3943,3944,3945,3946,3947,3948,3949,3950,3951,3952,3953,3954,3955,3956,3957,3958,3959,3960,3961,3962,3963,3964,3965,3966,3967,3968,3969,3970,3971,3972,3973,3974,3975,3976,3977,3978,3979,3980,3981,3982,3983,3984,3985,3986,3987,3988,3989,3990,3991,3992,3993,3994,3995,3996,3997,3998,3999,4000,4001,4002,4003,4004,4005,4006,4007,4008,4009,4010,4011,4012,4013,4014,4015,4016,4017,4018,4019,4020,4021,4022,4023,4024,4025,4026,4027,4028,4029,4030,4031,4032,4033,4034,4035,4036,4037,4038,4039,4040,4041,4042,4043,4044,4045,4046,4047,4048,4049,4050,4051,4052,4053,4054,4055,4056,4057,4058,4059,4060,4061,4062,4063,4064,4065,4066,4067,4068,4069,4070,4071,4072,4073,4074,4075,4076,4077,4078,4079,4080,4081,4082,4083,4084,4085,4086,4087,4088,4089,4090,4091,4092,4093,4094,4095]",
        "DESCRIPTION": "",
        "ENABLEINBANDCOMMAND": "false",
        "ID": "5",
        "INBANDLUNWWN": "",
        "NAME": "mp1",
        "TYPE": 245,
        "vstoreId": "3",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}

2.7.3.4.9 (Not Recommended)Interface for Querying the Number of Mappings

Function

This interface is used to query the number of mapping views (This interface is inherited from earlier versions and is not recommended in this version. Interface for Querying Associated Mappings is recommended.).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/mappingview/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	ID of the associated host group, LUN group, or port group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 14: host group 256: LUN group 257: port group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried mapping views.

Example

- Querying the number of mapping views.

```
Request: GET /deviceManager/rest/210235843910E6000009/mappingview/count

Response: {
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Query the number of mapping views of vStore "3".

```
Request: GET /deviceManager/rest/sn123456780123456789/mappingview/count?vstoreId=3

Response:
{
    "data": {
        "COUNT": "5"
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.7.3.5 Others

2.7.4 host

2.7.4.1 Add

2.7.4.1.1 Interface for Creating a Host

Function

This interface is used to create a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Host name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
LOCATION	Optional	string	Location. **The value is described as follows:** - **Length:**0~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~63
OPERATIONSYSTEM	Mandatory	enum	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
ID	Optional	string	Host ID. **The value is described as follows:** -
NETWORKNAME	Optional	string	Host domain name. **The value is described as follows:** - **Length:**0~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
IP	Optional	string	IP address. **The value is described as follows:** - **Length:**0~63
MODEL	Optional	string	Host model. **The value is described as follows:** - **Length:**0~31
accessMode	Optional	enum	Host access mode. **The value is described as follows:** 0: balanced. 1: asymmetric.
hyperMetroPathOptimized		bool	Whether the host path to the local HyperMetro array is preferred. **The value is described as follows:** The value can be: 1: "Yes". 0: "No".
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 21: host

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Host ID. **The value is described as follows:** -
NAME	Mandatory	string	Host name. **The value is described as follows:** -
LOCATION	Mandatory	string	Location. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
DESCRIPTION	Mandatory	string	Description.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Host operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
NETWORKNAME	Mandatory	string	Host domain name. **The value is described as follows:** -
MODEL	Mandatory	string	Host model. **The value is described as follows:** -
IP	Mandatory	string	IP address. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ISADD2HOSTGROUP	Mandatory	string(bool)	Indicates whether the host has been added to a host group. **The value is described as follows:** true: yes false: no
INITIATORNUM	Mandatory	string(uint32)	Number of host initiators. **The value is described as follows:** -
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
capacity	Mandatory	uint64	Total capacity.
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
accessMode	Mandatory	enum	Host access mode. **The value is described as follows:** 0: balanced. 1: asymmetric.
hyperMetroPathOptimized	Conditional	bool	Whether the host path to the local HyperMetro array is preferred. **The value is described as follows:** 1: Yes 0: No **Note:**This field is returned if the value of accessMode is "1".
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Parameter	Mandatory/ Conditional	Type	Description
enableInbandCom-mand	Mandatory	string(bool)	Whether to enable the in-band command function. **The value is described as follows:**
enableSyncLunSn	Mandatory	string	Specifies whether to enable the SN consistency function. **The value is described as follows:** 0: The SN consistency function is disabled. 1: The SN consistency function is enabled.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a host.

```
Request: POST /deviceManager/rest/sn123456780123456789/host
{
   "DESCRIPTION": "host",
   "NAME": "host9",
   "OPERATIONSYSTEM": "9",
   "accessMode": "1",
   "hyperMetroPathOptimized" : "1"
}

Response:
{
   "data": {
      "DESCRIPTION": "host",
      "HEALTHSTATUS": "1",
      "ID": "9",
      "INITIATORNUM": "0",
      "IP": "",
      "ISADD2HOSTGROUP": "false",
      "LOCATION": "",
      "MODEL": "",
      "NAME": "host9",
      "NETWORKNAME": "",
      "OPERATIONSYSTEM": "9",
      "RUNNINGSTATUS": "1",
      "TYPE": 21,
      "accessMode": "1",
      "allocatedCapacity": "0",
      "capacity": "0",
      "enableInbandCommand": "false",
      "enableSyncLunSn": "0",
      "hyperMetroPathOptimized": "true",
      "mappingLunNumber": "0",
      "protectionCapacity": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Create a host as vStore 1.

```
Request: POST /deviceManager/rest/sn123456780123456789/host
{
    "DESCRIPTION": "host",
    "NAME": "host10",
    "OPERATIONSYSTEM": "9",
    "accessMode": "1",
    "hyperMetroPathOptimized" : "1",
    "vstoreId":"1"
}

Response:
{
    "data": {
        "DESCRIPTION": "host",
        "HEALTHSTATUS": "1",
        "ID": "11",
        "INITIATORNUM": "0",
        "IP": "",
        "ISADD2HOSTGROUP": "false",
        "LOCATION": "",
        "MODEL": "",
        "NAME": "host10",
        "NETWORKNAME": "",
        "OPERATIONSYSTEM": "9",
        "RUNNINGSTATUS": "1",
        "TYPE": 21,
        "accessMode": "1",
        "allocatedCapacity": "0",
        "capacity": "0",
        "enableInbandCommand": "false",
        "enableSyncLunSn": "1",
        "hyperMetroPathOptimized": "true",
        "mappingLunNumber": "0",
        "protectionCapacity": "0",
        "vstoreId": "1",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.2 Delete

2.7.4.2.1 Interface for Deleting a Host

Function

This interface is used to delete a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/${id}

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Delete a host.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/host/2

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete a host as vStore 1.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/host/4?vstoreId=1

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.3 Modify

2.7.4.3.1 Interface for Changing the Host vStore ID

Function

Change the vStore ID of the host.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/changeVstore/host

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string(uint32)	Host ID. **The value is described as follows:** 0-24575.
newVstoreId	Mandatory	uint32	New vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Change the vStore to which the host whose ID is 2 belongs to the vStore whose ID is 1.

```
Request: PUT /deviceManager/rest/210235982510G2000016/changeVstore/host
{
    "ID":"2",
    "newVstoreId":"1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.3.2 Interface for Modifying a Host

Function

This interface is used to modify a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/${id}

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host ID. **The value is described as follows:** -
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
LOCATION	Optional	string	Location. **The value is described as follows:** - **Length:**0~31
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~63

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Parameter	Mandatory/Optional/Conditional	Type	Description
OPERATIONSYSTEM	Optional	string(enum)	Operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
NETWORKNAME	Optional	string	Host domain name. **The value is described as follows:** - **Length:**0~31
IP	Optional	string	IP address. **The value is described as follows:** A correct IPv4 or IPv6 address, for example, 192.168.1.100 or fc00: : 1234. **Length:**0~63

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Parameter	Mandatory/Optional/Conditional	Type	Description
MODEL	Optional	string	Host model. **The value is described as follows:** - **Length:**0~31
accessMode	Optional	enum	Host access mode. **The value is described as follows:** 0: balanced. 1: asymmetric.
hyperMetroPathOptimized	Optional	bool	Whether the host path to the local HyperMetro array is preferred. **The value is described as follows:** The value can be: 1: "Yes". 0: "No".
enableInbandCommand	Optional	string(bool)	Whether to enable the in-band command function. **The value is described as follows:** "false": disables the function. "true": enables the function.
force	Optional	bool	Whether to change the host configuration forcibly. **The value is described as follows:** true: yes false: no
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Parameter	Mandatory/Optional/Conditional	Type	Description
inbandDevice	Optional	bool	In-band device reporting switch. **The value is described as follows:** false: The function is disabled. true: The function is enabled.
enableSyncLunSn	Optional	string	Specifies whether to enable the SN consistency function. **The value is described as follows:** 1:"0": The SN consistency function is disabled. 2:"1": The SN consistency function is enabled.

Result

N/A

Example

- Modifying a host.

```
Request: PUT /deviceManager/rest/210235843710E7000007/host/2
{
   "DESCRIPTION": "host1231",
   "OPERATIONSYSTEM": "3",
   "accessMode": "1",
   "hyperMetroPathOptimized": "1",
   "enableInbandCommand": "true",
   "enableSyncLunSn": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Modify a host of vStore "4".

```
Request: PUT /deviceManager/rest/sn123456780123456789/host/3?vstoreId=4
{
   "DESCRIPTION": "host1231",
   "OPERATIONSYSTEM": "3",
```

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```
    "accessMode": "1",
    "hyperMetroPathOptimized": "1",
    "enableInbandCommand": "true",
    "enableSyncLunSn": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.4 Query

2.7.4.4.1 Interface for Batch Querying Host Information

Function

This interface is used to batch query basic information about hosts.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, and ISADD2HOSTGROUP are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 21: host
ID	Mandatory	string	Host ID. **The value is described as follows:** -
NAME	Mandatory	string	Host name. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Conditional	string	Type of the parent object. **The value is described as follows:** 14: host group 245: mapping view **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
PARENTID	Conditional	string	ID of a host group or mapping view. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
PARENTNAME	Conditional	string	Name of a host group or mapping view. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
LOCATION	Mandatory	string	Location. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 17: No redundant link 18: Offline

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
OPERATIONSYSTEM	Mandatory	string(enum)	Host operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
NETWORKNAME	Mandatory	string	Host domain name. **The value is described as follows:** -
IP	Mandatory	string	IP address. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string	Host model. **The value is described as follows:** -
ISADD2HOSTGROUP	Mandatory	string(bool)	Indicates whether the host has been added to a host group. **The value is described as follows:** true: yes false: no
INITIATORNUM	Mandatory	string(uint32)	Number of host initiators. **The value is described as follows:** -
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
capacity	Mandatory	uint64	Total capacity. **The value is described as follows:** -
allocatedCapacity	Mandatory	uint64	Used capacity. **The value is described as follows:** -
protectionCapacity	Mandatory	uint64	Data protection capacity. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
enableInbandCommand	Mandatory	string(bool)	Whether the in-band command function is enabled. **The value is described as follows:** "false": The function is disabled. "true": The function is enabled.
accessMode	Mandatory	enum	Host access mode. **The value is described as follows:** 0: balanced. 1: asymmetric.
hyperMetroPathOptimized	Conditional	bool	Whether the host path to the local HyperMetro array is preferred. **The value is described as follows:** 1: Yes 0: No **Note:**This field is returned if the value of accessMode is "1".
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.
enableSyncLunSn	Mandatory	string	Specifies whether to enable the SN consistency function. **The value is described as follows:** 1:"0": The SN consistency function is disabled. 2:"1": The SN consistency function is enabled.

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Example

- Batch querying basic information about hosts.

```
Request: GET /deviceManager/rest/sn123456780123456789/host?range=[0-100]

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "HEALTHSTATUS": "1",
         "ID": "0",
         "INITIATORNUM": "1",
         "IP": "",
         "ISADD2HOSTGROUP": "false",
         "LOCATION": "",
         "MODEL": "",
         "NAME": "Host0",
         "NETWORKNAME": "",
         "OPERATIONSYSTEM": "1",
         "RUNNINGSTATUS": "1",
         "TYPE": 21,
         "accessMode": "1",
         "allocatedCapacity": "0",
         "capacity": "209715200",
         "enableInbandCommand": "false",
         "enableSyncLunSn": "1",
         "hyperMetroPathOptimized": "true",
         "mappingLunNumber": "1",
         "protectionCapacity": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "HEALTHSTATUS": "1",
         "ID": "7",
         "INITIATORNUM": "0",
         "IP": "",
         "ISADD2HOSTGROUP": "false",
         "LOCATION": "",
         "MODEL": "",
         "NAME": "host8",
         "NETWORKNAME": "",
         "OPERATIONSYSTEM": "4",
         "RUNNINGSTATUS": "1",
         "TYPE": 21,
         "accessMode": "0",
         "allocatedCapacity": "0",
         "capacity": "0",
         "enableInbandCommand": "false",
         "enableSyncLunSn": "false",
         "mappingLunNumber": "0",
         "protectionCapacity": "0",
         "vstoreId": "1",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query basic information about hosts of vStore 1 in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/host?range=[0-100]&vstoreId=1

Response:
{
```

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```
  "data": [
    {
      "DESCRIPTION": "",
      "HEALTHSTATUS": "1",
      "ID": "7",
      "INITIATORNUM": "0",
      "IP": "",
      "ISADD2HOSTGROUP": "false",
      "LOCATION": "",
      "MODEL": "",
      "NAME": "host8",
      "NETWORKNAME": "",
      "OPERATIONSYSTEM": "4",
      "RUNNINGSTATUS": "1",
      "TYPE": 21,
      "accessMode": "0",
      "allocatedCapacity": "0",
      "capacity": "0",
      "enableInbandCommand": "false",
      "enableSyncLunSn": "0",
      "mappingLunNumber": "0",
      "protectionCapacity": "0",
      "vstoreId": "1",
      "vstoreName": "tq"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.7.4.4.2 Interface for Querying Host Information

Function

This interface is used to query basic information about a host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host ID. **The value is described as follows:** -

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 21: host
ID	Mandatory	string	Host ID. **The value is described as follows:** -
NAME	Mandatory	string	Host name. **The value is described as follows:** -
PARENTTYPE	Conditional	uint32	Type of the parent object. **The value is described as follows:** 14: host group 245: mapping view **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Conditional	string	ID of a host group or mapping view. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
PARENTNAME	Conditional	string	Name of the host group or mapping view. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
LOCATION	Mandatory	string	Location. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 17: No redundant link 18: Offline
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
OPERATIONSYSTEM	Mandatory	string(enum)	Host operating system. **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
NETWORKNAME	Mandatory	string	Host domain name. **The value is described as follows:** -
IP	Mandatory	string	IP address. **The value is described as follows:** -
MODEL	Mandatory	string	Host model. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ISADD2HOSTGROUP	Mandatory	string(bool)	Whether the host has been added to a host group. **The value is described as follows:** true: yes false: no
INITIATORNUM	Mandatory	string(uint32)	Number of host initiators. **The value is described as follows:** -
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
capacity	Mandatory	uint64	Total capacity. **The value is described as follows:** -
allocatedCapacity	Mandatory	uint64	Used capacity. **The value is described as follows:** -
protectionCapacity	Mandatory	uint64	Data protection capacity. **The value is described as follows:** -
accessMode	Mandatory	enum	Host access mode. **The value is described as follows:** 0: balanced. 1: asymmetric.

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Parameter	Mandatory/ Conditional	Type	Description
hyperMetroPathOptimized	Conditional	bool	Whether the host path to the local HyperMetro array is preferred. **The value is described as follows:** 1: Yes 0: No **Note:**This field is returned if the value of accessMode is "1".
enableInbandCommand	Mandatory	string(bool)	Whether the in-band command function is enabled. **The value is described as follows:** "false": The function is disabled. "true": The function is enabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.
inbandDevice	Mandatory	bool	In-band device switch. **The value is described as follows:** true: The in-band device is enabled. false: The in-band device is disabled.
inbandWwn	Mandatory	array	WWN of an in-band device. **The value is described as follows:** Character string

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Parameter	Mandatory/ Conditional	Type	Description
inbandHostLunId	Mandatory	uint32	Host LUN ID of the in-band device. **The value is described as follows:** Valid value: 0..4095 Invalid value: '--'
enableSyncLunSn	Mandatory	string	Specifies whether to enable the SN consistency function. **The value is described as follows:** 1:"0": The SN consistency function is disabled. 2:"1": The SN consistency function is enabled.

Example

- Query basic information about a host.

```
Request: GET /deviceManager/rest/sn123456780123456789/host/2

Response:
{
   "data": {
      "DESCRIPTION": "",
      "HEALTHSTATUS": "1",
      "ID": "2",
      "INITIATORNUM": "1",
      "IP": "",
      "ISADD2HOSTGROUP": "false",
      "LOCATION": "",
      "MODEL": "",
      "NAME": "Host2",
      "NETWORKNAME": "",
      "OPERATIONSYSTEM": "1",
      "RUNNINGSTATUS": "1",
      "TYPE": 21,
      "accessMode": "1",
      "allocatedCapacity": "0",
      "capacity": "209715200",
      "enableInbandCommand": "false",
      "enableSyncLunSn": "1",
      "hyperMetroPathOptimized": "true",
      "mappingLunNumber": "1",
      "protectionCapacity": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Query basic information about the host as vStore 1.

```
Request: GET /deviceManager/rest/sn123456780123456789/host/2?vstoreId=1

Response:
{
   "data": {
      "DESCRIPTION": "",
      "HEALTHSTATUS": "1",
      "ID": "7",
      "INITIATORNUM": "0",
      "IP": "",
      "ISADD2HOSTGROUP": "false",
      "LOCATION": "",
      "MODEL": "",
      "NAME": "host8",
      "NETWORKNAME": "",
      "OPERATIONSYSTEM": "4",
      "RUNNINGSTATUS": "1",
      "TYPE": 21,
      "accessMode": "0",
      "allocatedCapacity": "0",
      "capacity": "0",
      "enableInbandCommand": "false",
      "enableSyncLunSn": "1",
      "mappingLunNumber": "0",
      "protectionCapacity": "0",
      "vstoreId": "1",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.4.4.3 Interface for Querying Hosts Unassociated with the Object

Function

This interface is used to query hosts unassociated with the object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/unassociate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string(uint32)	Host ID. **Note:**Hosts whose ID is greater than the specified ID are queried.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 256: LUN group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJID	Mandatory	string(uint32)	ID of the associated LUN or LUN group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJNAME	Optional	string	Name of the associated LUN or LUN group. **Note:**Set either ASSOCIATEOBJID or ASSOCIATEOBJNAME.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 21: host.
ID	Mandatory	string(uint32)	Host ID.
NAME	Mandatory	string	Host name. **The value is described as follows:** A string of 1 to 31 characters.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** 1 to 255 characters.

Example

- Querying basic information about unassociated hosts.

```
Request: GET /deviceManager/rest/sn123456780123456789/host/unassociate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=74&range=[0-2]

Response: {
{
   "data": [
      {
         "ID": "0",
         "NAME": "ht1",
         "vstoreId": "6",
         "vstoreName": "tq",
         "TYPE": 21
      },
      {
         "ID": "1",
         "NAME": "Host002",
         "vstoreId": "7",
         "vstoreName": "xyz1",
         "TYPE": 21
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Query basic information about unassociated hosts as vStore 6.

```
Request: GET /deviceManager/rest/sn123456780123456789/host/unassociate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=74&vstoreId=6

Response:
{
   "data": [
      {
         "ID": "0",
         "NAME": "ht1",
         "vstoreId": "6",
         "vstoreName": "tq",
         "TYPE": 21
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.4.4.4 Interface for Querying Information About a Host Link

Function

This interface is used to query information about a host link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host_link/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Link ID.

Result

Parameter	Mandatory/Conditional	Type	Description
CTRL_ID	Mandatory	string	Controller ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Link ID.
INITIATOR_ID	Mandatory	string	Initiator ID.
INITIATOR_NODE_WWN	Mandatory	string	Initiator identifier.
INITIATOR_PORT_WWN	Mandatory	string	Initiator IQN or port WWN.
INITIATOR_TYPE	Mandatory	string(enum)	Initiator type. **The value is described as follows:** 222: iSCSI initiator 223: Fibre Channel initiator 57870: NVMe over RoCE initiator
PARENTID	Mandatory	string	Host ID.
PARENTNAME	Mandatory	string	Host name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 21: host
RUNNINGSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 10: link up 11: link down 27: online 28: offline 31: disabled 101: connecting
TARGET_ID	Mandatory	string	Target ID.
TARGET_NODE_WWN	Mandatory	string	Target identifier.
TARGET_PORT_WWN	Mandatory	string	Target IQN or port WWN.

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Parameter	Mandatory/ Conditional	Type	Description
TARGET_TYPE	Mandatory	string(enum)	Target type. **The value is described as follows:** 213: Ethernet port 212: Fibre Channel port
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 255: host link
ultraPathVersion	Mandatory	string	Host multipathing version. **The value is described as follows:** x.xx.xxx
port	Mandatory	string	Port.
initiatorAlias	Mandatory	string	Initiator alias.
isConfigToPortGroup	Mandatory	string(bool)	Whether the port is added to a port group. **The value is described as follows:** "false": The port is not added to any port group. "true": The port is added to a port group.
hostIP	Mandatory	string	Host IP address.

Example

- Querying information about a host link.

```
Request: GET /deviceManager/rest/1016964156/host_link/0f5668c006c788f0-0000000001022003

Response: {
   "data": {
      "CTRL_ID": "0B",
      "HEALTHSTATUS": "1",
      "ID": "0f5668c006c788f0-0000000001022003",
      "INITIATOR_ID": "iqn.2006-08.com.huawei:oceanstor:2100643e8c453ffa::0",
      "INITIATOR_NODE_WWN": "",
      "INITIATOR_PORT_WWN": "iqn.2006-08.com.huawei:oceanstor:2100643e8c453ffa::0",
      "INITIATOR_TYPE": "222",
      "PARENTID": "0",
      "PARENTNAME": "Host001",
      "PARENTTYPE": 21,
```

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```
        "RUNNINGSTATUS": "27",
        "TARGET_ID": "0000000000000003",
        "TARGET_NODE_WWN": "",
        "TARGET_PORT_WWN":
"iqn.2006-08.com.huawei:oceanstor:210000acbbe13ad2::1022003:10.2.75.75",
        "TARGET_TYPE": "213",
        "port": "",
        "initiatorAlias": "",
        "isConfigToPortGroup": "true",
        "ultraPathVersion": "8.03.025",
        "hostIP": "10.1.1.1",
        "TYPE": 255
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.4.4.5 Interface for Querying Information About Associated Hosts

Function

This interface is used to query basic information about associated hosts.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 14: host group 11: LUN 256: LUN group 27: snapshot 245: mapping view
ASSOCIATEOBJID	Mandatory	string	Associated object ID, such as the host group ID and LUN ID. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 21: host
ID	Mandatory	string	Host ID. **The value is described as follows:** -
NAME	Mandatory	string	Host name. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Conditional	enum	Type of the parent object. **The value is described as follows:** 14: host group. **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
PARENTID	Conditional	string	Host group ID. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
PARENTNAME	Conditional	string	Name of the host group. **The value is described as follows:** - **Note:**This field is returned if the value of ISADD2HOSTGROUP is "true".
LOCATION	Mandatory	string	Location. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
OPERATIONSYSTEM	Mandatory	string(enum)	Host operating system (Windows is used by default). **The value is described as follows:** 0: Linux 1: Windows 2: Solaris 3: HP-UX 4: AIX 5: XenServer 6: Mac OS 7: VMware ESX 8: LINUX_VIS 9: Windows Server 2012 (not recommended) 10: Oracle VM (not recommended) 11: OpenVMS 12: Oracle_VM_Server_for_x86 13: Oracle_VM_Server_for_SPARC
NETWORKNAME	Mandatory	string	Host domain name. **The value is described as follows:** -
IP	Mandatory	string	IP address. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
MODEL	Mandatory	string	Host model. **The value is described as follows:** -
ISADD2HOSTGROUP	Mandatory	string(bool)	Indicates whether the host has been added to a host group. **The value is described as follows:** true: yes false: no
INITIATORNUM	Mandatory	string(uint32)	Number of host initiators. **The value is described as follows:** -
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
allocatedCapacity	Mandatory	uint64	Used capacity.
capacity	Mandatory	uint64	Total capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
accessMode	Mandatory	enume	Host access mode. **The value is described as follows:** The value can be: 0: balanced. 1: asymmetric.

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Parameter	Mandatory/ Conditional	Type	Description
hyperMetroPathOptimized	Conditional	bool	Whether the host path to the local array is preferred in HyperMetro scenarios. **The value is described as follows:** The value can be: 1: "Yes". 0: "No". **Note:**This field is returned if the value of accessMode is "1".
enableInbandCommand	Mandatory	string(bool)	Whether the in-band command function is enabled. **The value is described as follows:** The value can be: "false": The function is disabled. "true": The function is enabled.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Querying basic information about associated hosts.

```
Request: GET /deviceManager/rest/sn123456780123456789/host/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=1

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "HEALTHSTATUS": "1",
         "ID": "0",
         "INITIATORNUM": "0",
         "IP": "",
         "ISADD2HOSTGROUP": "true",
         "LOCATION": "",
         "MODEL": "",
         "NAME": "ht1",
         "NETWORKNAME": "",
         "OPERATIONSYSTEM": "0",
```

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```
            "PARENTID": "0",
            "PARENTNAME": "hgt1",
            "PARENTTYPE": 14,
            "RUNNINGSTATUS": "1",
            "TYPE": 21,
            "accessMode": "0",
            "allocatedCapacity": "0",
            "capacity": "20480",
            "enableInbandCommand": "false",
            "mappingLunNumber": "1",
            "protectionCapacity": "0",
            "vstoreId": "6",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query basic information about the host associated with the vStore whose ID is 4.vStore

```
Request: GET /deviceManager/rest/sn123456780123456789/host/associate?
ASSOCIATEOBJTYPE=14&ASSOCIATEOBJID=1&vstoreId=4

Response:
{
    "data": [
        {
            "DESCRIPTION": "",
            "HEALTHSTATUS": "1",
            "ID": "0",
            "INITIATORNUM": "0",
            "IP": "",
            "ISADD2HOSTGROUP": "true",
            "LOCATION": "",
            "MODEL": "",
            "NAME": "ht1",
            "NETWORKNAME": "",
            "OPERATIONSYSTEM": "0",
            "PARENTID": "0",
            "PARENTNAME": "hgt1",
            "PARENTTYPE": 14,
            "RUNNINGSTATUS": "1",
            "TYPE": 21,
            "accessMode": "0",
            "allocatedCapacity": "0",
            "capacity": "20480",
            "enableInbandCommand": "false",
            "mappingLunNumber": "1",
            "protectionCapacity": "0",
            "vstoreId": "6",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.4.6 Interface for Querying Information About Host Links in Batches

Function

This interface is used to query information about host links in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host_link

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Optional	string	Host ID.
INITIATOR_TYPE	Optional	enum	Initiator type. **The value is described as follows:** 222: iSCSI initiator 223: Fibre Channel initiator 57870: NVMe over RoCE initiator
INITIATOR_PORT_WWN	Optional	string	Initiator IQN or port WWN.

Result

Parameter	Mandatory/Conditional	Type	Description
CTRL_ID	Mandatory	string	Controller ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty
ID	Mandatory	string	Link ID.
INITIATOR_ID	Mandatory	string	Initiator ID.
INITIATOR_NODE_WWN	Mandatory	string	Initiator identifier.
INITIATOR_PORT_WWN	Mandatory	string	Initiator IQN or port WWN.

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Parameter	Mandatory/ Conditional	Type	Description
INITIATOR_TYPE	Mandatory	string(enum)	Initiator type. **The value is described as follows:** 222: iSCSI initiator 223: Fibre Channel initiator 57870: NVMe over RoCE initiator
PARENTID	Mandatory	string	Host ID.
PARENTNAME	Mandatory	string	Host name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 21: host
RUNNINGSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 10: link up 11: link down 27: online 28: offline 31: disabled 101: connecting
TARGET_ID	Mandatory	string	Target ID.
TARGET_NODE_WWN	Mandatory	string	Target identifier.
TARGET_PORT_WWN	Mandatory	string	Target IQN or port WWN.
TARGET_TYPE	Mandatory	string(enum)	Target type. **The value is described as follows:** 213: Ethernet port 212: Fibre Channel port
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 255: host link

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Parameter	Mandatory/ Conditional	Type	Description
ultraPathVersion	Mandatory	string	Host multipathing version. **The value is described as follows:** x.xx.xxx
port	Mandatory	string	Port.
initiatorAlias	Mandatory	string	Initiator alias.
isConfigToPortGroup	Mandatory	string(bool)	Whether the port is added to a port group. **The value is described as follows:** "false": The port is not added to any port group. "true": The port is added to a port group.
hostIP	Mandatory	string	Host IP address.

Example

- Querying information about host links in batches.

```
Request: GET /deviceManager/rest/1016964156/host_link?INITIATOR_TYPE=222&PARENTID=0

Response: {
   "data": [
      {
         "CTRL_ID": "0B",
         "HEALTHSTATUS": "1",
         "ID": "0f5668c006c788f0-0000000001022003",
         "INITIATOR_ID": "iqn.2006-08.com.huawei:oceanstor:2100643e8c453ffa::0",
         "INITIATOR_NODE_WWN": "",
         "INITIATOR_PORT_WWN": "iqn.2006-08.com.huawei:oceanstor:2100643e8c453ffa::0",
         "INITIATOR_TYPE": "222",
         "PARENTID": "0",
         "PARENTNAME": "Host001",
         "PARENTTYPE": 21,
         "RUNNINGSTATUS": "27",
         "TARGET_ID": "0000000000000003",
         "TARGET_NODE_WWN": "",
         "TARGET_PORT_WWN":
"iqn.2006-08.com.huawei:oceanstor:210000acbbe13ad2::1022003:10.2.75.75",
         "TARGET_TYPE": "213",
         "port": "",
         "initiatorAlias": "",
         "isConfigToPortGroup": "false",
         "ultraPathVersion": "8.03.025",
         "hostIP": "10.1.1.1",
         "TYPE": 255
      }
   ],
   "error": {
      "code": 0,
```

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```
        "description": "0"
    }
}
```

- Querying information about host links of an initiator.

```
Request: GET /deviceManager/rest/1016964156/host_link?
INITIATOR_TYPE=223&INITIATOR_PORT_WWN=21000024ff540bb5

Response: {
    "data": [
        {
            "CTRL_ID": "0A",
            "HEALTHSTATUS": "1",
            "ID": "000200000011050ffffffffffffffff21000024ff540bb5",
            "INITIATOR_ID": "21000024ff540bb5",
            "INITIATOR_NODE_WWN": "21000024ff540bb5",
            "INITIATOR_PORT_WWN": "21000024ff540bb5",
            "INITIATOR_TYPE": "223",
            "PARENTID": "0",
            "PARENTNAME": "lhost0",
            "PARENTTYPE": 21,
            "RUNNINGSTATUS": "27",
            "TARGET_ID": "0002000000110500",
            "TARGET_NODE_WWN": "0000000000000000",
            "TARGET_PORT_WWN": "2408643e8c34d774",
            "TARGET_TYPE": "212",
            "TYPE": 255,
            "initiatorAlias": "",
            "isConfigToPortGroup": "true",
            "port": "CTE0.A5.P0",
            "hostIP": "10.1.1.1",
            "ultraPathVersion": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.4.4.7 Interface for Querying the Next Available Host ID

Function

This interface is used to query the next available host ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nextavailableid_old_host

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Host ID.

Example

- Query the next available host ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/nextavailableid_old_host

Response: {
   "data": {
      "ID": "16"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.4.4.8 Interface for Querying the Number of Host Links

Function

This interface is used to query the number of host links.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host_link/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
PARENTID	Mandatory	string	ID of a host.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	uint32	Number of host links based on the specified search criteria. **Unit:**entry

Example

- Query the number of host links.

```
Request: GET /deviceManager/rest/210235843910E6000009/host_link/count?PARENTID=0

Response:
{
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.7.4.4.9 Interface for Querying the Number of Hosts

Function

This interface is used to query the number of hosts.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, and ISADD2HOSTGROUP are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	ID of an associated object type. **The value is described as follows:** 14: host group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJID	Conditional	string	Associated host group ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried hosts.

Example

- Querying the number of hosts.

```
Request: GET /deviceManager/rest/210235843910E6000009/host/count

Response:
{
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Query the number of hosts as vStore 6.

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```
Request:  GET /deviceManager/rest/sn12345678012345678 9/host/count?vstoreId=6

Response:
{
   "data": {
      "COUNT": "8"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.4.4.10 Interface for Querying the Number of Unassociated Hosts

Function

This interface is used to query the number of hosts unassociated with the object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/unassociate/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11: LUN 14: host group 256: LUN group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJID	Conditional	string	ID of the associated LUN, host group, or LUN group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried hosts.

Example

- Querying the number of unassociated hosts.

```
Request: GET /deviceManager/rest/210235843910E6000009/host/unassociate/count

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of hosts that are not associated with the vStore whose ID is 6.

```
Request: GET /deviceManager/rest/210235843910E6000009/host/unassociate/count?vstoreId=6

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.4.5 Others

2.7.5 target

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2.7.5.1 Add

2.7.5.1.1 Interface for Creating a Heterogeneous iSCSI Logical Link

Function

This interface is used to create a heterogeneous iSCSI logical link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/create/and/connect_lif

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
REMOTEIP	Mandatory	string	IP address of the remote device.
PORT	Mandatory	uint32	Remote port. **The value is described as follows:** 1 to 65535. **Note:**Huawei devices only support port "3260".
RECOVERY_POLICY	Mandatory	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
ENABLECHAP	Mandatory	bool	CHAP enabled or not. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHAPUSER	Conditional	string	CHAP name. **Length:**4~223 **Note:**This field must be delivered when CHAP authentication is enabled. Before enabling the CHAP authentication, enable CHAP authentication for the iSCSI initiator of the remote device.
CHAPPASSWD	Conditional	string	Password. **Length:**12~16 **Note:**This field must be delivered when CHAP authentication is enabled. Before enabling the CHAP authentication, enable CHAP authentication for the iSCSI initiator of the remote device.
logicalPortName	Mandatory	string	Logical port name. **The value is described as follows:** [\da-zA-Z._-]{1,31} **Length:**1-31

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	ID of the remote device. **The value is described as follows:** 0..63
name	Mandatory	string	Name of the remote device. **The value is described as follows:** [0-9a-zA-Z\.:-]{1,222}

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Parameter	Mandatory/ Conditional	Type	Description
status	Mandatory	enum	
remoteIp	Mandatory	string	IP address of the remote device. **The value is described as follows:** (22[0-3]|2[0-1]\d|1[0-1]\d|12[0-689]|1[3-9]\d|[1-9]\d?)(\.(2[0-4]\d|25[0-5]|[01]?\d?\d)){3}|([0-9a-fA-F:.]+)
port	Mandatory	uint32	Listening port of the remote device. **The value is described as follows:** 1..65535
recovery_policy	Mandatory	enum	Link recovery policy. **The value is described as follows:** 1:Automatic;2:Manual
enableCHAP	Mandatory	bool	Whether CHAP authentication is enabled for a link. **The value is described as follows:** yes:1 no:0
chapUser	Conditional	string	CHAP user name. **The value is described as follows:** ^[0-9a-zA-Z](.){3,222}$
appType	Mandatory	enum	
logicalPortName	Mandatory	string	Name of the local logical port. **The value is described as follows:** [\da-zA-Z._-]{1,31}

Example

- Creating a heterogeneous iSCSI logical link.

```
Request: PUT /deviceManager/rest/2102350BSE10F3000088/create/and/connect_lif
{
```

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```
    "logicalPortName": "CTE0.A.IOM1.P0.V4",
    "REMOTEIP": "30.30.30.146",
    "PORT": 3260,
    "RECOVERY_POLICY": 1,
    "ENABLECHAP": false
}

Response:
{
  "data": {
    "ID": "1"
    "NAME": "iqn.2006-08.com.huawei:oceanstor:21004846fb8b90df::22004:30.30.30.146""
    "STATUS": "0"
    "REMOTEIP": "30.30.30.146"
    "PORT": "3260"
    "RECOVERYPOLICY": "1"
    "ENABLECHAP": "false"
    "CHAPUSER": "--"
    "APPTYPE": "0"
    "logicalPortName": "CTE0.A.IOM1.P0.V4"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.7.5.1.2 Interface for Creating Heterogeneous Remote Device

Function

This interface is used to create heterogeneous remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/create/and/connect

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
REMOTEIP	Mandatory	string	Remote IP.
PORT	Mandatory	uint32	Remote port. **The value is described as follows:** 1~65535. **Note:**Huawei devices only support port "3260".

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Parameter	Mandatory/Optional/Conditional	Type	Description
RECOVERY_POLICY	Mandatory	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
ENABLECHAP	Mandatory	bool	CHAP enabled or not. **The value is described as follows:** true: enabled false: disabled
CHAPUSER	Conditional	string	CHAP name. **Length:**4~223 **Note:**This field must be delivered when CHAP authentication is enabled. Before enabling the CHAP authentication, enable CHAP authentication for the iSCSI initiator of the remote device.
CHAPPASSWD	Conditional	string	Password. **Length:**12~16 **Note:**This field must be delivered when CHAP authentication is enabled. Before enabling the CHAP authentication, enable CHAP authentication for the iSCSI initiator of the remote device.

Result

N/A

Example

- Creating heterogeneous remote devices.

```
Request: PUT /deviceManager/rest/2102350BSE10F3000088/create/and/connect
{
   "LOCALCONTROLID": "0A",
   "LOCALPORTID": "139267",
   "REMOTEIP": "30.30.30.146",
```

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```
    "PORT": 3260,
    "RECOVERY_POLICY": 1,
    "ENABLECHAP": false
}

Response:
{
    "data": [],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.5.2 Delete

2.7.5.3 Modify

2.7.5.4 Query

2.7.5.4.1 Interface for Implementing Associated Query of iSCSI_TGT_Port Information

Function

This interface is used to implement associated query of iSCSI_TGT_Port.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_tgt_port/associate/eth_port

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 213: Ethernet port
ASSOCIATEOBJID	Mandatory	string	Associated Ethernet port ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 249: iSCSI_TGT_Port
ID	Mandatory	string	iSCSI_TGT_Port name.
TPGT	Mandatory	string(uint32)	Target portal group TAG.
ETHPORTID	Mandatory	string	Associated Ethernet port ID.

Example

- Implementing associated query of iSCSI_TGT_Port.

```
Request: GET /deviceManager/rest/1016964156/iscsi_tgt_port/associate/eth_port?
ASSOCIATEOBJTYPE=213&ASSOCIATEOBJID=132353

Response: {
   "data": [
      {
         "ETHPORTID": "131075",
         "ID": "0+iqn.2006-08.com.huawei:oceanstor:21004846fb8ca15d::20003:10.10.10.200,t,0x0004",
         "TPGT": "4",
         "TYPE": 249
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.5.5 Others

2.7.6 lun_group

2.7.6.1 Add

2.7.6.1.1 Interface for Batch Creating LUN Group Associations

Function

This interface is used to batch create LUN group associations.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/associate/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN, snapshot, or clone. **The value is described as follows:** LUN ID, snapshot ID, or clone ID.
hostLunId	Optional	uint32	Host LUN ID that is allocated to a LUN. **The value is described as follows:** 0..4095 **Note:**The hostLunID and startHostLunId parameters cannot be set at the same time.
startHostLunId	Optional	uint32	Start value of a host LUN ID that is allocated to a LUN. **The value is described as follows:** 0..4095 **Note:**The hostLunID and startHostLunId parameters cannot be set at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
force	Optional	bool	Whether to perform a consistency check for HyperMetro host LUN IDs. **The value is described as follows:** true: no. false: yes.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN, snapshot, or clone.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Create an association between LUN group 5 and LUNs whose IDs are 37 and 38.

```
Request: POST /deviceManager/rest/210235843910E6000009/lungroup/associate/batch
[{
    "ID": "5",
    "ASSOCIATEOBJTYPE": 11,
```

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```
    "ASSOCIATEOBJID": "37"
},{
    "ID": "5",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "38"
}]

Response: {
    "data": [
        {
            "ASSOCIATEOBJID": "37",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "5",
            "vstoreId": "6",
            "vstoreName": "tq",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ASSOCIATEOBJID": "38",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "5",
            "vstoreId": "6",
            "vstoreName": "tq",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Create an association between LUN group 5 and LUNs whose IDs are 37 and 38 for vStore 6.

```
Request: POST /deviceManager/rest/sn123456780123456789/lungroup/associate/batch
[{
    "ID": "5",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "37",
    "vstoreId":"6"
},{
    "ID": "5",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "38",
    "vstoreId":"6"
}]

Response: {
    "data": [
        {
            "ASSOCIATEOBJID": "37",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "5",
            "vstoreId": "6",
            "vstoreName": "tq",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
```

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```
        {
            "ASSOCIATEOBJID": "38",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "5",
            "vstoreId": "6",
            "vstoreName": "tq",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Associating LUNs "1" and "2" with LUN group "0" and allocating host LUN ID "5" to LUN "1".

```
Request: POST /deviceManager/rest/210235843910E6000009/lungroup/associate/batch
[{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "1",
    "hostLunId": "5"
},{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "2",
}]

Response:{
    "data": [
        {
            "ASSOCIATEOBJID": "1",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ASSOCIATEOBJID": "2",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.6.1.2 Interface for Creating a LUN Group

Function

This interface is used to create a LUN group.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	LUN group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
ID	Optional	string	LUN group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 256: LUN group
ID	Mandatory	string	LUN group ID. **The value is described as follows:** LUN group ID.
NAME	Mandatory	string	LUN group name.

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the LUN group has been added to a mapping view. **The value is described as follows:** false: no true: yes
vstoreId	Conditional	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Creating a LUN group.

```
Request: POST /deviceManager/rest/210235843910E6000009/lungroup
{
   "NAME": "LUNGroup002"
}

Response:
{
   "data": {
      "DESCRIPTION": "",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "LUNGroup002",
      "TYPE": 256
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create a LUN group as vStore 6.

```
Request: POST /deviceManager/rest/sn123456780123456789/lungroup
{
   "NAME": "lg1",
   "vstoreId":"6"
}

Response:
{
   "data": {
      "DESCRIPTION": "",
      "ID": "9",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "lgt1",
      "TYPE": 256,
      "vstoreId": "6",
```

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```
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.6.1.3 Interface for Creating a LUN Group Association

Function

This interface is used to create a LUN group association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** LUN ID, snapshot ID, or clone ID.
hostLunID	Optional	uint32	Host LUN ID that is allocated to a LUN. **The value is described as follows:** 0..4095 **Note:**The hostLunID and startHostLunId parameters cannot be set at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
startHostLunId	Optional	uint32	Start value of a host LUN ID that is allocated to a LUN. **The value is described as follows:** 0..4095 **Note:**The hostLunID and startHostLunId parameters cannot be set at the same time.
force	Optional	bool	Whether to perform a consistency check for HyperMetro host LUN IDs. **The value is described as follows:** true: no. false: yes.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Associating LUN "1" with LUN group "0".

```
Request: POST /deviceManager/rest/210235843910E6000009/lungroup/associate
{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "1"
}

Response: {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create an association between the LUN group whose ID is 3 and the LUN whose ID is 14 as tenant 3.

```
Request: POST /deviceManager/rest/sn123456780123456789/lungroup/associate
{
   "ID": "3",
```

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```
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "14",
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Associating LUN "1" with LUN group "0" and allocating host LUN ID "5" to LUN "1".

```
Request: POST /deviceManager/rest/210235843910E6000009/lungroup/associate
{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "1",
    "hostLunID": 5
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.6.2 Delete

2.7.6.2.1 Interface for Batch Deleting LUN Group Associations

Function

This interface is used to batch delete LUN group associations.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/associate/batch

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN, snapshot, or clone. **The value is described as follows:** LUN ID, snapshot ID, or clone ID.
ID	Mandatory	string	LUN group ID.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN, snapshot, or clone.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone

Example

- Disassociating LUNs "1" and "2" from LUN group "0".

```
Request: DELETE /deviceManager/rest/210235843910E6000009/lungroup/associate/batch
[{
```

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```
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "1"
},{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "2"
}]

Response: {
   "data": [
      {
         "ASSOCIATEOBJID": "1",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ASSOCIATEOBJID": "2",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Delete the association between the LUN group whose ID is 3 and the LUNs whose IDs are 61 and 62 as tenant 3.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/lungroup/associate/batch
[{
   "ID": "3",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "61",
   "vstoreId":"3"
},{
   "ID": "3",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "62",
   "vstoreId":"3"
}]

Response:
{
   "data": [
      {
         "ASSOCIATEOBJID": "61",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "3",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ASSOCIATEOBJID": "62",
         "ASSOCIATEOBJTYPE": "11",
```

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```
            "ID": "3",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.6.2.2 Interface for Deleting a LUN Group

Function

This interface is used to delete a LUN group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting the LUN group whose ID is 0.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/lungroup/0

Response: {
    "data": { },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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- Delete the LUN group whose ID is 8 as tenant 3.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/lungroup/8?vstoreId=3

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.6.2.3 Interface for Deleting a LUN Group Association

Function

This interface is used to delete a LUN group association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57702: clone
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** LUN ID, snapshot ID, or clone ID.
ID	Mandatory	string	LUN group ID.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

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Result

N/A

Example

- Disassociating LUN 0 from LUN group 0.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/lungroup/associate?
ID=0&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=1

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete the association between the LUN group whose ID is 3 and the LUN whose ID is 14 as tenant 3.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/lungroup/associate?
ID=3&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=14&vstoreId=3

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.6.3 Modify

2.7.6.3.1 Interface for Modifying LUN Group Information

Function

This interface is used to modify a LUN group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying the LUN group whose ID is 0.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lungroup/0
{
    "NAME": "LUNGroup0011"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modify LUN group 3 as vStore 3.

```
Request: PUT /deviceManager/rest/sn123456780123456789/lungroup/3
{
    "NAME": "lg4",
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.7.6.4 Query

2.7.6.4.1 Interface for Batch Querying LUN Group Information

Function

This interface is used to batch query basic information about LUN groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: ID, NAME, and ISADD2HOSTGROUP.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 256: LUN group
ID	Mandatory	string	LUN group ID. **The value is described as follows:** LUN group ID.
NAME	Mandatory	string	LUN group name.
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the LUN group has been added to a mapping view. **The value is described as follows:** false: no true: yes
CAPCITY	Mandatory	uint64	Total capacity.
SMARTQOSPOLICYID	Mandatory	string	ID of the SmartQoS policy configured for a LUN group.
lunNumber	Mandatory	uint32	Number of member LUNs. **The value is described as follows:** 0..65535
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
cdpGroupNum	Mandatory	uint32	Number of HyperCDP consistency groups. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
replicationGroupNum	Mandatory	uint32	Number of remote replication consistency groups. **The value is described as follows:** 0..4096
snapshotGroupNum	Mandatory	uint32	Number of snapshot consistency groups. **The value is described as follows:** 0..8192
hyperMetroGroupNum	Mandatory	uint32	Number of HyperMetro consistency groups. **The value is described as follows:** 0..4096
cloneGroupNum	Mandatory	uint32	Number of clone consistency groups. **The value is described as follows:** 0..4096
drStarNum	Mandatory	uint32	DR Star trio quantity. **The value is described as follows:** 0..1
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying basic information about LUN groups.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup?range=[0-100]

Response:
{
   "data": [
      {
         "CAPCITY": "0",
         "DESCRIPTION": "",
         "ID": "0",
         "ISADD2MAPPINGVIEW": "false",
```

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```
            "NAME": "lg1",
            "SMARTQOSPOLICYID": "",
            "TYPE": 256,
            "allocatedCapacity": "0",
            "cdpGroupNum": "0",
            "cloneGroupNum": "0",
            "drStarNum": "0",
            "hyperMetroGroupNum": "0",
            "lunNumber": "0",
            "protectionCapacity": "0",
            "replicationGroupNum": "0",
            "snapshotGroupNum": "0",
            "vstoreId": "1",
            "vstoreName": "vstore_1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query basic information about LUN groups in batches as tenant 1.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup?range=[0-100]&vstoreId=1

Response:
{
    "data": [
        {
            "CAPCITY": "0",
            "DESCRIPTION": "",
            "ID": "0",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "lg1",
            "SMARTQOSPOLICYID": "",
            "TYPE": 256,
            "allocatedCapacity": "0",
            "cdpGroupNum": "0",
            "cloneGroupNum": "0",
            "drStarNum": "0",
            "hyperMetroGroupNum": "0",
            "lunNumber": "0",
            "protectionCapacity": "0",
            "replicationGroupNum": "0",
            "snapshotGroupNum": "0",
            "vstoreId": "1",
            "vstoreName": "vstore_1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.6.4.2 Interface for Implementing Associated Query of LUN Group Information

Function

This interface is used to implement associated query of LUN group information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/associate

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 245: mapping view 27: snapshot 11: LUN 230: SmartQoS policy 57646: snapshot consistency group 57703: clone consistency group
ASSOCIATEOBJID	Mandatory	string	Associated object ID, such as the mapping view ID and snapshot ID. **The value is described as follows:** Mapping view ID, snapshot ID, LUN ID, SmartQoS policy ID, snapshot consistency group ID, or clone consistency group ID.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 256: LUN group
ID	Mandatory	string	LUN group ID.
NAME	Mandatory	string	LUN group name.
DESCRIPTION	Mandatory	string(enum)	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the LUN group has been added to a mapping view. **The value is described as follows:** false: no true: yes
SMARTQOSPOLICYID	Mandatory	string	ID of the SmartQoS policy configured for a LUN group.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Implementing associated query of LUN group information.

  ```
  Request: GET /deviceManager/rest/sn123456780123456789/lungroup/associate?
  ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=25&range=[0-100]
  Response:
  ```

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```
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "2",
         "ISADD2MAPPINGVIEW": "true",
         "NAME": "lgt1",
         "SMARTQOSPOLICYID": "",
         "TYPE": 256,
         "vstoreId": "4",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the associated LUN group of the tenant whose ID is 4.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup/associate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=25&range=[0-100]&vstoreId=4

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "2",
         "ISADD2MAPPINGVIEW": "true",
         "NAME": "lgt1",
         "SMARTQOSPOLICYID": "",
         "TYPE": 256,
         "vstoreId": "4",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.6.4.3 Interface for Querying LUN Group Information

Function

This interface is used to query information about a LUN group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	LUN group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 256: LUN group
ID	Mandatory	string	LUN group ID. **The value is described as follows:** LUN group ID.
NAME	Mandatory	string	LUN group name.
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the LUN group has been added to a mapping view. **The value is described as follows:** false: no true: yes
CAPACITY	Mandatory	string(uint64)	Configured capacity. **Unit:**bytes
ASSOCIATELUNIDLIST	Mandatory	string	LUN ID list.
SMARTQOSPOLICYID	Mandatory	string	SmartQoS policy ID.

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Parameter	Mandatory/ Conditional	Type	Description
lunNumber	Mandatory	uint32	Number of member LUNs. **The value is described as follows:** 0..65535
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
cdpGroupNum	Mandatory	uint32	Number of HyperCDP consistency groups. **The value is described as follows:** 0..4096
replicationGroupNum	Mandatory	uint32	Number of remote replication consistency groups. **The value is described as follows:** 0..4096
snapshotGroupNum	Mandatory	uint32	Number of snapshot consistency groups. **The value is described as follows:** 0..8192
hyperMetroGroupNum	Mandatory	uint32	Number of HyperMetro consistency groups. **The value is described as follows:** 0..4096
cloneGroupNum	Mandatory	uint32	Number of clone consistency groups. **The value is described as follows:** 0..4096
drStarNum	Mandatory	uint32	DR Star trio quantity. **The value is described as follows:** 0..1

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Querying information about the LUN group whose ID is 0.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup/0

Response:
{
   "data": {
      "ASSOCIATELUNIDLIST": "[]",
      "CAPCITY": "0",
      "DESCRIPTION": "",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "lg1",
      "SMARTQOSPOLICYID": "",
      "TYPE": 256,
      "allocatedCapacity": "0",
      "cdpGroupNum": "0",
      "cloneGroupNum": "0",
      "drStarNum": "0",
      "hyperMetroGroupNum": "0",
      "lunNumber": "0",
      "protectionCapacity": "0",
      "replicationGroupNum": "0",
      "snapshotGroupNum": "0",
      "vstoreId": "1",
      "vstoreName": "vstore_1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query information about the LUN group whose ID is 0 as vStore 1.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup/0?vstoreId=1

Response:
{
   "data": {
      "ASSOCIATELUNIDLIST": "[]",
      "CAPCITY": "0",
      "DESCRIPTION": "",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "lg1",
      "SMARTQOSPOLICYID": "",
      "TYPE": 256,
      "allocatedCapacity": "0",
      "cdpGroupNum": "0",
      "cloneGroupNum": "0",
      "drStarNum": "0",
      "hyperMetroGroupNum": "0",
```

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```
        "lunNumber": "0",
        "protectionCapacity": "0",
        "replicationGroupNum": "0",
        "snapshotGroupNum": "0",
        "vstoreId": "1",
        "vstoreName": "vstore_1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.6.4.4 Interface for Querying the Number of LUN Group

Function

This interface is used to query the number of LUN groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lungroup/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME and ISADD2MAPPINGVIEW are supported.
ASSOCIATEOBJTYPE	Conditional	enum	Type number of the managed object. **The value is described as follows:** 245: Mapping View 27: Snapshot 11: LUN **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	Associated object ID. **The value is described as follows:** Mapping view ID or snapshot ID or LUN ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried LUN groups.

Example

- Querying the number of LUN groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/lungroup/count

Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of LUN groups as tenant 3.

```
Request: GET /deviceManager/rest/sn123456780123456789/lungroup/count?vstoreId=3

Response:
{
   "data": {
      "COUNT": "4"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.7.6.5 Others

2.7.7 host_group

2.7.7.1 Add

2.7.7.1.1 Interface for Creating a Host Group

Function

The interface is used to create a host group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of the host group. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
ID	Optional	string	Host group ID.
DESCRIPTION	Optional	string	Description. **Length:**0~63
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 14: host group
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Name of the host group.
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the host group has been added to a mapping. **The value is described as follows:** false: no true: yes
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0 to 65535.
hostNumber	Mandatory	uint32	Number of member hosts. **The value is described as follows:** 0 to 8191.
allocatedCapacity	Mandatory	uint64	Used capacity.
capacity	Mandatory	uint64	Total capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.
vstoreName	Mandatory	string	vStore name.

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Example

- Create a host group.

```
Request: POST /deviceManager/rest/sn123456780123456789/hostgroup
{
   "NAME": "HostGroup3",
   "DESCRIPTION": "test create hostGroup rest"
}

Response: {
   "data": {
      "DESCRIPTION": "test create hostGroup rest",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "HostGroup3",
      "TYPE": 14,
      "allocatedCapacity": "",
      "capacity": "",
      "hostNumbe": "0",
      "hostNumber": "0",
      "mappingLunNumber": "0",
      "protectionCapacity": "",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create a host group as vStore 1.

```
Request: POST /deviceManager/rest/sn123456780123456789/hostgroup
{
   "NAME": "HostGroup3",
   "DESCRIPTION": "test create hostGroup rest",
   "vstoreId":"1"
}

Response: {
   "data": {
      "DESCRIPTION": "test create hostGroup rest",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "HostGroup3",
      "TYPE": 14,
      "allocatedCapacity": "",
      "capacity": "",
      "hostNumbe": "0",
      "hostNumber": "0",
      "mappingLunNumber": "0",
      "protectionCapacity": "",
      "vstoreId": "1",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.7.1.2 Interface for Creating a Host Group Association

Function

This interface is used to create a host group association.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 21: Host
ASSOCIATEOBJID	Mandatory	string	Associated host ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Associating host 0 with host group 2.

```
Request: POST /deviceManager/rest/210235843910E6000009/hostgroup/associate
{
   "ID": "2",
   "ASSOCIATEOBJTYPE": 21,
   "ASSOCIATEOBJID": "0"
}

Response:
{
   "data": { },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create a host group whose ID is 0 and associate the host group with the host whose ID is 0 for vStore "3".

```
Request: POST /deviceManager/rest/sn123456780123456789/hostgroup/associate
{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 21,
   "ASSOCIATEOBJID": "0",
```

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```
    "vstoreId":"3"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.7.2 Delete

2.7.7.2.1 Interface for Deleting a Host Group

Function

This interface is used to delete a host group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting the host group whose ID is 0.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/hostgroup/0

Response:
{
    "data": {},
    "error": {
        "code": 0,
```

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```
        "description": "0"
    }
}
```

- Delete the host group whose ID is 4 of vStore "3".

```
Request: DELETE /deviceManager/rest/sn123456780123456789/hostgroup/4?vstoreId=3

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.7.2.2 Interface for Deleting a Host Group Association

Function

This interface is used to delete a host group association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/host/associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 21: Host
ASSOCIATEOBJID	Mandatory	string	Associated host ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

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Example

- Disassociating host 0 from host group 0.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/host/associate
{
   "ID":0,
   "ASSOCIATEOBJTYPE":21,
   "ASSOCIATEOBJID":0
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Delete the association between the host group whose ID is 0 and the host whose ID is 0 for vStore "3".

```
Request: DELETE /deviceManager/rest/210235843910E6000009/host/associate
{
   "ID":0,
   "ASSOCIATEOBJTYPE":21,
   "ASSOCIATEOBJID":0,
   "vstoreId":"3"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.7.3 Modify

2.7.7.3.1 Interface for Modifying Host Group Information

Function

This interface is used to modify a host group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/${id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~63
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Modifying the host group whose ID is 0.

```
Request: PUT /deviceManager/rest/210235843910E6000009/hostgroup/0
{
   "NAME": "HostGroup00112"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Modify the information about the host group whose ID is 0 as vStore 1.

```
Request: PUT /deviceManager/rest/sn123456780123456789/hostgroup/5
{
   "NAME": "HostGroup00112",
   "vstoreId":"1"
}

Response:
{
   "data": {},
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.7.7.4 Query

2.7.7.4.1 Interface for Batch Querying Host Group Information

Function

This interface is used to query basic information about host groups in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: ID and NAME.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 14: host group
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Name of the host group.
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Whether it is added to a mapping view. **The value is described as follows:** false: no true: yes
hostNumber	Mandatory	uint32	Number of member hosts. **The value is described as follows:** 0 to 8191.
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0 to 65535.
capacity	Mandatory	uint64	Total capacity.
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.
vstoreName	Mandatory	string	vStore name.

Example

- Query basic information about host groups in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup?range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "test create hostGroup rest",
         "ID": "0",
         "ISADD2MAPPINGVIEW": "false",
         "NAME": "HostGroup3",
         "TYPE": 14,
         "allocatedCapacity": "",
         "capacity": "",
         "hostNumbe": "1",
         "hostNumber": "1",
         "mappingLunNumber": "0",
         "protectionCapacity": "",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "ID": "1",
         "ISADD2MAPPINGVIEW": "false",
         "NAME": "hg1",
         "TYPE": 14,
         "allocatedCapacity": "",
         "capacity": "",
         "hostNumbe": "0",
         "hostNumber": "0",
         "mappingLunNumber": "0",
         "protectionCapacity": "",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query basic information about host groups in batches as vStore 1.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup?range=[0-100]&vstoreId=1

Response: {
   "data": [
      {
         "DESCRIPTION": "test create hostGroup rest",
         "ID": "0",
         "ISADD2MAPPINGVIEW": "false",
```

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```
            "NAME": "HostGroup3",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "1",
            "hostNumber": "1",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "DESCRIPTION": "",
            "ID": "1",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "hg1",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "0",
            "hostNumber": "0",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.7.4.2 Interface for Implementing Associated Query of Host Group Information

Function

This interface is used to implement associated query of host group information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 245: mapping view 21: host 11: LUN 256: LUN group

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of the associated mapping view, host, LUN, or LUN group.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 14: host group
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Name of the host group.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the host group has been added to a mapping. **The value is described as follows:** false: no true: yes
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Implement associated query of host group information.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/associate?
ASSOCIATEOBJTYPE=245&ASSOCIATEOBJID=0&range=[0-100]

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "2",
         "ISADD2MAPPINGVIEW": "true",
         "NAME": "hgt2",
         "TYPE": 14,
         "vstoreId": "6",
         "vstoreName": "tq"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query basic information about the host group associated with the vStore whose ID is 6.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/associate?
ASSOCIATEOBJTYPE=245&ASSOCIATEOBJID=0&range=[0-100]&vstoreId=6

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "2",
         "ISADD2MAPPINGVIEW": "true",
         "NAME": "hgt2",
         "TYPE": 14,
         "vstoreId": "6",
         "vstoreName": "tq"
      }
```

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```
  ],
  "error": {
     "code": 0,
     "description": "0"
  }
}
```

2.7.7.4.3 Interface for Querying Host Group Information

Function

This interface is used to query information about a host group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 14: host group.
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Name of the host group.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Indicates whether the host group has been added to a mapping. **The value is described as follows:** false: no true: yes
hostNumber	Mandatory	uint32	Number of member hosts. **The value is described as follows:** 0 to 8191.
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0 to 65535.
capacity	Mandatory	uint64	Total capacity.
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.
vstoreName	Mandatory	string	vStore name.

Example

- Query information about the host group whose ID is 0.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/0

Response: {
   "data": {
      "DESCRIPTION": "test create hostGroup rest",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "false",
      "NAME": "HostGroup3",
      "TYPE": 14,
      "allocatedCapacity": "",
      "capacity": "",
      "hostNumbe": "1",
      "hostNumber": "1",
      "mappingLunNumber": "0",
      "protectionCapacity": "",
      "vstoreId": "0",
```

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```
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query information about the host group whose ID is 0 as vStore 6.


```
Request: GET /deviceManager/rest/sn12345678012345678 9/hostgroup/0?vstoreId=6

Response: {
    "data": {
        "DESCRIPTION": "test create hostGroup rest",
        "ID": "0",
        "ISADD2MAPPINGVIEW": "false",
        "NAME": "HostGroup3",
        "TYPE": 14,
        "allocatedCapacity": "",
        "capacity": "",
        "hostNumbe": "1",
        "hostNumber": "1",
        "mappingLunNumber": "0",
        "protectionCapacity": "",
        "vstoreId": "1",
        "vstoreName": "tq"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.7.4.4 Interface for Querying Host Groups Unassociated with the Object

Function

This interface is used to query host groups unassociated with the object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/unassociate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Host group ID. **Note:**Host groups whose ID is greater than the specified ID are queried.

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJNAME	Optional	string	Name of the associated LUN or LUN group.
ASSOCIATEOBJID	Mandatory	string	ID of the associated LUN or LUN group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 256: LUN group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
nameIndex	Optional	string	Name index.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
objtype	Mandatory	enum	Managed object type ID. **The value is described as follows:** 14: host group.
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Name of the host group.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.

Example

- Querying information about host groups unassociated with the object.

```
Request: GET /deviceManager/rest/210235843910E6000009/hostgroup/unassociate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=6&range=[0-2]

Response:
{
   "data": [
      {
         "ID": "1",
         "NAME": "HostGroup002",
         "vstoreId": "7",
         "vstoreName": "xyz1",
         "objtype": "14"
      },
      {
         "ID": "2",
         "NAME": "hgt2",
         "vstoreId": "6",
         "vstoreName": "tq",
         "objtype": "14"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query information about host groups that are not associated as tenant 6.

```
Request: GET /deviceManager/rest/210235843910E6000009/hostgroup/unassociate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=6&range=[0-2]&vstoreId=6

Response:
{
   "data": [
      {
```

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```
            "ID": "2",
            "NAME": "hgt2",
            "vstoreId": "6",
            "vstoreName": "tq",
            "objtype": "14"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.7.4.5 Interface for Querying the Number of Host Group

Function

This interface is used to query the number of host groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID and NAME are supported.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 245: mapping view 21: host **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	ID of the associated mapping view or host. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried host groups.

Example

- Querying the number of host groups.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/count

Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of host groups as vStore "6".

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/count?vstoreId=6

Response:
{
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.7.7.4.6 Interface for Querying the Number of Unassociated Host Groups

Function

This interface is used to query the number of unassociated host groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/unassociate/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11: LUN 21: host 256: LUN group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJID	Conditional	string	ID of the associated LUN, host, or LUN group. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried host groups.

Example

- Querying the number of unassociated host groups.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup/unassociate/count

Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of host groups that are not associated with the vStore whose ID is 6.

```
Request: GET/deviceManager/rest/sn123456780123456789/hostgroup/unassociate/count?vstoreId=6

Response:
{
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.7.4.7 (Not Recommended) Interface for Batch Querying Host Group Information

Function

Query host groups in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned.
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: ID and NAME.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0~1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 14: host group
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Host group name.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Whether it is added to a mapping view. **The value is described as follows:** false: no true: yes
hostNumbe	Mandatory	uint32	Number of member hosts. **The value is described as follows:** 0..8191
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
capacity	Mandatory	uint64	Total capacity.
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0~1023
vstoreName	Mandatory	string	vStore name.

Example

- Query basic information about host groups in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup?range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "1",
         "ISADD2MAPPINGVIEW": "true",
         "NAME": "hg1",
         "TYPE": 14,
         "allocatedCapacity": "",
         "capacity": "",
         "hostNumbe": "1",
         "mappingLunNumber": "0",
         "protectionCapacity": "",
         "vstoreId": "1",
         "vstoreName": "tq"
```

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```
        },
        {
            "DESCRIPTION": "test create hostGroup rest",
            "ID": "2",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "HostGroup001",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "0",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        },
        {
            "DESCRIPTION": "test create hostGroup rest",
            "ID": "5",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "HostGroup00112",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "0",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query basic information about host groups of vStore "1" in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/hostgroup?range=[0-100]&vstoreId=1

Response: {
    "data": [
        {
            "DESCRIPTION": "",
            "ID": "1",
            "ISADD2MAPPINGVIEW": "true",
            "NAME": "hg1",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "1",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        },
        {
            "DESCRIPTION": "test create hostGroup rest",
            "ID": "2",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "HostGroup001",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "0",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        },
        {
```

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```
            "DESCRIPTION": "test create hostGroup rest",
            "ID": "5",
            "ISADD2MAPPINGVIEW": "false",
            "NAME": "HostGroup00112",
            "TYPE": 14,
            "allocatedCapacity": "",
            "capacity": "",
            "hostNumbe": "0",
            "mappingLunNumber": "0",
            "protectionCapacity": "",
            "vstoreId": "1",
            "vstoreName": "tq"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.7.4.8 (Not Recommended) Interface for Querying Host Group Information

Function

Query host group information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hostgroup/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Host group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0~1023

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 14: host group.
ID	Mandatory	string	Host group ID.
NAME	Mandatory	string	Host group name.
DESCRIPTION	Mandatory	string	Description.
ISADD2MAPPINGVIEW	Mandatory	string(bool)	Whether it is added to a mapping view. **The value is described as follows:** false: no true: yes
hostNumbe	Mandatory	uint32	Number of member hosts. **The value is described as follows:** 0..8191
mappingLunNumber	Mandatory	uint32	Number of mapped LUNs. **The value is described as follows:** 0..65535
capacity	Mandatory	uint64	Total capacity.
allocatedCapacity	Mandatory	uint64	Used capacity.
protectionCapacity	Mandatory	uint64	Data protection capacity.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0~1023
vstoreName	Mandatory	string	vStore name.

Example

- Query information about host group 0.

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```
Request: GET /deviceManager/rest/sn12345678012345678 9/hostgroup/0

Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "true",
      "NAME": "hgt1",
      "TYPE": 14,
      "allocatedCapacity": "",
      "capacity": "",
      "hostNumbe": "1",
      "mappingLunNumber": "0",
      "protectionCapacity": "",
      "vstoreId": "6",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query information about the host group whose ID is 0 as vStore 6.

```
Request: GET /deviceManager/rest/sn12345678012345678 9/hostgroup/0?vstoreId=6

Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "0",
      "ISADD2MAPPINGVIEW": "true",
      "NAME": "hgt1",
      "TYPE": 14,
      "allocatedCapacity": "",
      "capacity": "",
      "hostNumbe": "1",
      "mappingLunNumber": "0",
      "protectionCapacity": "",
      "vstoreId": "6",
      "vstoreName": "tq"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.7.5 Others

2.7.8 port_group

2.7.8.1 Add

2.7.8.1.1 Interface for Creating a Port Group

Function

The interface is used to create a port group.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Indicates the name of a port group. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
ID	Optional	string	Port group ID. **The value is described as follows:** The value contains only digits and ranges from 0 to 4095.
DESCRIPTION	Optional	string	Description. **Length:**0~63

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 257: port group
ID	Mandatory	string	Port group ID.
NAME	Mandatory	string	Indicates the name of a port group.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
portType	Mandatory	enum	Indicates the port type of the port group. **The value is described as follows:** 0: physical port 1: LIF 16: initial value of the port type of the port group
vstoreName	Mandatory	string	vStore name.
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0~1023
isAddToMappingView	Mandatory	bool	Whether the port group has been added to a mapping view or not. **The value is described as follows:** 0: false; 1: true
portNum	Mandatory	uint32	Number of ports in a port group. **The value is described as follows:** 0 to 8192.

Example

- Creating a port group.

```
Request: POST /deviceManager/rest/210235843910E6000009/portgroup
{
   "DESCRIPTION": "123",
   "NAME": "PortGroup003"
}

Response: {
   "data": {
      "DESCRIPTION": "123",
      "ID": "2",
      "NAME": "PortGroup003",
      "TYPE": 257,
      "isAddToMappingView": "false",
      "portNum": "0",
      "portType": "16",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
```

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```
    error: {
        code: 0,
        description: "0"
    }
}
```

2.7.8.1.2 Interface for Creating a Port Group Association

Function

This interface is used to create a port group association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/port/associate/portgroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Port group ID. **The value is described as follows:** The value ranges from 0 to n minus one. n indicates the maximum number of port groups.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 213: Ethernet port 279: logical port 57869: RoCE port
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** Port ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

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Result

N/A

Example

- Create a port group association.

```
Request: POST /deviceManager/rest/210235843910E6000009/port/associate/portgroup
{
   "ASSOCIATEOBJTYPE": 212,
   "ASSOCIATEOBJID": "1114880",
   "ID": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create a port group association as vStore 6.

```
Request: POST /deviceManager/rest/sn123456780123456789/port/associate/portgroup
{
   "ASSOCIATEOBJTYPE": 213,
   "ASSOCIATEOBJID": "281479271817222",
   "ID": "5",
   "vstoreId":"6"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.8.2 Delete

2.7.8.2.1 Interface for Deleting a Port Group

Function

This interface is used to delete a port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Port group ID. **The value is described as follows:** The value ranges from 0 to n minus one. n indicates the maximum number of port groups.
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

N/A

Example

- Deleting a port group whose ID is 1.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/portgroup/1

Response:
{
   "data": {},
   "error": {
   "code": 0,
   "description": "0"
   }
}
```

- The tenant whose ID is 3 deletes the port group whose ID is 7.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/portgroup/7?vstoreId=3

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.8.2.2 Interface for Deleting a Port Group Association

Function

This interface is used to delete a port group association.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/port/associate/portgroup

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Port group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 213: Ethernet port 57869: RoCE 279: LIF
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** Port ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Disassociate port 30000000 from port group 0.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/port/associate/portgroup
{
    "ID":0,
    "ASSOCIATEOBJTYPE":212,
    "ASSOCIATEOBJID":"30000000"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
```

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```
        "description": "0"
    }
}
```

- Delete the association between port group 6 and port 281479271817222 as vStore 6.

```
Request: DELETE /deviceManager/rest/sn123456780123456789/port/associate/portgroup
{
    "ID":0,
    "ASSOCIATEOBJTYPE":212,
    "ASSOCIATEOBJID":"30000000",
    "vstoreId":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.8.3 Modify

2.7.8.3.1 Interface for Modifying Port Group Information

Function

This interface is used to modify a port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Port group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~63
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Modify the port group whose ID is 1.

```
Request: PUT /deviceManager/rest/210235843910E6000009/portgroup/1
{
   "DESCRIPTION": "123",
   "NAME": "PortGroup003"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Modify port group 5 as vStore 3.

```
Request: PUT /deviceManager/rest/sn123456780123456789/portgroup/5
{
   "DESCRIPTION": "123",
   "NAME": "pg2",
   "vstoreId":"3"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
```

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```
    "description": "0"
  }
}
```

2.7.8.4 Query

2.7.8.4.1 Interface for Batch Querying Port Group Information

Function

This interface is used to batch query basic information about port groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameters NAME and ID are supported.
range	Optional	string	Query range. **The value is described as follows:** [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 257: port group.
ID	Mandatory	string	Port group ID.
NAME	Mandatory	string	Port group name.
DESCRIPTION	Mandatory	string	Description.
isAddToMappingView	Mandatory	bool	Whether the port group is added to the mapping view. **The value is described as follows:** false: The port group is not added to the mapping view. true: The port group has been added to the mapping view.
portNum	Mandatory	uint32	Number of ports in a port group. **The value is described as follows:** 0..8192
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.
portType	Mandatory	uint8	Port type. **The value is described as follows:** 0 to 16

Example

- Batch querying basic information about port groups.

  ```
  Request: GET /deviceManager/rest/sn123456780123456789/portgroup?range=[0-100]

  Response:
  ```

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```
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "0",
         "NAME": "pg0",
         "TYPE": 257,
         "isAddToMappingView": "false",
         "portNum": "1",
         "portType": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "ID": "6",
         "NAME": "pg_t",
         "TYPE": 257,
         "isAddToMappingView": "false",
         "portNum": "1",
         "portType": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```


- Query basic information about port groups of vStore "3" in batches.

```
Request: GET /deviceManager/rest/sn123456780123456789/portgroup?range=[0-100]&vstoreId=3

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "0",
         "NAME": "pg0",
         "TYPE": 257,
         "isAddToMappingView": "false",
         "portNum": "1",
         "portType": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "ID": "6",
         "NAME": "pg_t",
         "TYPE": 257,
         "isAddToMappingView": "false",
         "portNum": "1",
         "portType": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.8.4.2 Interface for Implementing Associated Query of Port Group Information

Function

This interface is used to implement associated query of port group information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 212: Fibre Channel port 213: Ethernet port 245: mapping view 279: logical port 57869: RoCE port
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** Port ID or mapping view ID.
range	Optional	string	Query range. **The value is described as follows:** [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string(uint32)	Tenant ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 257: port group.
ID	Mandatory	string	Object ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string(uint32)	Tenant ID. **The value is described as follows:** 0~1023
vstoreName	Mandatory	string	Tenant name.

Example

- Implement associated query of port group information.

```
Request: GET /deviceManager/rest/sn123456780123456789/portgroup/associate?
ASSOCIATEOBJTYPE=213&ASSOCIATEOBJID=281479271817222

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "3",
         "NAME": "port_group_353",
         "TYPE": 257,
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Query the port group associated with the tenant whose ID is 6.

```
Request: GET /deviceManager/rest/sn12345678012345678 9/portgroup/associate?
ASSOCIATEOBJTYPE=213&ASSOCIATEOBJID=281479271817222&vstoreId=6

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ID": "3",
         "NAME": "port_group_353",
         "TYPE": 257,
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.8.4.3 Interface for Querying Port Group Information

Function

This interface is used to query basic information about a port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Port group ID.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 257: port group.
ID	Mandatory	string	Port group ID.
NAME	Mandatory	string	Indicates the name of a port group.
DESCRIPTION	Mandatory	string	Description.
isAddToMappingView	Mandatory	bool	Whether the port group is added to the mapping view. **The value is described as follows:** false: not added to the mapping view. true: added to the mapping view.
portNum	Mandatory	uint32	Number of ports in a port group. **The value is described as follows:** 0..8192
vstoreId	Mandatory	string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023
vstoreName	Mandatory	string	vStore name.
portType	Mandatory	uint8	Port type. **The value is described as follows:** 0 to 16

Example

- Querying basic information about the port group whose ID is 0.

```
Request: GET /deviceManager/rest/sn123456780123456789/portgroup/0

Response: {
   "data": {
```

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```
        "DESCRIPTION": "",
        "ID": "0",
        "NAME": "pg1",
        "TYPE": 257,
        "isAddToMappingView": "false",
        "portNum": "0",
        "portType": "16",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query the basic information about the port group whose ID is 5 as vStore "3".


```
Request: GET /deviceManager/rest/sn123456780123456789/portgroup/5?vstoreId=3

Response: {
    "data": {
        "DESCRIPTION": "",
        "ID": "5",
        "NAME": "pg1",
        "TYPE": 257,
        "isAddToMappingView": "false",
        "portNum": "0",
        "portType": "16",
        "vstoreId": "3",
        "vstoreName": "test"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.8.4.4 Interface for Querying the Number of Port Group

Function

This interface is used to query the number of port groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/portgroup/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameters NAME and ID are supported.

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	Associated object ID, such as the FC port ID and Ethernet port ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 213: Ethernet port 252: FCoE port 245: mapping view 16500: InfiniBand port **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId		string(uint32)	vStore ID. **The value is described as follows:** 0 to 1023

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried port groups.

Example

- Querying the number of port groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/portgroup/count

Response: {
   "data": {
      "COUNT": "1"
   },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Query the number of port groups as vStore 3.

```
Request: GEThttps://8.46.84.60:8088/deviceManager/rest/sn123456780123456789/portgroup/count?
vstoreId=3

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.8.5 Others

2.7.9 recycle_bin

2.7.9.1 Add

2.7.9.2 Delete

2.7.9.2.1 Interface for Deleting the Object from the Recycle Bin

Function

This interface is used to delete the object from the recycle bin view.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_view

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
deleteType	Mandatory	int32	Type of the object to be deleted. **The value is described as follows:** 11: LUN.
deleteId		int32	ID list of objects to be deleted.
deleteName		string	Name list of objects to be deleted.

Result

N/A

Example

- Deleting the object whose ID is "9" and type is "11" (LUN) from the recycle bin view.

```
Request: DELETE /deviceManager/rest/2102351NYH10K1000091/recycle_bin_view?
deleteType=11&deleteId=9

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.9.3 Modify

2.7.9.4 Query

2.7.9.4.1 Interface for Querying Information About Objects in the Recycle Bin in Batches

Function

This interface is used to query details about objects in the recycle bin in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_view

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: deleteName and WWN.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
parentID	Optional	string	LUN ID. **The value is described as follows:** 0 to 65535.
deleteName	Optional	string	LUN name **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	Recycle bin index.
parentID	Mandatory	string	LUN ID. **The value is described as follows:** 0 to 65535.
parentName	Mandatory	string	LUN name **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Description.
deleteType	Mandatory	int32	Type of the object to be deleted. **The value is described as follows:** 11: LUN.
deleteId	Mandatory	int32	LUN ID. **The value is described as follows:** 0 to 65535.

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Parameter	Mandatory/ Conditional	Type	Description
deleteName	Mandatory	string	LUN name **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
deleteTime	Mandatory	string	Timestamp when the deleted object enters the recycle bin.
extraInfo	Mandatory	json	Extra information.
errorCode	Mandatory	uint32	Error code of the scheduled recycling status of the object.
errorDescription	Mandatory	string	Error code description of the scheduled recycling status of the object.
allocCapacity	Mandatory	uint64	Actual occupied capacity.
capacity	Mandatory	uint64	Configured capacity.
WWN	Conditional	string	WWN.
childNum	Mandatory	uint32	Number of child objects.
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 255 characters.

Example

- Querying details about objects in the recycle bin in batches.

```
Request: GET /deviceManager/rest/2102351NYH10K1000091/recycle_bin_view?
range=[0-100]&filter=deleteName:LUN and WWN:6ac&t=1600829043099
```

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```
Response: {
   "data": [
      {
         "WWN": "6ac8d34100eea90a0023f74b0000000a",
         "allocCapacity": "0",
         "capacity": "209715200",
         "childNum": "0",
         "deleteId": "10",
         "deleteName": "LUN001008",
         "deleteTime": "1599805597",
         "deleteType": "11",
         "description": "",
         "errorCode": "0",
         "errorDescription": "",
         "extraInfo": {
            "NGUid": "7100eea90a0023f7ac8d344b0000000a",
            "ccdbbackup": "0",
            "functionType": "2",
            "grainSize": "16",
            "subType": "0",
            "workloadTypeId": "0"
         },
         "id": "0",
         "parentID": "0",
         "parentName": "",
         "TYPE": 57880,
         "vstoreId": "1",
         "vstoreName": "V1"
      },
      {
         "WWN": "6ac8d34100eea90a0023ea8e00000009",
         "allocCapacity": "0",
         "capacity": "6291456",
         "childNum": "0",
         "deleteId": "9",
         "deleteName": "snap5",
         "deleteTime": "1599805597",
         "deleteType": "11",
         "description": "",
         "errorCode": "0",
         "errorDescription": "",
         "extraInfo": {
            "NGUid": "7100eea90a0023f7ac8d344b0000000a",
            "ccdbbackup": "0",
            "functionType": "2",
            "grainSize": "16",
            "subType": "0",
            "workloadTypeId": "0"
         },
         "id": "1",
         "parentID": "2",
         "parentName": "LUN003",
         "TYPE": 57880,
         "vstoreId": "1",
         "vstoreName": "V1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query information about subobjects of an object in the recycle bin.

```
Request: GET /deviceManager/rest/2102351NYH10K1000091/recycle_bin_view?
parentId=3&range=[0-100]&filter=deleteName:LUN&t=1600829350336

Response: {
   "data": [
      {
```

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```
            "WWN": "6ac8d34100eea90a0023ea8e00000009",
            "allocCapacity": "0",
            "capacity": "6291456",
            "childNum": "0",
            "deleteId": "9",
            "deleteName": "LUNsnap5",
            "deleteTime": "1599805597",
            "deleteType": "11",
            "description": "",
            "errorCode": "0",
            "errorDescription": "",
            "extraInfo": {
                "NGUid": "7100eea90a0023eaac8d348e00000009",
                "WWN": "6ac8d34100eea90a0023ea8e00000009",
                "ccdbbackup": "0",
                "functionType": "2",
                "grainSize": "16",
                "subType": "0",
                "workloadTypeId": "0"
            },
            "id": "1",
            "parentID": "2",
            "parentName": "LUN003",
            "TYPE": 57880,
            "vstoreId": "1",
            "vstoreName": "V1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.9.4.2 Interface for Querying Recycle Bin Object Information

Function

This interface is used to query details about an object in the recycle bin.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_view/single

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Optional	string	Recycle bin index.

Parameter	Mandatory/Optional/Conditional	Type	Description
deleteType	Conditional	enum	Type of the object to be deleted. **The value is described as follows:** 11: LUN **Note:**This parameter is mandatory when the ID or name of the object to be recycled is used to query information.
deleteId	Conditional	int32	ID of the object to be recycled. **Note:**None.
deleteName	Conditional	string	Name of the object to be deleted. **Note:**None.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	Recycle bin index.
parentID	Mandatory	string	LUN ID. **The value is described as follows:** 0 to 65535.
parentName	Mandatory	string	LUN name
description	Mandatory	string	Description.
deleteType	Mandatory	enum	Type of the object to be deleted. **The value is described as follows:** 11: LUN

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Parameter	Mandatory/ Conditional	Type	Description
deleteId	Mandatory	int32	ID of the object to be recycled.
deleteName	Mandatory	string	Name of the object to be deleted.
deleteTime	Mandatory	uint64	Timestamp when the deleted object is moved to the recycle bin.
extraInfo	Mandatory	json	Extra information.
errorCode	Mandatory	uint32	Error code of the scheduled recycling status of the object. **The value is described as follows:** The value ranges from 0 to 16.
errorDescription	Mandatory	string	Error code description of the scheduled recycling status of the object.
capacity	Mandatory	uint64	Actual occupied capacity.
allocCapacity	Mandatory	uint64	Configured capacity.
WWN	Conditional	string	WWN.
childNum	Mandatory	uint32	Number of child objects.
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** 1–256 characters

Application Scope

For internal use by R&D engineers.

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Example

- Querying information about an object in the recycle bin based on the recycle bin record ID.

```
Request: GET /deviceManager/rest/2102351LVD10J1000005/recycle_bin_view/single?id=1

Response: {
   "data": {
      "WWN": "6506f7710090a87f0004ac6f00000002",
      "allocCapacity": "0",
      "capacity": "209715200",
      "childNum": "0",
      "deleteId": "2",
      "deleteName": "LUN003",
      "deleteTime": "1616320172",
      "deleteType": "11",
      "description": "",
      "errorCode": "0",
      "errorDescription": "",
      "extraInfo": {
         "NGUid": "710090a87f0004ac506f776f00000002",
         "ccdbbackup": "0",
         "functionType": "1",
         "grainSize": "16",
         "subType": "0",
         "workloadTypeId": "0"
      },
      "id": "1",
      "parentID": "",
      "parentName": "",
      "TYPE": 57880,
      "vstoreId": "1",
      "vstoreName": "V1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying information about an object in the recycle bin by object ID and object type.

```
Request: GET /deviceManager/rest/2102351LVD10J1000005/recycle_bin_view/single?
deleteType=11&deleteId=1

Response: {
   "data": {
      "WWN": "6506f7710090a87f0004a43200000001",
      "allocCapacity": "0",
      "capacity": "209715200",
      "childNum": "0",
      "deleteId": "1",
      "deleteName": "LUN002",
      "deleteTime": "1616320172",
      "deleteType": "11",
      "description": "",
      "errorCode": "0",
      "errorDescription": "",
      "extraInfo": {
         "NGUid": "710090a87f0004a4506f7732000001",
         "ccdbbackup": "0",
         "functionType": "1",
         "grainSize": "16",
         "subType": "0",
         "workloadTypeId": "0"
      },
      "id": "0",
      "parentID": "",
```

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```
        "parentName": "",
        "TYPE": 57880,
        "vstoreId": "1",
        "vstoreName": "V1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying information about an object in the recycle bin by object name and object type.


```
Request: GET /deviceManager/rest/2102351LVD10J1000005/recycle_bin_view/single?
deleteType=11&deleteName=LUN002

Response: {
    "data": {
        "WWN": "6506f7710090a87f0004a43200000001",
        "allocCapacity": "0",
        "capacity": "209715200",
        "childNum": "0",
        "deleteId": "1",
        "deleteName": "LUN002",
        "deleteTime": "1616320172",
        "deleteType": "11",
        "description": "",
        "errorCode": "0",
        "errorDescription": "",
        "extraInfo": {
            "NGUid": "710090a87f0004a4506f773200000001",
            "ccdbbackup": "0",
            "functionType": "1",
            "grainSize": "16",
            "subType": "0",
            "workloadTypeId": "0"
        },
        "id": "0",
        "parentID": "",
        "parentName": "",
        "TYPE": 57880,
        "vstoreId": "1",
        "vstoreName": "V1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.9.4.3 Interface for Querying the Number of Objects in the Recycle Bin

Function

This interface is used to query the number of objects in the recycle bin.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_view/count

Access Method

GET

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Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
count	Mandatory	int32	Number of objects.

Example

- Querying the total number of objects in the recycle bin.

```
Request: GET /deviceManager/rest/210235843910E6000009/recycle_bin_view/count
Response:
{
   "data": {
      "COUNT": "12"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying the number of objects whose parent object ID is "2" in the recycle bin view.

```
GET /deviceManager/rest/2102352TRT10L3000002/recycle_bin_view/count?parentID=2

{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.9.4.4 Interface for Querying the Recycle Bin Configuration Policy

Function

This interface is used to query the recycle bin configuration policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_policy

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
delayDeleteEnable	Mandatory	bool	Whether delayed deletion is enabled. **The value is described as follows:** The value can be "0" or "1".
delayDeleteInterval	Mandatory	int32	Delayed deletion interval. **The value is described as follows:** The value ranges from 1 to 168, in hours.

Example

- Querying the recycle bin configuration policy.

```
Request: GET /deviceManager/rest/210235843910E6000009/recycle_bin_policy

Response: {
    "data": {
        "delayDeleteEnable": "1",
        "delayDeleteInterval": "160"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.9.5 Others

2.7.9.5.1 Interface for Configuring the Recycle Bin Policy

Function

This interface is used to modify the recycle bin configuration policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_policy

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
delayDeleteEnable	Mandatory	bool	Whether to enable delayed deletion in the recycle bin. **The value is described as follows:** The value can be "0" or "1".
delayDeleteInterval	Optional	int32	Delayed deletion interval. **The value is described as follows:** The value ranges from 1 to 168, in hours. **Default:**24.

Result

N/A

Example

- Enabling delayed deletion in the recycle bin and modifying the delayed deletion interval.

```
Request: PUT /deviceManager/rest/210235843710E7000007/recycle_bin_policy
{
   "delayDeleteEnable": 1,
   "delayDeleteInterval": 120
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.9.5.2 Interface for Restoring a Specified Object from the Recycle Bin

Function

This interface is used to restore a specified object from the recycle bin.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/recycle_bin_view/recover_recycle_object

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
deleteType	Mandatory	int32	Type of the object to be restored. **The value is described as follows:** 11: LUN.
deleteId	Conditional	int32	ID list of objects to be restored. **Note:**None.
deleteName	Conditional	string	Name list of objects to be restored. **Note:**None.
recoverName	Optional	string	Name of the object after restoration. **The value is described as follows:** The value is a string of 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1-255

Result

N/A

Example

- Restoring the object whose ID is "24" and type is "11" (LUN) from the recycle bin.

```
Request: POST /deviceManager/rest/210235843910E6000009/recycle_bin_view/recover_recycle_object
{
   "deleteType":11,
   "deleteId":24
}

Response: {
   "data": {

   },
```

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```
  "error": {
    "code": 0,
    "description": ""
  }
}
```

2.7.10 workload_type

2.7.10.1 Add

2.7.10.1.1 Interface for Creating an Application Type

Function

This interface is used to create an application type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Application type ID. **The value is described as follows:** 16 to 1024.
NAME	Mandatory	string	Application type name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
BLOCKSIZE	Mandatory	enum	Application request size. **The value is described as follows:** 0: 4 KB 1: 8 KB 2: 16 KB 3: 32 KB 4: 64 KB 5: > 64 KB
ENABLECOMPRESS	Mandatory	bool	Compression enabled or not. **The value is described as follows:** false: disabled true: enabled
ENABLEDEDUP	Mandatory	bool	Whether to enable deduplication. **The value is described as follows:** false: disabled true: enabled
distAlg	Optional	enum	Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode **Default:**0 **Note:**This parameter can be delivered only when the template is for LUNs. Otherwise, a parameter error is reported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
templateType	Optional	enum	Template type. **The value is described as follows:** 0: LUN; 1: file system

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57439: application type
ID	Mandatory	string	Application type ID. **The value is described as follows:** 16 to 1024.
NAME	Mandatory	string	Application type name.
BLOCKSIZE	Mandatory	string(enum)	Application request size. **The value is described as follows:** 0: 4 KB 1: 8 KB 2: 16 KB 3: 32 KB 4: 64 KB 5: > 64 KB
CREATETYPE	Mandatory	string(enum)	Application type. **The value is described as follows:** 0: preset 1: customized

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Parameter	Mandatory/ Conditional	Type	Description
distAlg	Conditional		Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode
templateType	Mandatory	enum	Template type. **The value is described as follows:** 0: LUN 1: file system
ENABLEDEDUP	Conditional		Whether data deduplication is enabled. **The value is described as follows:** false: disabled true: enabled
ENABLECOMPRESS	Conditional		Whether compression is enabled. **The value is described as follows:** false: disabled true: enabled

Example

- Creating an application type.

```
Request: POST /deviceManager/rest/2102358437l0E7000007/workload_type
{
   "NAME": "type8kb",
   "BLOCKSIZE": "1",
   "ENABLECOMPRESS": true,
   "ENABLEDEDUP": true
}
Response:
{
   "data": {
      "BLOCKSIZE": "1",
      "CREATETYPE": "1",
      "ID": "16",
      "NAME": "type8kb",
      "TYPE": 57439,
      "templateType": "0"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.10.2 Delete

2.7.10.2.1 Interface for Deleting an Application Type

Function

This interface is used to delete an application type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Application type ID.

Result

N/A

Example

- Deleting an application type.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/workload_type/20

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.10.3 Modify

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2.7.10.3.1 Interface for Modifying Application Type Information

Function

This interface is used to modify application type information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Application type ID. **The value is described as follows:** 16 to 1024.
NAME	Optional	string	Application type name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
BLOCKSIZE	Optional	enum	Application request size. **The value is described as follows:** 0: 4 KB 1: 8 KB 2: 16 KB 3: 32 KB 4: 64 KB 5: > 64 KB

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLECOMPRESS	Optional	bool	Compression enabled or not. **The value is described as follows:** false: disabled true: enabled
ENABLEDEDUP	Optional	bool	Whether to enable deduplication. **The value is described as follows:** false: disabled true: enabled
distAlg	Optional	enum	Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode **Default:**0 **Note:**When the template is for LUNs, the following parameter error is reported: distribution algorithm modification failure.
templateType	Optional	enum	Template type. **The value is described as follows:** 0: LUN; 1: file system

Result

N/A

Example

- Modifying an application type.

```
Request: PUT /deviceManager/rest/210235843710E7000007/workload_type/20
{
```

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```
    "NAME": "dayu641",
    "BLOCKSIZE": "4"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.7.10.4 Query

2.7.10.4.1 Interface for Batch Querying Application Type Information

Function

This interface is used to batch query basic information about application types.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 query results can be returned.
isDetailInfo	Optional	bool	Whether to display details. **The value is described as follows:** true: yes false: no
distAlg	Optional	string(enum)	Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode **Note:**When the application type is LUNs, the default value of "distAlg" is "0".
templateType	Optional	string(enum)	Template type. **The value is described as follows:** 0: LUN 1: file system

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Parameter	Mandatory/Optional/Conditional	Type	Description
poolId	Optional	uint32	Storage pool ID. **Note:**The field is not used.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57439: application type
ID	Mandatory	string	Application type ID. **The value is described as follows:** 0 to 2048.
NAME	Mandatory	string	Application type name.

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Parameter	Mandatory/ Conditional	Type	Description
BLOCKSIZE	Mandatory	string(enum)	Application request size. **The value is described as follows:** 0: 4 KB 1: 8 KB 2: 16 KB 3: 32 KB 4: 64 KB 5: > 64 KB **Note:** The block size of the internal application type of OceanStor Dorado 3000 V6 is different from that of other product models. The main differences are as follows: (1) Default: [3000 V6: 16 KB] [Others: 8 KB] (2) Oracle_OLAP&OLTP: [3000 V6: 16 KB] [Others: 8 KB] (3) SQL_Server_OLAP&OLTP: [3000 V6: 16 KB] [Others: 8 KB] (4) SAP_HANA: [3000 V6: 16 KB] [Others: 8 KB]
ENABLECOMPRESS	Conditional	string(bool)	Whether to enable compression. **The value is described as follows:** false: disabled true: enabled

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEDEDUP	Conditional	string(bool)	Whether to enable deduplication. **The value is described as follows:** false: disabled true: enabled
CREATETYPE	Mandatory	string(enum)	Application type. **The value is described as follows:** 0: preset 1: customized
distAlg	Conditional	enum	Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode **Note:**This parameter is not returned when the template is for LUNs.
templateType	Mandatory	enum	Template type. **The value is described as follows:** 0: LUN; 1: file system

Example

- Batch querying basic information about application types.

```
Request: GET /deviceManager/rest/210235843710E7000007/workload_type?range=[0-100]

Response:
{
   "data": [
      {
         "BLOCKSIZE": "1",
         "CREATETYPE": "0",
         "ID": "0",
         "NAME": "Default",
         "TYPE": 57439,
         "templateType": "0"
      },
      {
         "BLOCKSIZE": "3",
```

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```
        "CREATETYPE": "0",
        "ID": "1",
        "NAME": "Oracle_OLAP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "2",
        "NAME": "Oracle_OLTP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "3",
        "NAME": "Oracle_OLAP&amp;amp;OLTP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "3",
        "CREATETYPE": "0",
        "ID": "4",
        "NAME": "SQL_Server_OLAP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "5",
        "NAME": "SQL_Server_OLTP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "6",
        "NAME": "SQL_Server_OLAP&amp;amp;OLTP",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "7",
        "NAME": "SAP_HANA",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "8",
        "NAME": "Vmware_VDI",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "9",
        "NAME": "Hyper-V_VDI",
        "TYPE": 57439,
        "templateType": "0"
```


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```
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "10",
        "NAME": "FusionAccess_VDI",
        "TYPE": 57439,
        "templateType": "0"
    },
    {
        "BLOCKSIZE": "2",
        "CREATETYPE": "0",
        "ID": "11",
        "NAME": "NAS_Default",
        "TYPE": 57439,
        "distAlg": "2",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "2",
        "CREATETYPE": "0",
        "ID": "12",
        "NAME": "NAS_Virtual_Machine",
        "TYPE": 57439,
        "distAlg": "0",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "13",
        "NAME": "NAS_Database",
        "TYPE": 57439,
        "distAlg": "0",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "3",
        "CREATETYPE": "0",
        "ID": "14",
        "NAME": "NAS_Large_File",
        "TYPE": 57439,
        "distAlg": "2",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "2",
        "CREATETYPE": "0",
        "ID": "15",
        "NAME": "Office_Automation",
        "TYPE": 57439,
        "distAlg": "2",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "2",
        "CREATETYPE": "0",
        "ID": "1025",
        "NAME": "NAS_EDA",
        "TYPE": 57439,
        "distAlg": "2",
        "templateType": "1"
    },
    {
        "BLOCKSIZE": "1",
        "CREATETYPE": "0",
        "ID": "1031",
        "NAME": "Others",
        "TYPE": 57439,
```


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```
            "templateType": "0"
        },
        {
            "BLOCKSIZE": "2",
            "CREATETYPE": "0",
            "ID": "1032",
            "NAME": "NAS_Others",
            "TYPE": 57439,
            "distAlg": "2",
            "templateType": "1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.7.10.4.2 Interface for Querying Application Type Information

Function

This interface is used to query basic information about the application type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Application type ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57439: application type

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Application type ID. **The value is described as follows:** 0 to 2048.
NAME	Mandatory	string	Application type name.
BLOCKSIZE	Mandatory	string(enum)	Application request size. **The value is described as follows:** 0: 4 KB 1: 8 KB 2: 16 KB 3: 32 KB 4: 64 KB 5: > 64 KB **Note:** The block size of the internal application type of OceanStor Dorado 3000 V6 is different from that of other product models. The main differences are as follows: (1) Default: [3000 V6: 16 KB] [Others: 8 KB] (2) Oracle_OLAP&OLTP: [3000 V6: 16 KB] [Others: 8 KB] (3) SQL_Server_OLAP&OLTP: [3000 V6: 16 KB] [Others: 8 KB] (4) SAP_HANA: [3000 V6: 16 KB] [Others: 8 KB]
CREATETYPE	Mandatory	string(enum)	Application type. **The value is described as follows:** 0: preset 1: customized

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Parameter	Mandatory/ Conditional	Type	Description
distAlg	Conditional	enum	Data distribution algorithm of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode **Note:**This parameter is not returned when the template is for LUNs.
templateType	Mandatory	enum	Template type. **The value is described as follows:** 0: LUN; 1: file system

Example

- Querying basic information about the application type.

```
Request: GET /deviceManager/rest/210235843710E7000007/workload_type/15
Response:
{
   "data": {
      "BLOCKSIZE": "2",
      "CREATETYPE": "0",
      "ID": "15",
      "NAME": "Office_Automation",
      "TYPE": 57439,
      "distAlg": "2",
      "templateType": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.10.4.3 Interface for Querying the Number of Application Type

Function

This interface is used to query the number of application types.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/workload_type/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried application types.

Example

- Query the number of application types.

```
Request: GET/deviceManager/rest/210235843910E6000009/workload_type/count

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.7.10.5 Others

2.8 Storage pool

2.8.1 storage_pool

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2.8.1.1 Add

2.8.1.1.1 Interface for Creating a Storage Pool

Function

This interface is used to create a storage pool.

URL

https://${ip}:${port}/api/v2/storagepool

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
description	Optional	string	Description. **Length:**0~255
enableDataEncryption	Optional	enum	Encryption type. **The value is described as follows:** 0: standard disk domain 1: encrypted disk domain
engineIdList	Optional	array	List of controller enclosures.

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Parameter	Mandatory/Optional/Conditional	Type	Description

disks	Optional	json	Disk list.
			The value is described as follows:
			disks: {
			all: true,
			byNumber: [
			{
			capacity: number,
			enclosureId: 0
			}
			],
			byId: [
			]
			}

SSDHOTSPARESTRAT-EGY	Optional	enum	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8
raidLevel	Optional	enum	Tier 0 protection level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP 1: RAID 10 **Default:**5: RAID 6

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Parameter	Mandatory/Optional/Conditional	Type	Description
userConsumedCapacityThreshold	Optional	json	Used capacity threshold. **The value is described as follows:** 1~95 **Note:** {"level1":xx, "level2":xx} level1: used capacity threshold. The value is from 1 to 95 and the default value is 80. level2: capacity exhaustion threshold. The value is from 2 to 99 and the default value is 90.
thinOverCommitmentLimitEnabled	Optional	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** false: off true: on

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Parameter	Mandatory/Optional/Conditional	Type	Description
thinOverCommitment-MaxPercentage	Optional	uint32	Thin LUN provisioning limit. **The value is described as follows:** 0~65535 **Unit:**% **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. When the provisioning limit is modified, only parameter validity is checked. Capacity is not checked. For example, the thin LUN capacity reaches 40%, thin LUN provisioning limit can be changed from 80% to 20%. Only subsequent thin LUN configurations are limited. 3. The total capacity of thin LUNs does not contain that of snapshots. 4. If "thinOverCommitmentLimitEnabled" is configured and the value is "1", this parameter must be delivered. If the value is "0", this parameter cannot be delivered.
protectCapacityLimi-tEnabled	Optional	bool	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on

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Parameter	Mandatory/Optional/Conditional	Type	Description
protectCapacityThres-hold	Optional	uint32	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1~95 **Note:** {"low":xx, "high":xx} low: lower threshold of the storage pool protection capacity. The value is from 1 to 95 and the default value is 20. high: upper threshold of the storage pool protection capacity. The value is from 2 to 99 and the default value is 30.
redundancyStrategy	Optional	enum	Redundancy policy for the storage pool. **The value is described as follows:** 0: disk 1: enclosure **Default:**0: disk

Result

Parameter	Mandatory/Conditional	Type	Description
diskplayName	Mandatory	string	Name of a task that is displayed to a user. **The value is described as follows:** Creating storage pool.

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Parameter	Mandatory/ Conditional	Type	Description
target	Mandatory	string	Task operation object. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.).
taskId	Mandatory	string	Task ID.
name	Mandatory	string	Task name. **The value is described as follows:** The value is "createStoragePool".

Usage Guidelines

If you want to create an all-flash storage pool, create an all-flash storage pool and then a hybrid-flash storage pool.

Example

- Creating a storage pool.

```
Request: post /api/v2/storagepool/
{
  "name": "storagepool",
  "disks": {
    "all": true
  }
}
Response:
{
    "data": {
        "displayName": "Creating storage pool",
        "target": "storagpool001",
        "taskId": "2",
        "name": "createStoragePool"
     },
    "result": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.1.1.2 (Not Recommended)Interface for Creating a Storage Pool

Function

This interface is used to create a storage pool (This interface is inherited from earlier versions and is not recommended in this version. Interface for Creating a Storage Pool is recommended).

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value can contain letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
PARENTID	Optional	string	ID of the parent object. **The value is described as follows:** ID of the disk domain. **Default:**0
ID	Optional	uint32	Storage pool ID. **Default:**0
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
USERCONSUMEDCAPACITYTHRESHOLD	Optional	uint32	Used capacity threshold. **The value is described as follows:** 1 to 95. **Default:**80
TIER0RAIDLV	Optional	enum	Tier 0 protection level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP 1: RAID 10 **Default:**5: RAID 6

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIER0CAPACITY	Conditional	uint64	Raw capacity of tier 0, expressed in sectors. **Note:**This parameter must be delivered when parameter "TIER0ALLCAPACITY" is not delivered.
USAGETYPE	Optional	enum	Storage pool usage (this field is no longer used). **The value is described as follows:** - **Default:**1: LUN
ENDINGUPTHRESHOLD	Optional	uint32	Used-up threshold. **The value is described as follows:** 2 to 99. **Default:**90
PARENTTYPE	Optional	enum	Type number of the parent object. **The value is described as follows:** 266: disk domain **Default:**266
TIER0ALLCAPACITY	Optional	bool	If the value is "true", all available capacities of disk domains are used to create storage pools. If the value is "false", ignore the parameter. **Note:**If parameters "TIER0CAPACITY" and "TIER0ALLCAPACITY" are concurrently delivered and "TIER0ALLCAPACITY" is "true", all available capacities of disk domains are used to create storage pools.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROVISIONINGLIMITSWITCH	Optional	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** false: off true: on **Default:**false: off
PROVISIONINGLIMIT	Conditional	uint32	Thin LUN provisioning limit. **The value is described as follows:** 0 to 65535. **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. When the provisioning limit is modified, only parameter validity is checked. Capacity is not checked. For example, the thin LUN capacity reaches 40%, thin LUN provisioning limit can be changed from 80% to 20%. Only subsequent thin LUN configurations are limited. 3. The total capacity of thin LUNs does not contain that of snapshots. 4. If "PROVISIONINGLIMITSWITCH" is configured and the value is "1", this parameter must be delivered. If the value is "0", this parameter cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
autoDeleteSwitch	Optional	enum	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on **Default:**0: off
poolProtectLowThreshold	Optional	uint32	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1 to 95. **Default:**20
poolProtectHighThreshold	Optional	uint32	High threshold of the storage pool protection capacity. **The value is described as follows:** 2 to 99. **Default:**30

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 216: storage pool
ID	Mandatory	string	Storage pool ID.
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** ID of the disk domain.
PARENTNAME	Mandatory	string	Name of the parent object. **The value is described as follows:** Name of the disk domain.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: pre-copy 16: reconstruction 27: online 28: offline 32: balancing 53: initializing
DESCRIPTION	Mandatory	string	Description.
USERTOTALCAPACITY	Mandatory	string(uint64)	Total capacity.
USERFREECAPACITY	Mandatory	string(uint64)	Free capacity.
USERCONSUMEDCAPACITY	Mandatory	string(uint64)	Used capacity.
USERCONSUMEDCAPACITYPERCENTAGE	Mandatory	string(uint32)	Used capacity ratio.
USERCONSUMEDCAPACITYTHRESHOLD	Mandatory	string(uint32)	Used capacity threshold.

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Parameter	Mandatory/ Conditional	Type	Description
TIER0RAIDLV	Mandatory	string(enum)	Tier 0 protection level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP 1: RAID 10 **Note:**0 is returned if this field is invalid.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type of tier 0. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**If there is no valid value, 0 is returned.
TIER0CAPACITY	Mandatory	string(uint64)	Raw capacity of tier 0, expressed in sectors. **Note:**0 is returned if this field is invalid.
REPLICATIONCAPACITY	Mandatory	string(uint64)	Capacity consumed by all LUNs for data protection. **Note:**The capacity is used for snapshot COW.
DATASPACE	Mandatory	string(uint64)	Available capacity for creating LUNs in the storage pool. **Note:**The value equals the remaining storage pool capacity minus metadata capacity.
USAGETYPE	Mandatory	string(enum)	Storage pool usage (this field is no longer used). **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
LUNCONFIGEDCAPACITY	Mandatory	string(uint64)	Configured capacity of a LUN.
SPACEREDUCTIONRATE	Mandatory	string(json)	Data reduction ratio.
DEDUPLICATIONRATE	Mandatory	string(json)	Data duplication ratio.
COMPRESSIONRATE	Mandatory	string(json)	Data compression ratio.
THINPROVISIONSAVEPERCENTAGE	Mandatory	string(json)	Ratio of space saved by thin LUNs.
SAVECAPACITYRATE	Mandatory	string(json)	Total space saving ratio.
ENDINGUPTHRESHOLD	Mandatory	string(uint32)	Used-up threshold.
TOTALLUNWRITECAPACITY	Mandatory	string(uint32)	Used capacity of LUNs, excluding the protection capacity.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 266: disk domain
COMPRESSEDCAPACITY	Mandatory	string(uint64)	Capacity saved by compression.
COMPRESSINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for compression.
DEDUPEDCAPACITY	Mandatory	string(uint64)	Capacity saved by deduplication.
DEDUPINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for deduplication.
REDUCTIONINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for compression and deduplication.
USERCONSUMEDCAPACITYWITHOUTMETA	Mandatory	string(uint64)	Used capacity (metadata excluded).
USERWRITEALLOCCAPACITY	Mandatory	string(uint64)	Data capacity.

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Parameter	Mandatory/ Conditional	Type	Description
PROVISIONINGLIMITSWITCH	Mandatory	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** 0: off 1: on
PROVISIONINGLIMIT	Mandatory	string(uint32)	Thin LUN provisioning limit. **The value is described as follows:** 0 to 65535. **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. A valid provisioning limit is returned when the value of "PROVISIONINGLIMITSWITCH" is 1.
autoDeleteSwitch	Mandatory	enum	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on
poolProtectLowThreshold	Mandatory	string(uint32)	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1 to 95.
poolProtectHighThreshold	Mandatory	string(uint32)	High threshold of the storage pool protection capacity. **The value is described as follows:** 2 to 99.

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Example

- Creating a storage pool.

```
Request: POST/deviceManager/rest/210235843710E7000007/storagepool
{
  "DESCRIPTION": "",
  "ENDINGUPTHRESHOLD": 90,
  "NAME": "StoragePool001",
  "PARENTID": "0",
  "PARENTTYPE": 266,
  "PROVISIONINGLIMITSWITCH": false,
  "TIER0ALLCAPACITY": true,
  "TIER0DISKTYPE": "3",
  "TIER0RAIDLV": "5",
  "TYPE": 216,
  "USERCONSUMEDCAPACITYTHRESHOLD": 80,
  "autoDeleteSwitch": "0"
}

Response:
{
   "data": {
     "COMPRESSEDCAPACITY": "0"
     "COMPRESSINVOLVEDCAPACITY": "0"
     "COMPRESSIONRATE": "{"numerator":"10", "denominator":"10","logic":"="}"
     "DATASPACE": "2109427712"
     "DEDUPEDCAPACITY": "0"
     "DEDUPINVOLVEDCAPACITY": "0"
     "DEDUPLICATIONRATE": "{"numerator":"10", "denominator":"10","logic":"="}"
     "DESCRIPTION": ""
     "ENDINGUPTHRESHOLD": "90"
     "HEALTHSTATUS": "1"
     "ID": "8"
     "LUNCONFIGEDCAPACITY": "0"
     "NAME": "StoragePool009"
     "PARENTID": "2"
     "PARENTNAME": "DiskDomain003"
     "PARENTTYPE": 266
     "PROVISIONINGLIMIT": "-1"
     "PROVISIONINGLIMITSWITCH": "false"
     "REDUCTIONINVOLVEDCAPACITY": "0"
     "REPLICATIONCAPACITY": "0"
     "RUNNINGSTATUS": "53"
     "SAVECAPACITYRATE": "{"numerator":"10", "denominator":"10","logic":"="}"
     "SPACEREDUCTIONRATE": "{"numerator":"1000", "denominator":"1000","logic":"="}"
     "THINPROVISIONSAVEPERCENTAGE": "{"numerator":"0", "denominator":"10","logic":"="}"
     "TIER0CAPACITY": "2109427712"
     "TIER0DISKTYPE": "3"
     "TIER0RAIDLV": "5"
     "TOTALLUNWRITECAPACITY": "0"
     "TYPE": 216
     "USAGETYPE": "0"
     "USERCONSUMEDCAPACITY": "0"
     "USERCONSUMEDCAPACITYPERCENTAGE": "0"
     "USERCONSUMEDCAPACITYTHRESHOLD": "80"
     "USERCONSUMEDCAPACITYWITHOUTMETA": "0"
     "USERFREECAPACITY": "2109427712"
     "USERTOTALCAPACITY": "2109427712"
     "USERWRITEALLOCCAPACITY": "0"
     "autoDeleteSwitch": "0"
     "poolProtectHighThreshold": "30"
     "poolProtectLowThreshold": "20"
},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.8.1.2 Delete

2.8.1.2.1 (Not Recommended) Interface for Deleting a Storage Pool

Function

This interface is used to delete a storage pool (you are advised to use Interface for Deleting a Storage Pool instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

Result

N/A

Example

- Delete a storage pool.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/storagepool/0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.8.1.3 Modify

2.8.1.3.1 Interface for Modifying Effective Capacity Information

Function

This interface is used to modify effective capacity information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/effective_capacity_info/{id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
insufficientThreshold	Optional	uint32	Alarm threshold indicating that the effective capacity is insufficient. **The value is described as follows:** The value ranges from 1 to 95 (unit: %).
usedUpThreshold	Optional	uint32	Alarm threshold indicating that the effective capacity is used up. **The value is described as follows:** The value ranges from 2 to 99 (unit: %).

Result

N/A

Example

- Modify the alarm thresholds for the effective capacity.

```
Request: PUT/deviceManager/rest/ST000000000000000000/effective_capacity_info
{
   "usedUpThreshold": "70",
   "insufficientThreshold": "80"
```

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```
}

Response:
{
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.1.3.2 Interface for Modifying Storage Pool Information

Function

This interface is used to modify storage pools.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
USERCONSUMEDCAPACITYTHRESHOLD	Optional	uint32	Used capacity threshold. **The value is described as follows:** 1 to 95.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENDINGUPTHRESHOLD	Optional	uint32	Used-up threshold. **The value is described as follows:** 2 to 99.
TIER0CAPACITY	Optional	uint64	Usable capacity of tier 0.
ISCONTAINERENABLE	Optional	bool	Whether to apply the storage pool to container configuration services. **The value is described as follows:** The value can be "true" or "false", where: 1:"true": applies the storage pool to the container configuration. 2:"false": clears the application of the storage pool from the container configuration.

Result

N/A

Example

- Modifying storage pools.

```
Request: PUT /deviceManager/rest/210235843710E7000007/storagepool/0
{
   “DESCRIPTION”: "123123"
}

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.8.1.3.3 (Not Recommended) Interface for Modifying Storage Pool Information

Function

This interface is used to modify storage pools (you are advised to use Interface for Modifying Storage Pool Information instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
USERCONSUMEDCAPACITYTHRESHOLD	Optional	uint32	Used capacity threshold. **The value is described as follows:** 1 to 95.
ENDINGUPTHRESHOLD	Optional	uint32	Used-up threshold. **The value is described as follows:** 2 to 99.
TIER0CAPACITY	Optional	uint64	Raw capacity of tier 0.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROVISIONINGLIMITSWITCH	Optional	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** 0: false 1: true
PROVISIONINGLIMIT	Conditional	uint32	Thin LUN provisioning limit. **The value is described as follows:** 0 to 65535. **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. When the provisioning limit is modified, only parameter validity is checked. Capacity is not checked. For example, the thin LUN capacity reaches 40%, thin LUN provisioning limit can be changed from 80% to 20%. Only subsequent thin LUN configurations are limited. 3. The total capacity of thin LUNs does not contain that of snapshots. 4. If "PROVISIONINGLIMITSWITCH" is configured and the value is "1", this parameter must be delivered. If the value is "0", this parameter cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
autoDeleteSwitch	Optional	enum	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on **Default:**0:off
poolProtectLowThreshold	Optional	uint32	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1 to 95. **Default:**20
poolProtectHighThreshold	Optional	uint32	High threshold of the storage pool protection capacity. **The value is described as follows:** 2 to 99. **Default:**30

Result

N/A

Example

- Modifying storage pools.

```
Request: PUT /deviceManager/rest/210235843710E7000007/storagepool/0
{
   "DESCRIPTION": "123123"
}

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.8.1.4 Query

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2.8.1.4.1 Interface for Batch Querying Storage Pool Information

Function

This interface is used to batch query basic information about storage pools.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, RUNNINGSTATUS, HEALTHSTATUS, and ISCONTAINERENABLE are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 216: storage pool
ID	Mandatory	string	Storage pool ID.
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: Pre-copy 16: Rebuilt 27: Online 28: Offline 32: Balancing 53: Initializing 106: Deleting
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** ID of the disk domain.
PARENTNAME	Mandatory	string	Name of the parent object. **The value is described as follows:** Name of the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded
DESCRIPTION	Mandatory	string	Description.
USERTOTALCAPACITY	Mandatory	string(uint64)	Total capacity.
USERFREECAPACITY	Mandatory	string(uint64)	Free capacity.
USERCONSUMEDCAPACITY	Mandatory	string(uint64)	Used capacity.
USERCONSUMEDCAPACITYPERCENTAGE	Mandatory	string(uint32)	Used capacity ratio.
USERCONSUMEDCAPACITYTHRESHOLD	Mandatory	string(uint32)	Used capacity threshold.
TIER0RAIDLV	Mandatory	string(enum)	Tier 0 protection level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP **Note:**0 is returned if this field is invalid.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type of tier 0. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**0 is returned if this field is invalid.
TIER0CAPACITY	Mandatory	string(uint64)	Raw capacity of tier 0, expressed in sectors. **Note:**0 is returned if this field is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
REPLICATIONCAPACITY	Mandatory	string(uint64)	Capacity consumed by all LUNs for data protection. **Note:**The capacity is used for snapshot COW.
DATASPACE	Mandatory	string(uint64)	Available capacity for creating LUNs in the storage pool. **Note:**The value equals the remaining storage pool capacity minus metadata capacity.
USAGETYPE	Mandatory	string(enum)	Storage pool usage (this field is no longer used). **The value is described as follows:** -
LUNCONFIGEDCAPACITY	Mandatory	string(uint64)	Configured capacity of a LUN.
SPACEREDUCTIONRATE	Mandatory	string(json)	Data reduction ratio.
DEDUPLICATIONRATE	Mandatory	string(json)	Data duplication ratio.
COMPRESSIONRATE	Mandatory	string(json)	Data compression ratio.
THINPROVISIONSAVEPERCENTAGE	Mandatory	string(json)	Ratio of space saved by thin LUNs.
SAVECAPACITYRATE	Mandatory	string(json)	Total space saving ratio.
ENDINGUPTHRESHOLD	Mandatory	string(uint32)	Used-up threshold.
TOTALLUNWRITECAPACITY	Mandatory	string(uint32)	Used capacity of LUNs, excluding the protection capacity.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 266: disk domain

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSEDCAPACITY	Mandatory	string(uint64)	Capacity saved by compression.
COMPRESSINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for compression.
DEDUPEDCAPACITY	Mandatory	string(uint64)	Capacity saved by deduplication.
DEDUPINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for deduplication.
REDUCTIONINVOLVEDCAPACITY	Mandatory	string(uint64)	Capacity for compression and deduplication.
USERCONSUMEDCAPACITYWITHOUTMETA	Mandatory	string(uint64)	Used capacity (metadata excluded).
USERWRITEALLOCCAPACITY	Mandatory	string(uint64)	Data capacity.
PROVISIONINGLIMITSWITCH	Mandatory	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** false: off true: on
PROVISIONINGLIMIT	Mandatory	string(uint32)	Thin LUN provisioning limit. **The value is described as follows:** 0~65535 **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. A valid provisioning limit is returned when the value of "PROVISIONINGLIMITSWITCH" is 1. 3. When the value of "PROVISIONINGLIMITSWITCH" is 0, -1 is returned which is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
autoDeleteSwitch	Mandatory	enum	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on
poolProtectLowThreshold	Mandatory	string(uint32)	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1 to 95
poolProtectHighThreshold	Mandatory	string(uint32)	High threshold of the storage pool protection capacity. **The value is described as follows:** 2 to 99
protectSize	Mandatory	string(uint64)	Protection capacity of a storage pool after deduplication and compression.
FSUSEDSUBSCRIBEDCAPACITY	Mandatory	string(uint64)	Sum of used subscribed capacity of all file systems in the storage pool.
SUBSCRIBEDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of the storage pool.
USEDSUBSCRIBEDCAPACITY	Mandatory	string(uint64)	Used subscribed capacity of the storage pool.
TOTALFSCAPACITY	Mandatory	string(uint64)	Total capacity of a file system.

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Parameter	Mandatory/ Conditional	Type	Description
ISCONTAINERENABLE	Mandatory	bool	Whether the storage pool applies to container configuration services. **The value is described as follows:** The value can be "true" or "false", where: 1:"true": The storage pool applies to the container configuration. 2:"false": The storage pool does not apply to the container configuration.
FSSUBSCRIBEDCAPAC-ITY	Mandatory	string(uint64)	Total subscribed capacity of all file systems in the storage pool.
LUNMAPPEDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of mapped LUNs in the storage pool.
FSSHAREDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of shared file systems in the storage pool.
TIER1CAPACITY	Mandatory	string(uint64)	Usable capacity of tier 1, expressed in sectors. **Note:**If this parameter is invalid, 18446744073709551615 is returned.
TIER2CAPACITY	Mandatory	string(uint64)	Usable capacity of tier 2, expressed in sectors. **Note:**If this parameter is invalid, 18446744073709551615 is returned.
fsSpaceReductionRate	Mandatory	string(json)	Data reduction ratio for file systems.

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Parameter	Mandatory/ Conditional	Type	Description
lunSpaceReduction-Rate	Mandatory	string(json)	LUN data reduction ratio.
NEWUSAGETYPE	Mandatory	uint32	Storage pool usage. **The value is described as follows:** 0: LUNs and file systems are supported. 1: LUNs are supported. 2: File systems are supported.
performanceLayerId	Mandatory	string(uint32)	ID of the performance layer.
performanceLayerCa-pacity	Mandatory	string(uint64)	Capacity of the performance layer.
performanceLayerU-sedCapacity	Mandatory	string(uint64)	Used capacity of the performance layer.
performanceLayer-HitCnt	Mandatory	string(uint64)	Number of read performance layer hits.
performanceLayerHi-tRatio	Mandatory	string(uint32)	Read performance layer hit ratio (%).

Usage Guidelines

Before performing this operation, ensure that the storage pool ID is correct and exists.

Example

- Batch querying basic information about storage pools.

```
Request: GET /deviceManager/rest/210235843710E7000007/storagepool?range=[0-100]

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "ENDINGUPTHRESHOLD": "90",
         "ID": "0",
         "TIER0CAPACITY": "18446744073709551615",
         "TIER1CAPACITY": "6688675840",
         "TIER2CAPACITY": "18446744073709551615",
         "NAME": "test",
         "PARENTID": "0",
         "PARENTTYPE": 266,
         "PROVISIONINGLIMIT": "-1",
         "PROVISIONINGLIMITSWITCH": "false",
```

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```
            "TIER0DISKTYPE": "3",
            "TIER0RAIDLV": "5",
            "USAGETYPE": "1",
            "USERCONSUMEDCAPACITYTHRESHOLD": "80",
            "autoDeleteSwitch": "0",
            "fsSpaceReductionRate": "",
            "lunSpaceReductionRate": "",
            "poolProtectHighThreshold": "30",
            "poolProtectLowThreshold": "20",
            "COMPRESSEDCAPACITY": "0",
            "COMPRESSINVOLVEDCAPACITY": "0",
            "COMPRESSIONRATE": "",
            "DATASPACE": "6688675840",
            "DEDUPEDCAPACITY": "0",
            "DEDUPINVOLVEDCAPACITY": "0",
            "DEDUPLICATIONRATE": "",
            "FSSHAREDCAPACITY": "0",
            "FSSUBSCRIBEDCAPACITY": "0",
            "FSUSEDCAPACITY": "0",
            "HEALTHSTATUS": "1",
            "ISCONTAINERENABLE": "false",
            "LUNCONFIGEDCAPACITY": "104857600",
            "LUNMAPPEDCAPACITY": "0",
            "NEWUSAGETYPE": "0",
            "PARENTNAME": "test",
            "REDUCTIONINVOLVEDCAPACITY": "0",
            "REPLICATIONCAPACITY": "0",
            "RUNNINGSTATUS": "27",
            "SAVECAPACITYRATE": "",
            "SPACEREDUCTIONRATE": "",
            "SUBSCRIBEDCAPACITY": "104857600",
            "THINPROVISIONSAVEPERCENTAGE": "{\"numerator\":\"1000\", \"denominator\":\"10\",\"logic
\":\"=\"}",
            "TOTALFSCAPACITY": "0",
            "TOTALLUNWRITECAPACITY": "0",
            "USEDSUBSCRIBEDCAPACITY": "0",
            "USERCONSUMEDCAPACITY": "0",
            "USERCONSUMEDCAPACITYPERCENTAGE": "0",
            "USERCONSUMEDCAPACITYWITHOUTMETA": "0",
            "USERFREECAPACITY": "6688675840",
            "USERTOTALCAPACITY": "6688675840",
            "USERWRITEALLOCCAPACITY": "0",
            "protectSize": "0",
            "TYPE": 216,
        "performanceLayerId": 0,
            "performanceLayerCapacity": 15032385536,
            "performanceLayerUsedCapacity": 0,
            "performanceLayerHitCnt": 0,
            "performanceLayerHitRatio": 0
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.1.4.2 Interface for Querying Storage Pool Data Information

Function

This interface is used to query basic data information about a specified storage pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool_data_info/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 216: storage pool
ID	Mandatory	string	Storage pool ID.
SPACEREDUCTIONRATE	Mandatory	string(json)	Data reduction ratio.
DEDUPLICATIONRATE	Mandatory	string(json)	Data deduplication ratio.
COMPRESSIONRATE	Mandatory	string(json)	Data compression ratio.
SAVECAPACITYRATE	Mandatory	string(json)	Total space saving ratio.
isDisplayDeduplicationRatio	Mandatory	bool	Whether to display the deduplication ratio.
isDisplayCompressionRatio	Mandatory	bool	Whether to display the compression ratio.
isDisplayDataReductionRatio	Mandatory	bool	Whether to display the data reduction ratio.
lunSpaceReductionRate	Mandatory	json	LUN data reduction ratio.
fsSpaceReductionRate	Mandatory	json	Data reduction ratio of the file system.

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Example

- Querying basic data information about storage pools.

```
Request: GET/deviceManager/rest/210235843710E7000007/storagepool_data_info/0

Response:
{
   "data": {
      "ID":"0",
      "TYPE":216,
      "COMPRESSIONRATE":"{"numerator":"10", "denominator":"10","logic":"="}",
      "DEDUPLICATIONRATE":"{"numerator":"10", "denominator":"10","logic":"="}",
      "SAVECAPACITYRATE":"{"numerator":"10", "denominator":"10","logic":"="}",
      "SPACEREDUCTIONRATE":"{"numerator":"1000", "denominator":"1000","logic":"="}",
      "lunSpaceReductionRate":"{"numerator":"1000", "denominator":"1000","logic":"="}",
      "fsSpaceReductionRate":"{"numerator":"1000", "denominator":"1000","logic":"="}",
      "isDisplayDeduplicationRatio":true,
      "isDisplayCompressionRatio":true,
      "isDisplayDataReductionRatio":true,
},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.8.1.4.3 Interface for Querying Storage Pool Information

Function

This interface is used to query basic information about a storage pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Storage pool ID.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 216: storage pool
ID	Mandatory	string	Storage pool ID.
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** ID of the disk domain.
PARENTNAME	Mandatory	string	Name of the parent object. **The value is described as follows:** Name of the disk domain.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: Pre-copy 16: Rebuilt 27: Online 28: Offline 32: Balancing 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.
USERTOTALCAPACITY	Mandatory	string(uint64)	Total capacity.
USERFREECAPACITY	Mandatory	string(uint64)	Free capacity.
USERCONSUMEDCAPACITY	Mandatory	string(uint64)	Used capacity.
USERCONSUMEDCAPACITYPERCENTAGE	Mandatory	string(uint32)	Used capacity ratio.
USERCONSUMEDCAPACITYTHRESHOLD	Mandatory	string(uint32)	Used capacity threshold.
TIER0RAIDLV	Mandatory	string(enum)	Tier 0 protection level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP **Note:**0 is returned if this field is invalid.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type of tier 0. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**0 is returned if this field is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
TIER0CAPACITY	Mandatory	string(uint64)	Usable capacity of tier 0, expressed in sectors. **Note:**0 is returned if this field is invalid.
REPLICATIONCAPACITY	Mandatory	string(uint64)	Capacity consumed by all LUNs for data protection. **The value is described as follows:** The capacity is used for snapshot COW.
DATASPACE	Mandatory	string(uint64)	Available capacity for creating LUNs in the storage pool. **The value is described as follows:** The value equals the remaining storage pool capacity minus metadata capacity.
LUNCONFIGEDCAPACITY	Mandatory	string(uint64)	Configured capacity of a LUN.
USAGETYPE	Mandatory	string(enum)	Storage pool usage (this field is no longer used). **The value is described as follows:** -
SPACEREDUCTIONRATE	Mandatory	string(json)	Data reduction ratio.
DEDUPLICATIONRATE	Mandatory	string(json)	Data duplication ratio.
COMPRESSIONRATE	Mandatory	string(json)	Data compression ratio.
THINPROVISIONSAVEPERCENTAGE	Mandatory	string(json)	Ratio of space saved by thin LUNs.
SAVECAPACITYRATE	Mandatory	string(json)	Total space saving ratio.
ENDINGUPTHRESHOLD	Mandatory	string(uint32)	Used-up threshold.

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Parameter	Mandatory/ Conditional	Type	Description
TOTALLUNWRITECA-PACITY	Mandatory	string(uint32)	Used capacity of LUNs, excluding the protection capacity.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 266: disk domain
COMPRESSEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by compression.
COMPRESSINVOLVED-CAPACITY	Mandatory	string(uint64)	Capacity for compression.
DEDUPEDCAPACITY	Mandatory	string(uint64)	Capacity saved by deduplication.
DEDUPINVOLVEDCA-PACITY	Mandatory	string(uint64)	Capacity for deduplication.
REDUCTIONINVOLVED CAPACITY	Mandatory	string(uint64)	Capacity for compression and deduplication.
USERCONSUMEDCAP ACITYWITHOUTMETA	Mandatory	string(uint64)	Used capacity (metadata excluded).
USERWRITEALLOCCA-PACITY	Mandatory	string(uint64)	Data capacity.
PROVISIONINGLIMITS WITCH	Mandatory	bool	Switch of setting the thin LUN provisioning limit. **The value is described as follows:** false: off true: on

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Parameter	Mandatory/ Conditional	Type	Description
PROVISIONINGLIMIT	Mandatory	string(uint32)	Thin LUN provisioning limit. **The value is described as follows:** 0~65535 **Note:** 1. The provisioning limit is a percentage, for example, 100 indicates 100%. 2. A valid provisioning limit is returned when the value of "PROVISIONINGLIMITSWITCH" is 1. 3. When the value of "PROVISIONINGLIMITSWITCH" is 0, -1 is returned which is an invalid value.
autoDeleteSwitch	Mandatory	enum	Automatic deletion switch of a storage pool. **The value is described as follows:** 0: off 1: on
poolProtectLowThreshold	Mandatory	string(uint32)	Low threshold of the storage pool protection capacity. **The value is described as follows:** 1 to 95
poolProtectHighThreshold	Mandatory	string(uint32)	High threshold of the storage pool protection capacity. **The value is described as follows:** 2 to 99
protectSize	Mandatory	string(uint64)	Protection capacity of a storage pool after deduplication and compression.

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Parameter	Mandatory/ Conditional	Type	Description
FSUSEDSUBSCRIBED-CAPACITY	Mandatory	string(uint64)	Sum of used subscribed capacity of all file systems in the storage pool.
SUBSCRIBEDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of the storage pool.
USEDSUBSCRIBEDCA-PACITY	Mandatory	string(uint64)	Used subscribed capacity of the storage pool.
FSSUBSCRIBEDCAPAC-ITY	Mandatory	string(uint64)	Total subscribed capacity of all file systems in the storage pool.
TOTALFSCAPACITY	Mandatory	string(uint64)	Total capacity of a file system.
ISCONTAINERENABLE	Mandatory	bool	Whether the storage pool applies to container configuration services. **The value is described as follows:** The value can be "true" or "false", where: 1:"true": The storage pool applies to the container configuration. 2:"false": The storage pool does not apply to the container configuration.
LUNMAPPEDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of mapped LUNs in the storage pool.
FSSHAREDCAPACITY	Mandatory	string(uint64)	Total subscribed capacity of shared file systems in the storage pool.

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Parameter	Mandatory/ Conditional	Type	Description
NEWUSAGETYPE	Mandatory	string(uint32)	Storage pool usage. **Note:** 0: LUNs and file systems are supported. 1: LUNs are supported. 2: File systems are supported.
lunSpaceReduction-Rate	Mandatory	string(json)	LUN data reduction ratio.
fsSpaceReductionRate	Mandatory	string(json)	Data reduction ratio for file systems.
TIER2CAPACITY	Mandatory	string(uint64)	Usable capacity of tier 2, expressed in sectors. **Note:**If this parameter is invalid, 18446744073709551615 is returned.
TIER1CAPACITY	Mandatory	string(uint64)	Usable capacity of tier 1, expressed in sectors. **Note:**If this parameter is invalid, 18446744073709551615 is returned.
performanceLayerId	Mandatory	string(uint32)	ID of the performance layer.
performanceLayerCa-pacity	Mandatory	string(uint64)	Capacity of the performance layer.
performanceLayerU-sedCapacity	Mandatory	string(uint64)	Used capacity of the performance layer.
performanceLayer-HitCnt	Mandatory	string(uint64)	Number of read performance layer hits.
performanceLayerHi-tRatio	Mandatory	string(uint32)	Read performance layer hit ratio (%).

Usage Guidelines

Before performing this operation, ensure that the storage pool ID is correct and exists.

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Example

- Querying basic information about a storage pool.

```
Request: GET /deviceManager/rest/210235843710E7000007/storagepool/0

Response:
{
   "data": {
      "DESCRIPTION": "",
      "ENDINGUPTHRESHOLD": "90",
      "ID": "0",
      "TIER0CAPACITY": "18446744073709551615",
      "TIER1CAPACITY": "6688675840",
      "TIER2CAPACITY": "18446744073709551615",
      "NAME": "test",
      "PARENTID": "0",
      "PARENTTYPE": 266,
      "PROVISIONINGLIMIT": "-1",
      "PROVISIONINGLIMITSWITCH": "false",
      "TIER0DISKTYPE": "3",
      "TIER0RAIDLV": "5",
      "USAGETYPE": "1",
      "USERCONSUMEDCAPACITYTHRESHOLD": "80",
      "autoDeleteSwitch": "0",
      "fsSpaceReductionRate": "",
      "lunSpaceReductionRate": "",
      "poolProtectHighThreshold": "30",
      "poolProtectLowThreshold": "20",
      "COMPRESSEDCAPACITY": "0",
      "COMPRESSINVOLVEDCAPACITY": "0",
      "COMPRESSIONRATE": "",
      "DATASPACE": "6688675840",
      "DEDUPEDCAPACITY": "0",
      "DEDUPINVOLVEDCAPACITY": "0",
      "DEDUPLICATIONRATE": "",
      "FSSHAREDCAPACITY": "0",
      "FSSUBSCRIBEDCAPACITY": "0",
      "FSUSEDCAPACITY": "0",
      "HEALTHSTATUS": "1",
      "ISCONTAINERENABLE": "false",
      "LUNCONFIGEDCAPACITY": "104857600",
      "LUNMAPPEDCAPACITY": "0",
      "NEWUSAGETYPE": "0",
      "PARENTNAME": "test",
      "REDUCTIONINVOLVEDCAPACITY": "0",
      "REPLICATIONCAPACITY": "0",
      "RUNNINGSTATUS": "27",
      "SAVECAPACITYRATE": "",
      "SPACEREDUCTIONRATE": "",
      "SUBSCRIBEDCAPACITY": "104857600",
      "THINPROVISIONSAVEPERCENTAGE": "{\"numerator\":\"1000\", \"denominator\":\"10\",\"logic
\":\"=\"}",
      "TOTALFSCAPACITY": "0",
      "TOTALLUNWRITECAPACITY": "0",
      "USEDSUBSCRIBEDCAPACITY": "0",
      "USERCONSUMEDCAPACITY": "0",
      "USERCONSUMEDCAPACITYPERCENTAGE": "0",
      "USERCONSUMEDCAPACITYWITHOUTMETA": "0",
      "USERFREECAPACITY": "6688675840",
      "USERTOTALCAPACITY": "6688675840",
      "USERWRITEALLOCCAPACITY": "0",
      "protectSize": "0",
      "TYPE": 216,
      "performanceLayerId": 0,
      "performanceLayerCapacity": 15032385536,
      "performanceLayerUsedCapacity": 0,
      "performanceLayerHitCnt": 0,
      "performanceLayerHitRatio": 0
},
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.1.4.4 Interface for Querying the Number of Storage Pools

Function

This interface is used to query the number of storage pools.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/storagepool/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameters ID, NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried storage pools.

Example

- Querying the number of storage pools.

```
Request: GET /deviceManager/rest/210235843910E6000009/storagepool/count

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.8.1.5 Others

2.8.2 disk_domain

2.8.2.1 Add

2.8.2.1.1 Interface for Creating a Performance Layer

Function

Create a performance layer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performancelayer

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjIDList	Mandatory	array	ID of the associated disk list.
allEngineDiskInfo	Optional	json	Information about all controller enclosure disks.
diskNum	Optional	int32	Number of member disks.
tier0DiskType	Optional	enum	Types of SCM drives supported by the high-performance tier. **The value is described as follows:** 3: SSD 10: SSD_SED 14: NVMe_SSD 16: NVMe_SSD SED
engineIdList	Optional	array	Controller enclosure ID list.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ownerControllerList	Optional	array	Owning controller ID list.
engineInfo	Optional	json	Information about disks on the engine.
currentDiskInfo	Optional	json	Information about the current hard disk.
diskNumList	Optional	array	Indicates the list of disks.
diskCapacityList	Optional	array	Indicates the disk capacity list.
name	Mandatory	string	Name of a performance layer. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255
id	Optional	string	Performance Layer ID. **The value is described as follows:** The value is an integer ranging from 0 to 63.
type	Optional	enum	Type of a performance layer. **Note:**If the REST interface does not deliver this field, this field is filled by default. The default value is 638.
description	Optional	string	Description of the performance layer. **The value is described as follows:** - **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
shareStrategy	Optional	enum	Share policy. **The value is described as follows:** 0: Share; 1: Unique
SSDhotspareStrategy	Optional		SSD hot spare policy. **The value is described as follows:** 1: low 2: High 3: none 4:0 5:1 6:2 7:3 8:4 9:5 10:6 11:7 12:8
encryptAlgorithm	Optional	enum	Disk encryption algorithm. SM4 is supported only in the Chinese mainland. **The value is described as follows:** 0: SM4 1: AES

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	Performance layer ID. **The value is described as follows:** 0-63
diskNum	Mandatory	int32	Number of member disks.

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Example

- Create a performance layer.

```
Request: POST/deviceManager/rest/210235843710E7000007/performancelayer
{
	"associateObjIDList": ["134217729","134217730"],
	"name":"newsmartpool"
	"shareStrategy":"0"
}
Response:
{
	"data":
	 {
		"id":"1",
		"diskNum":"2"
	},
	"error":
	{
		"code": 0,
		"description": "0"
	}
}
```

- Creates a performance layer with an ID.

```
Request: POST/deviceManager/rest/210235843710E7000007/performancelayer
{
	"associateObjIDList": ["134217729","134217730"],
	"name":"newsmartpool",
	"id":4
	"shareStrategy":"0"
	"SSDhotspareStrategy":"0"
}
Response:
{
	"data":
	 {
		"id":"4",
		"diskNum":"2"
	},
	"error":
	{
		"code": 0,
		"description": "0"
	}
}
```

2.8.2.1.2 (Not Recommended) Interface for Creating a Disk Domain

Function

This interface is used to create a disk domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
ID	Optional	uint32	Disk domain ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** The field is not used. Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Optional	enum	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Default:**1: low
SSDDISKNUM	Conditional	uint32	Number of member SSDs. **The value is described as follows:** The disks are automatically selected for disk domain creation and expansion. -1 indicates that all free SSDs are automatically selected. **Note:**If ASSOCIATEOBJIDLIST is not delivered, this field must be delivered.
TIER0DISKTYPE	Optional	enum	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**The mixed use of the four types of disks is not supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BALANCEMODE	Optional	enum	Load balancing mode. **The value is described as follows:** 1: auto 2: manual **Note:**The field is not used.
ENGINEIDLIST	Optional	array	List of controller enclosures. **Default:**Automatic selection. **Note:**Owning controller enclosure.
ENCRYPTDISKTYPE	Optional	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain **Default:**0: Standard disk domain
OWNERCONTROLLER-LIST	Optional	array	Owning controller ID list. **Default:**Automatic selection.
ASSOCIATEOBJIDLIST	Conditional	array	IDs of the disks selected to create a disk domain. **The value is described as follows:** For example, ["32", "33", "34", "38"]. **Note:**If SSDDISKNUM is not delivered, this field must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
redundancyStrategy	Optional	enum	Redundancy policy for the disk domain. **The value is described as follows:** 0: disk 1: enclosure **Default:**0: disk
RAIDLEVEL	Optional	enum	RAID level. [NOTE:Disks added to a disk domain are divided into fixed-sized logical blocks, and are grouped in accordance with the selected RAID level. By purpose, those logical blocks are categorized as data blocks and parity blocks.] **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP **Default:**5: RAID 6
diskEncryptionAlgorithm	Optional	enum	Disk encryption algorithm. SM4 is supported only in the Chinese mainland. **The value is described as follows:** 0: SM4 1: AES

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 266: disk domain
ID	Mandatory	string	Disk domain ID.
FORMATPROGRESS	Mandatory	string(uint32)	Formatting progress.
FREECAPACITYLIST	Mandatory	string	List of free capacities for the member disks at each tier.
TIER0RAIDLV	Mandatory	enum	RAID level of tier 0 of a storage pool. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP
SCMHOTSPARESTRAT-EGY	Mandatory	enum	SCM drive hot spare policy. **The value is described as follows:** 1: low 2: high 3: none
FORMATREMAINTIME	Mandatory	string(uint32)	Remaining formatting time.
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 53: Initializing
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value contains 0 to 255 characters.
TOTALCAPACITY	Mandatory	string(uint64)	Total available raw capacity.
SPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw capacity.
USEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw capacity.
FREECAPACITY	Mandatory	string(uint64)	Free capacity.
SSDTOTALCAPACITY	Mandatory	string(uint64)	Total available raw SSD capacity.
SSDSPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw SSD capacity.
SSDUSEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw SSD capacity.
SSDFREECAPACITY	Mandatory	string(uint64)	Free raw SSD capacity.

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Parameter	Mandatory/ Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Mandatory	string(enum)	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**0 is returned if this field is invalid.
SSDDISKNUM	Mandatory	string(uint32)	Number of member SSDs.
USEDCAPACITY	Mandatory	string(uint64)	Allocated raw capacity.
SSDUSEDCAPACITY	Mandatory	string(uint64)	Allocated raw SSD capacity.
ASSOCIATEOBJID	Mandatory	string(array)	Invalid to a single object. It applies only to batch creating association relationships. For example, associate several disks with a pool at a time.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**-1 is returned if this field is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
ENCRYPTDISKTYPE	Mandatory	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain
ENGINEIDLIST	Mandatory	string	List of controller enclosures. **Note:**Owning controller enclosure.
abrasionRate	Mandatory	string(uint32)	Wear degree, that is, the percentage of the used service life of a disk.
remainLife	Mandatory	string(uint32)	Remaining service life.
enduranceBalanceStatus	Mandatory	string(enum)	Wear leveling status. **The value is described as follows:** 0: Wear leveling 1: Anti wear leveling 2: Unknown leveling (Maybe the disk domain is in creation.)
unbalanceDiskIdList	Mandatory	string(array)	ID list of anti-wear leveling disks.
OWNERCONTROLLERLIST	Mandatory	string	Owning controller ID list.
ENGINEINFO	Mandatory	string(json)	Information about the controller enclosure.
SSDhotspareDiskNum	Mandatory	string(uint32)	Number of hot spare SSDs.
redundancyStrategy	Mandatory	string(enum)	Redundancy policy for the disk domain. **The value is described as follows:** 0: disk 1: enclosure

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Parameter	Mandatory/ Conditional	Type	Description
redundancyAbility	Mandatory	string(enum)	Redundancy ability for the disk domain. **The value is described as follows:** 0: disk 1: enclosure 2: none
RAIDLEVEL	Mandatory	enum	RAID level. [NOTE:Disks added to a disk domain are divided into fixed-sized logical blocks, and are grouped in accordance with the selected RAID level. By purpose, those logical blocks are categorized as data blocks and parity blocks.] **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP
diskEncryptionAlgorithm	Conditional	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES

Usage Guidelines

If all-flash disk domains are required, create an all-flash disk domain before creating a hybrid flash disk domain.

Example

- Creating a disk domain.

```
Request: POST/deviceManager/rest/210235843710E7000007/diskpool{
   "NAME": "DiskDomain002",
   "DESCRIPTION": "hehe",
   "SSDDISKNUM": -1,
   "ENCRYPTDISKTYPE": "0",
   "ENGINEIDLIST": [
      "CTE0"
```

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```
    ],
    "OWNERCONTROLLERLIST": [
        "0A",
        "0B"
    ]
}Response: {
    "data": {
        "DESCRIPTION": "hehe",
        "ENCRYPTDISKTYPE": "0",
        "ENGINEIDLIST": "CTE0",
        "NAME": "DiskDomain002",
        "OWNERCONTROLLERLIST": "0A,0B",
        "SSDDISKNUM": "11",
        "TYPE": 266,
        "ID": "0",
        "HEALTHSTATUS": "1",
        "RUNNINGSTATUS": "53",
        "ASSOCIATEOBJID": "[\"134234114\", \"134234113\", \"134234115\", \"134234121\",
\"134234123\", \"134234125\", \"134234130\", \"134234126\", \"134234132\", \"134234131\",
\"134234129\"]",
        "SSDHOTSPARESTRATEGY": "1",
        "TIER0DISKTYPE": "3",
        "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"SSD\",\n\t\t\t\"diskNum\":\t\"11\",\n\t\t
\t\"controller\":\t\"0A,0B\"\n\t\t}]\n}",
        "redundancyStrategy": "0",
        "SSDhotspareDiskNum": "",
        "FORMATPROGRESS": "0",
        "FORMATREMAINTIME": "0",
        "FREECAPACITY": "0",
        "FREECAPACITYLIST": "--",
        "SCMHOTSPARESTRATEGY": "",
        "SPARECAPACITY": "0",
        "SSDUSEDSPARECAPACITY": "0",
        "TIER0RAIDLV": "",
        "TOTALCAPACITY": "0",
        "USEDCAPACITY": "0",
        "USEDSPARECAPACITY": "0",
        "abrasionRate": "0",
        "enduranceBalanceStatus": "0",
        "redundancyAbility": "",
        "remainLife": "0",
        "unbalanceDiskIdList": "--"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.2.1.3 (Not Recommended) Interface for Creating a Disk Domain*

Function

This interface is used to create a disk domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpoolrest

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
ID	Optional	uint32	Disk domain ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** The field is not used. Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Optional	enum	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Default:**1: low
SSDDISKNUM	Conditional	uint32	Number of member SSDs. **The value is described as follows:** The disks are automatically selected for disk domain creation and expansion. -1 indicates that all free SSDs are automatically selected. **Note:**If ASSOCIATEOBJIDLIST is not delivered, this field must be delivered.
TIER0DISKTYPE	Optional	enum	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**The mixed use of the four types of disks is not supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BALANCEMODE	Optional	enum	Load balancing mode. **The value is described as follows:** 1: auto 2: manual **Note:**The field is not used.
ENGINEIDLIST	Optional	array	List of controller enclosures. **Default:**Automatic selection. **Note:**Owning controller enclosure.
ENCRYPTDISKTYPE	Optional	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain **Default:**0: Standard disk domain
OWNERCONTROLLER-LIST	Optional	array	Owning controller ID list. **Default:**Automatic selection.
ASSOCIATEOBJIDLIST	Conditional	array	IDs of the disks selected to create a disk domain. **The value is described as follows:** For example, ["32", "33", "34", "38"]. **Note:**If SSDDISKNUM is not delivered, this field must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
redundancyStrategy	Optional	enum	Redundancy policy for the disk domain. **The value is described as follows:** 0: disk 1: enclosure **Default:**0: disk
RAIDLEVEL	Optional	enum	RAID level. [NOTE:Disks added to a disk domain are divided into fixed-sized logical blocks, and are grouped in accordance with the selected RAID level. By purpose, those logical blocks are categorized as data blocks and parity blocks.] **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP **Default:**5: RAID 6
diskEncryptionAlgorithm	Optional	enum	Disk encryption algorithm. SM4 is supported only in the Chinese mainland. **The value is described as follows:** 0: SM4 1: AES

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 266: disk domain
SCMUSEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw SCM drive capacity.
SCMTOTALCAPACITY	Mandatory	string(uint64)	Total available raw SCM drive capacity.
ID	Mandatory	string	Disk domain ID.
FORMATPROGRESS	Mandatory	string(uint32)	Formatting progress.
FREECAPACITYLIST	Mandatory	string	List of free capacities for the member disks at each tier.
TIER0RAIDLV	Mandatory	enum	RAID level of tier 0 of a storage pool. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP
SCMHOTSPARESTRATEGY	Mandatory	enum	SCM drive hot spare policy. **The value is described as follows:** 1: low 2: high 3: none
diskEncryptionAlgorithm	Conditional	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES
FORMATREMAINTIME	Mandatory	string(uint32)	Remaining formatting time.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 53: Initializing
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value contains 0 to 255 characters.
TOTALCAPACITY	Mandatory	string(uint64)	Total available raw capacity.
SPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw capacity.
USEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw capacity.
FREECAPACITY	Mandatory	string(uint64)	Free capacity.
SSDTOTALCAPACITY	Mandatory	string(uint64)	Total available raw SSD capacity.
SSDSPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw SSD capacity.
SSDUSEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw SSD capacity.
SSDFREECAPACITY	Mandatory	string(uint64)	Free raw SSD capacity.

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Parameter	Mandatory/ Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Mandatory	string(enum)	Hot spare policy of a disk domain. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**0 is returned if this field is invalid.
SSDDISKNUM	Mandatory	string(uint32)	Number of member SSDs.
USEDCAPACITY	Mandatory	string(uint64)	Allocated raw capacity.
SSDUSEDCAPACITY	Mandatory	string(uint64)	Allocated raw SSD capacity.
ASSOCIATEOBJID	Mandatory	string(array)	Invalid to a single object. It applies only to batch creating association relationships. For example, associate several disks with a pool at a time.

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Parameter	Mandatory/ Conditional	Type	Description
TIER0DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**-1 is returned if this field is invalid.
ENCRYPTDISKTYPE	Mandatory	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain
ENGINEIDLIST	Mandatory	string	List of controller enclosures. **Note:**Owning controller enclosure.
abrasionRate	Mandatory	string(uint32)	Wear degree, that is, the percentage of the used service life of a disk.
remainLife	Mandatory	string(uint32)	Remaining service life.
enduranceBalanceStatus	Mandatory	string(enum)	Wear leveling status. **The value is described as follows:** 0: Wear leveling 1: Anti wear leveling 2: Unknown leveling (Maybe the disk domain is in creation.)
unbalanceDiskIdList	Mandatory	string(array)	ID list of anti-wear leveling disks.
OWNERCONTROLLERLIST	Mandatory	string	Owning controller ID list.
ENGINEINFO	Mandatory	string(json)	Information about the controller enclosure.

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Parameter	Mandatory/ Conditional	Type	Description
SSDhotspareDiskNum	Mandatory	string(uint32)	Number of hot spare SSDs.
redundancyStrategy	Mandatory	string(enum)	Redundancy policy for the disk domain. **The value is described as follows:** 0: disk 1: enclosure
redundancyAbility	Mandatory	string(enum)	Redundancy ability for the disk domain. **The value is described as follows:** 0: disk 1: enclosure 2: none
RAIDLEVEL	Mandatory	enum	RAID level. [NOTE:Disks added to a disk domain are divided into fixed-sized logical blocks, and are grouped in accordance with the selected RAID level. By purpose, those logical blocks are categorized as data blocks and parity blocks.] **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP
SCMDISKNUM	Mandatory	string(uint32)	Number of member SCM drives.
SCMFREECAPACITY	Mandatory	string(uint64)	Free raw SCM drive capacity.
SCMSPARECAPACITY	Mandatory	string(uint64)	Total hot spare raw SCM drive capacity.
SSDTIERDISKNUM	Mandatory	string(uint32)	Number of member SSDs.

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Parameter	Mandatory/ Conditional	Type	Description
SSDTIERHOTSPARES-TRATEGY	Mandatory	string(uint32)	SSD hot spare policy.

Usage Guidelines

1. This command is not recommended.

2. If you want to create an all-flash disk domain, create an all-flash disk domain before creating a hybrid-flash disk domain.

Example

- Creating a disk domain.

```
Request: POST/deviceManager/rest/210235843710E7000007/diskpoolrest{
   "NAME": "DiskDomain001",
   "DESCRIPTION": "hello",
   "SSDDISKNUM": -1,
   "ENCRYPTDISKTYPE": "0",
   "ENGINEIDLIST": [
      "CTE0"
   ],
   "OWNERCONTROLLERLIST": [
      "0A",
      "0B"
   ]
}Response: {
   "data": {
      DESCRIPTION: "hello",
      ENCRYPTDISKTYPE: "0",
      ENGINEIDLIST: "CTE0",
      NAME: "DiskDomain001",
      OWNERCONTROLLERLIST: "0A,0B",
      SSDDISKNUM: "9",
      TYPE: 266,
      ID: "0",
      HEALTHSTATUS: "1",
      RUNNINGSTATUS: "53",
      ASSOCIATEOBJID: "[\"134234112\", \"134234114\", \"134234117\", \"134234119\",
\"134234116\", \"134234118\", \"134234115\", \"134234113\", \"134234120\"]",
      SSDHOTSPARESTRATEGY: "1",
      TIER0DISKTYPE: "3",
      ENGINEINFO: "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"SSD\",\n\t\t\t\"diskNum\":\t\"9\",\n\t\t\t
\"controller\":\t\"0A,0B\"\n\t\t}]\n}",
      redundancyStrategy: "0",
      SSDhotspareDiskNum: "",
      FORMATPROGRESS: "",
      FORMATREMAINTIME: "",
      FREECAPACITY: "",
      FREECAPACITYLIST: "",
      SCMDISKNUM: "",
      SCMFREECAPACITY: "",
      SCMHOTSPARESTRATEGY: "",
      SCMSPARECAPACITY: "",
      SCMTOTALCAPACITY: "",
      SCMUSEDSPARECAPACITY: "",
      SPARECAPACITY: "",
      SSDFREECAPACITY: "",
      SSDSPARECAPACITY: "",
      SSDTIERDISKNUM: "",
      SSDTIERHOTSPARESTRATEGY: "",
```

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```
        SSDTOTALCAPACITY: "",
        SSDUSEDCAPACITY: "",
        SSDUSEDSPARECAPACITY: "",
        TIER0RAIDLV: "",
        TOTALCAPACITY: "",
        USEDCAPACITY: "",
        USEDSPARECAPACITY: "",
        abrasionRate: "",
        enduranceBalanceStatus: "",
        redundancyAbility: "",
        remainLife: "",
        unbalanceDiskIdList: "",
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.2.2 Delete

2.8.2.2.1 Interface for Deleting a Performance Layer

Function

Delete the performance layer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performancelayer

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Optional	string	Indicates the name of the performance layer. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**128

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Parameter	Mandatory/Optional/Conditional	Type	Description
id	Optional	uint32	ID of the performance layer. **The value is described as follows:** The value is an integer ranging from 0 to 63.
deeplyDelete	Optional	bool	Whether to enable deep delete. The default value is common delete. **The value is described as follows:** Yes, No
eraseAction	Optional	enum	Data erasure mechanism. **The value is described as follows:** 0: overwrite; 1: block destruction; 2: key change **Default:**block_erase
eraseStandards	Optional	enum	Data erasure standard. **The value is described as follows:** 0:dod(e);1:dod(ece);2:vsitr;3:custom **Default:**dod(e)
erasePatternList	Optional	array	User-defined data list entered by a user. **The value is described as follows:** The value is a 1-byte hexadecimal number starting with r or 0x, separated by commas (,). A maximum of three bytes can be entered. **Default:**r **Length:**10

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Parameter	Mandatory/Optional/Conditional	Type	Description
eraseCount	Optional	uint32	Times that the user-defined data list entered by the user is written to disks. **The value is described as follows:** The value is an integer ranging from 1 to 15. The default value is 1. **Default:**1
eraseVerify	Optional		Whether to verify the erased data. **The value is described as follows:** The options are as follows: 1:"yes": verifies erased data. 2:"no": does not verify erased data. The default value is "no".
eraseCapacityRatio	Optional		Verify the percentage of erased data to the total disk capacity. **The value is described as follows:** The value ranges from 1 to 100.
eraseType	Optional	enum	Type of data to be erased. **The value is described as follows:** 0: data_all; 1: data_usr **Default:**data_usr

Result

N/A

Example

- Delete a performance layer by ID.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/performancelayer?id=0
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Delete a performance layer by name.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/performancelayer?
name=testPerformanceLayer

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.2.2 (Not Recommended) Interface for Deleting a Disk Domain

Function

This interface is used to delete a disk domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Disk domain ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** The field is not used. Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

Result

N/A

Example

- Delete a disk domain.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/diskpool/0

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.8.2.3 Modify

2.8.2.3.1 Interface for Modifying a Performance Layer

Function

Modify performance layer properties and expand the performance layer capacity.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performancelayer

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	Performance layer ID. **The value is described as follows:** The value ranges from 0 to 63.
diskNumList	Optional	array	Disk quantity list. **The value is described as follows:** For example, ["24"].
diskCapacityList	Optional	array	Disk capacity list. **The value is described as follows:** For example, ["894"].
engineIdList	Optional	array	Controller enclosure ID list.
name	Optional	string	Performance layer name. **Length:**128
autoAllocQuotaType	Optional	enum	0: EXPAND_NO_ALLOC_CAP_TYPE 1: EXPAND_AUTO_ALLOC_CAP. **Default:**0

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Parameter	Mandatory/Optional/Conditional	Type	Description
diskNum	Optional	uint32	Number of disks. **The value is described as follows:** This parameter is used to automatically select disks during capacity expansion. -1 indicates that all idle disks of the type are automatically selected. **Default:**-1 **Note:**If associateObjIDList is not delivered, this parameter must be delivered.
associateObjIDList	Optional	array	List of disks to be added.
hotSpareStrategy	Optional	enum	Hot spare policy. **The value is described as follows:** 1: low; 2: high; 3: none; 4: 0; 5: 1; 6: 2; 7: 3; 8: 4; 9: 5; 10: 6; 11: 7; 12: 8

Result

Parameter	Mandatory/Conditional	Type	Description
diskNum	Conditional		Number of member disks.
id	Conditional		Performance layer ID.

Example

- Select all idle SSDs to expand the performance layer.

```
Request: PUT /deviceManager/rest/210235843710E7000007/performancelayer?id=0{
    "diskNum": "-1",
    "id": "0"
}

Response: {
    "data": {
```

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```
        "id": "0",
        "diskNum": "8"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Add all idle SSDs and enable the function of automatically allocating free capacity to associated storage pools based on the proportion.

```
Request: PUT /deviceManager/rest/210235843710E7000007/performancelayer?id=0{
    "diskNum": "-1",
    "id": "0",
    "autoAllocQuotaType": "1"
}

Response: {
    "data": {
        "id": "0",
        "diskNum": "8"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Change the hot spare policy of the performance layer whose ID is 0 to Low.

```
Request: PUT /deviceManager/rest/210235843710E7000007/performancelayer?id=0{
    "id": "0",
    "hotSpareStrategy": "1"
}

Response: {
    "data": null,
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.3.2 (Not Recommended) Interface for Modifying Disk Domain Information

Function

This interface is used to modify disk domain information.

HighRisk

You are about to update the Authentication Keys (AKs) of the encrypted disks in the disk domain. This operation will cause a temporary decrease in system performance.

Suggestion: Before running the command, confirm that you need to update the AKs of the encrypted disks in the disk domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool/${id}

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	Disk domain ID.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** The field is not used. Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Optional	enum	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8
SSDDISKNUM	Optional	uint32	Number of SSDs. **The value is described as follows:** The disks are automatically selected for disk domain creation and expansion. -1 indicates that all free SSDs are automatically selected.
TIER0DISKTYPE	Optional	enum	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**The mixed use of the four types of disks is not supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJIDLIST	Optional	array	IDs of the disks selected to expand a disk domain. **The value is described as follows:** For example, ["32", "33", "34", "38"].
dedupMethod	Optional	enum	Deduplication mode. **The value is described as follows:** 0: inline deduplication 2: global similarity-based deduplication **Default:**2: global similarity-based deduplication
updateEncryptKey	Optional	bool	Whether to update the key. **The value is described as follows:** true: yes false: no **Note:**By default, the key is not updated.
associateObjIDList	Optional	array	Disk IDs specified to be delivered when the disk domain is expanded. **The value is described as follows:** For example, ["32", "33", "34", "38"].
ENGINEIDLIST	Optional	array	List of controller enclosures. **The value is described as follows:** Example: CTE0.
diskCapacityList	Optional	array	Disk capacity list. **The value is described as follows:** Example: ["837","932", ...].

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Parameter	Mandatory/Optional/Conditional	Type	Description
nlsasDiskCapacityList	Optional	array	Indicates the HDD capacity list. **The value is described as follows:** Example: ["837","932", ...].
SSDdiskNum	Optional	int32	Number of member SSDs. **The value is described as follows:** Used for automatic disk selection during disk creation or expansion. -1 indicates that all free disks of this type are automatically selected.
diskNumList	Optional	array	Number of disks. **The value is described as follows:** For example, ["8","10"] or ["all"].
nlsasDiskNumList	Optional	array	Indicates the HDD quantity list. **The value is described as follows:** For example, ["8","10"] or ["all"].
defragReadTemperatureThreshold	Optional	uint8	Defragmentation read popularity threshold. **The value is described as follows:** A larger value indicates a higher read frequency. **Default:**5

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Parameter	Mandatory/Optional/Conditional	Type	Description
defragWriteTemperatureThreshold	Optional	uint8	Defragmentation write popularity threshold. **The value is described as follows:** A larger value indicates a higher write frequency. **Default:**2

Result

N/A

Example

- Modifying disk domain Information.

```
Request: PUT /deviceManager/rest/210235843710E7000007/diskpool/0
{
    "DESCRIPTION": "default diskpool1234"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.3.3 (Not Recommended) Interface for Modifying Disk Domain Information*

Function

This interface is used to modify disk domain information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpoolrest/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	Disk domain ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~255
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** The field is not used. Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Optional	enum	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8
SSDDISKNUM	Optional	uint32	Number of member SSDs. **The value is described as follows:** The disks are automatically selected for disk domain creation and expansion. -1 indicates that all free SSDs are automatically selected.
TIER0DISKTYPE	Optional	enum	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**The mixed use of the four types of disks is not supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJIDLIST	Optional	array	IDs of the disks selected to expand a disk domain. **The value is described as follows:** For example, ["32", "33", "34", "38"].
dedupMethod	Optional	enum	Deduplication mode. **The value is described as follows:** 0: inline deduplication 2: global similarity-based deduplication **Default:**2: global similarity-based deduplication
defragReadTemperatureThreshold	Optional	uint8	Defragmentation read popularity threshold. **The value is described as follows:** A larger value indicates a higher read frequency. **Default:**5
defragWriteTemperatureThreshold	Optional	uint8	Defragmentation write popularity threshold. **The value is described as follows:** A larger value indicates a higher write frequency. **Default:**2

Result

N/A

Example

- Modifying disk domain Information.

```
Request: PUT /deviceManager/rest/210235843710E7000007/diskpoolrest/0
{
   "DESCRIPTION": "default diskpool1234"
}
```

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```
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.4 Query

2.8.2.4.1 Interface for Querying a Performance Layer

Function

Query a performance layer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performancelayer?${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
type	Mandatory	enum	Object type. **The value is described as follows:** 638: shared pool
id	Optional	uint32	Performance layer ID. **The value is described as follows:** 0~31
name	Optional	string	Performance layer name. **The value is described as follows:** string **Length:**128

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Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	uint32	Performance layer ID. **The value is described as follows:** 0..31
name	Mandatory	string	Performance layer name. **The value is described as follows:** string
totalCapacity	Mandatory	uint64	Total available raw capacity. **Unit:**Sectors
shareStrategy	Mandatory	enum	Share policy. **The value is described as follows:** 0: Share 1: Unique
usedCapacity	Mandatory	uint64	Used raw capacity.
spareCapacity	Mandatory	uint64	Total hot spare raw capacity. **Unit:**Sectors
usedSpareCapacity	Mandatory	uint64	Used hot spare raw capacity. **Unit:**Sectors
freeCapacity	Mandatory	uint64	Free capacity. **Unit:**Sectors
diskNum	Mandatory	uint32	Disk number. **The value is described as follows:** 0
unbalanceDiskIdList	Mandatory	array	Anti-wear leveling disk ID list. **Unit:**string
engineIdList	Mandatory	array	Controller enclosure ID list.

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Parameter	Mandatory/ Conditional	Type	Description
diskpoolIdList	Mandatory	string	ID list of disk pools associated with the performance layer. **The value is described as follows:** 0
dpNum	Mandatory	uint32	Number of disk pools associated with the performance layer. **The value is described as follows:** 0..64
hotSpareStrategy	Mandatory	enum	Hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8
encryptAlgorithm	Mandatory	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES
encryptDiskType	Mandatory	enum	Type of the self-encrypting disk. **The value is described as follows:** 0: ordinary disk 1: self-encrypting disk

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Parameter	Mandatory/ Conditional	Type	Description
wearLevel	Mandatory	enum	Wear leveling status. **The value is described as follows:** 0: wear leveling status; 1: anti-wear leveling status

Example

- Query performance layer information.

```
Request: GET /deviceManager/rest/210235843710E7000007/performancelayer?0

Response: {
   "data": {
      "dpNum": "1",
      "diskpoolIdList": "0",
      "engineIdList": "CTE0",
      "id": "0",
      "name": "DM",
      "totalCapacity": "6190848000",
      "freeCapacity": "6190000000",
      "spareCapacity": "848000",
      "usedSpareCapacity": "0",
      "diskNum": "16",
      "remainLife": "30",
      "diskTypeList": "[\"3\",\"8\"]",
      "unbalanceDiskIdList": "--",
      "usedCapacity": "0",
      "shareStrategy": "share",
      "hotSpareStrategy": "1",
      "wearLevel": "0",
      "encryptDiskType": "0",
      "encryptAlgorithm": "--"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.8.2.4.2 Interface for Querying Performance Layers in Batches

Function

Query performance layers in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performancelayer

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter. **The value is described as follows:** The following fields are supported: ID and NAME. **Length:**128
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Length:**65

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	uint32	ID of the performance layer. **The value is described as follows:** 0..31
name	Mandatory	string	Name of the performance layer. **The value is described as follows:** string
usedCapacity	Mandatory	uint64	Used raw capacity.
totalCapacity	Mandatory	uint64	Total available raw capacity. **Unit:**Sectors

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Parameter	Mandatory/ Conditional	Type	Description
spareCapacity	Mandatory	uint64	Total hot spare raw capacity. **Unit:**Sectors
usedSpareCapacity	Mandatory	uint64	Used hot spare capacity **Unit:**Sectors
freeCapacity	Mandatory	uint64	Free capacity **Unit:**Sectors
diskNum	Mandatory	uint32	Number of disks. **The value is described as follows:** 0
unbalanceDiskIdList	Mandatory	array	ID list of anti-wear leveling disks. **Unit:**string
engineIdList	Mandatory	array	List of controller enclosure IDs.
diskpoolIdList	Mandatory	string	ID list of disk pools associated with the performance layer. **The value is described as follows:** 0
dpNum	Mandatory	uint32	Number of disk pools associated with the performance layer. **The value is described as follows:** 0..64
shareStrategy	Mandatory	enum	Share policy. **The value is described as follows:** 0: Share 1: Unique
remainLife	Mandatory	uint32	Remaining service life. **The value is described as follows:** 0..65535 **Unit:**Day

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Parameter	Mandatory/ Conditional	Type	Description
diskTypeList	Mandatory	array	List of disk types in the performance layer. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM drive
hotSpareStrategy	Mandatory	enum	Hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8
abrasionRate	Mandatory	uint32	Average wear degree. **The value is described as follows:** 0..65535
encryptDiskType	Mandatory	enum	Type of the self-encrypting disk. **The value is described as follows:** 0: ordinary disk 1: self-encrypting disk
encryptAlgorithm	Mandatory	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES

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Parameter	Mandatory/ Conditional	Type	Description
wearLevel	Mandatory	enum	Wear leveling status. **The value is described as follows:** 0: wear leveling status; 1: anti-wear leveling status

Example

- Query performance layers in batches.

```
Request: GET /deviceManager/rest/210235843710E7000007/performancelayer?range=[0,63]

Response: {
   "data": {
      "dpNum": "1",
      "diskpoolIdList": "0",
      "engineIdList": "CTE0",
      "id": "0",
      "name": "DM",
      "totalCapacity": "6190848000",
      "freeCapacity": "6190000000",
      "spareCapacity": "848000",
      "usedSpareCapacity": "0",
      "diskNum": "16",
      "remainLife": "30",
      "diskTypeList": "[\"3\",\"8\"]",
      "unbalanceDiskIdList": "--",
      "usedCapacity": "0",
      "shareStrategy": "share",
      "hotSpareStrategy": "low",
      "wearLevel": "0",
      "abrasionRate": "0",
      "encryptDiskType": "0",
      "encryptAlgorithm": "--"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.8.2.4.3 Interface for Querying the Available Capacity of the Performance Layer

Function

Query the available capacity of the performance layer.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_performance_layer_available_cap_info

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Optional	uint32	ID of the performance layer. **The value is described as follows:** 0~31
raidLevel	Mandatory	enum	RAID level. **The value is described as follows:** 2: RAID 5 5: RAID 6 11: RAID-TP
engineIdList	Optional	array	List of controller enclosure ID list.
hotSpareStrategy	Optional	enum	Hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	uint32	ID of the performance layer. **The value is described as follows:** 0..31

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Name of the performance layer. **The value is described as follows:** string
availableCapacity	Mandatory	uint64	Available capacity.

Application Scope

For internal use by R&D engineers.

Example

- Query the performance layer of a specified ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/
get_performance_layer_available_cap_info?raidLevel=5

Response: {
    "data": {
        "availableCapacity": "0",
        "id": "0",
        "name": "--"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.4.4 Interface for Querying the information of available controller enclosures

Function

This interface is used to query information about available controller enclosures.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_engine_diskinfo

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	Disk domain ID. **Note:**This field is delivered when querying information about the controller enclosure that can be expanded in the disk domain.

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Result

Parameter	Mandatory/ Conditional	Type	Description

ENGINEINFO	Mandatory	string(json)	Information about available controller enclosures. The format is as follows:
			{
			"CTE0": [{ // Key is the controller enclosure name. The value is the information about different types of disks in the controller enclosure.
			"diskType": "SSD", // Disk type.
			"diskNum": "6", // Number of disks of this type.
			"controller": "0A,0B", // Controller list, separated by a comma (,).
			"capInfo": [{ // List of disks with different capacities.
			"cap": "389443303", // Nominal capacity (unit: sector).
			"mirrorCap": "0", // Nominal capacity of the disk that has the same available capacity (unit: sector).
			"num": "6", // Number of disks with this capacity.
			"recommend": false // Whether it is recommended to use disks with the capacity to create disk domains. (This parameter is returned when a disk domain is created.)

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Parameter	Mandatory/ Conditional	Type	Description
			"minExpandNum": "1", // Minimum number of disks with the capacity to be added. (This parameter is returned when a disk domain is expanded.) }, ...] }, ...] }

Application Scope

For internal use by R&D engineers.

Example

- Querying information about available controller enclosures during disk domain creation.

```
Request: GET/deviceManager/rest/210235982587654320 76/get_engine_diskinfo
Response: {
   "data": {
      "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"SSD\",\n\t\t\t\"diskNum\":\t\"6\",\n\t\t
\t\"controller\":\t\"0A,0B\",\n\t\t\t\"capInfo\":\t[{\n\t\t\t\t\t\"cap\":\t\"389443303\",\n\t\t\t\t\t
\"mirrorCap\":\t\"0\",\n\t\t\t\t\t\"num\":\t\"6\",\n\t\t\t\t\t\"recommend\":\tfalse\n\t\t\t\t}]\n\t\t}, {\n\t
\t\t\"diskType\":\t\"SSD_SED\",\n\t\t\t\"diskNum\":\t\"6\",\n\t\t\t\"controller\":\t\"0A,0B\",\n\t\t\t
\"capInfo\":\t[{\n\t\t\t\t\t\"cap\":\t\"1756630804\",\n\t\t\t\t\t\"mirrorCap\":\t\"1873818304\",\n\t\t\t\t
\t\"num\":\t\"5\",\n\t\t\t\t\t\"recommend\":\tfalse\n\t\t\t\t}, {\n\t\t\t\t\t\"cap\":\t\"7030068304\",\n\t\t
\t\t\t\"mirrorCap\":\t\"7498818304\",\n\t\t\t\t\t\"num\":\t\"1\",\n\t\t\t\t\t\"recommend\":\tfalse\n\t\t\t
\t}]\n\t\t}]\n}",
      "TYPE": 266
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying information about available controller enclosures during disk domain expansion.

```
Request: GET/deviceManager/rest/210235982587654320 76/get_engine_diskinfo?ID=0
Response: {
   {
      "data": {
         "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"SSD\",\n\t\t\t\"diskNum\":\t\"5\",\n\t
\t\t\"controller\":\t\"0A,0B\",\n\t\t\t\"capInfo\":\t[{\n\t\t\t\t\t\"cap\":\t\"780068303\",\n\t\t\t\t\t
\"mirrorCap\":\t\"0\",\n\t\t\t\t\t\"num\":\t\"3\",\n\t\t\t\t\t\"minExpandNum\":\t\"0\"\n\t\t\t\t}, {\n\t\t\t
\t\t\"cap\":\t\"1170693303\",\n\t\t\t\t\t\"mirrorCap\":\t\"0\",\n\t\t\t\t\t\"num\":\t\"2\",\n\t\t\t\t\t
\"minExpandNum\":\t\"1\"\n\t\t\t\t}]\n\t\t}]\n}",
         "TYPE": 266
      },
      "error": {
         "code": 0,
         "description": "0"
```

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```
    }
  }
```

2.8.2.4.5 Interface for Querying the Next Available Disk Domain ID

Function

This interface is used to query the next available disk domain ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/nextavailableid_old_disk_domain

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Disk domain ID. **The value is described as follows:** The value ranges from 0 to 63. **Note:**The disk domain ID is automatically specified when the disk domain is created next time.

Example

- Querying the next available disk domain ID.

```
Request: GET/deviceManager/rest/2102350RMG10H3000003/nextavailableid_old_disk_domain{

}Response: {
    "data": {
        "ID": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.8.2.4.6 (Not Recommended) Interface for Batch Querying Disk Domain Information

Function

This interface is used to batch query disk domain information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criterion. **The value is described as follows:** Parameters HEALTHSTATUS and RUNNINGSTATUS are supported.
range	Optional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 266: disk domain
ID	Mandatory	string	ID of a disk domain. **The value is described as follows:** The value ranges from 0 to 63.
NAME	Mandatory	string	Name of a disk domain. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: Pre-copy 16: Rebuilding 27: Online 28: Offline 32: Balancing 53: Initializing 106: Deleting

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Disk domain description. **The value is described as follows:** The value contains 0 to 255 characters.
TOTALCAPACITY	Mandatory	string(uint64)	Total available raw capacity. **Unit:**sectors
SPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw capacity. **Unit:**sectors
USEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw capacity. **Unit:**sectors
FREECAPACITY	Mandatory	string(uint64)	Free capacity. **Unit:**sectors
SSDTOTALCAPACITY	Conditional	string(uint64)	Total available raw SSD capacity. **Unit:**sectors **Note:**This field is returned when there are SSDs in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SCMHOTSPARESTRAT-EGY	Mandatory	string(enum)	SCM drive hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, an empty value is returned.
SSDSPARECAPACITY	Conditional	string(uint64)	Total available hot spare raw SSD capacity. **Unit:**sectors **Note:**This field is returned when there are SSDs in the disk domain.
SSDUSEDSPARECAPAC ITY	Conditional	string(uint64)	Used hot spare raw SSD capacity. **Unit:**sectors **Note:**This field is returned when there are SSDs in the disk domain.
SSDFREECAPACITY	Conditional	string(uint64)	Free raw SSD capacity. **Unit:**sectors **Note:**This field is returned when there are SSDs in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Mandatory	string(enum)	Hot spare policy of a disk domain. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**0 is returned if this field is invalid.
SCMFREECAPACITY	Conditional	string(uint64)	Free raw SCM drive capacity. **Unit:**sectors **Note:**This field is returned when SCM drives exist in the disk domain.
SSDDISKNUM	Mandatory	string(uint32)	Number of disks in a disk domain.
USEDCAPACITY	Mandatory	string(uint64)	Allocated raw capacity. **Unit:**sectors
SSDUSEDCAPACITY	Conditional	string(uint64)	Allocated raw SSD capacity. **Unit:**sectors **Note:**This field is returned when the disk domain contains only SSDs.

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Parameter	Mandatory/ Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string(array)	Invalid to a single object. It applies only to batch creating association relationships. For example, associate several disks with a pool at a time.
FREECAPACITYLIST	Mandatory	string(json)	List of free capacities for the member disks at each tier.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**-1 is returned if this field is invalid.
abrasionRate	Mandatory	string(uint32)	Wear degree, that is, the percentage of the used service life of a disk.
remainLife	Mandatory	string(uint32)	Remaining service life. **Unit:**Day
enduranceBalanceStatus	Mandatory	string(enum)	Wear leveling status. **The value is described as follows:** 0: Wear leveling 1: Anti-wear leveling
unbalanceDiskIdList	Mandatory	string(array)	ID list of anti-wear leveling disks.
ENGINEIDLIST	Mandatory	string	List of controller enclosures. **Note:**Owning controller enclosure.

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Parameter	Mandatory/ Conditional	Type	Description
ENCRYPTDISKTYPE	Mandatory	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain
OWNERCONTROLLER-LIST	Mandatory	string	Owning controller ID list.
ENGINEINFO	Mandatory	string(json)	Information about the controller enclosure.
SSDhotspareDiskNum	Mandatory	string(uint32)	Number of hot spare SSDs.
redundancyStrategy	Mandatory	string(enum)	Redundancy policy. **The value is described as follows:** 0: disk 1: enclosure
redundancyAbility	Mandatory	string(enum)	Redundancy capability. **The value is described as follows:** 0: disk 1: enclosure 2: none
diskTypeList	Mandatory	string	List of disk types in a disk domain. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM drive
SCMDISKNUM	Conditional	string(uint32)	Number of member SCM drives. **Note:**This field is returned when SCM drives exist in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SCMSPARECAPACITY	Conditional	string(uint64)	Total hot spare raw SCM drive capacity. **Unit:**sectors **Note:**This field is returned when SCM drives exist in the disk domain.
SCMTOTALCAPACITY	Conditional	string(uint64)	Total available raw SCM drive capacity. **Unit:**sectors **Note:**This field is returned when SCM drives exist in the disk domain.
SCMUSEDSPARECAPACITY	Conditional	string(uint64)	Used hot spare raw SCM drive capacity. **Unit:**sectors **Note:**This field is returned when SCM drives exist in the disk domain.
SSDTIERDISKNUM	Conditional	string(uint32)	Number of member SSDs. **Note:**This field is returned when there are SSDs in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDTIERHOTSPARES-TRATEGY	Mandatory	string(enum)	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, 0 is returned.
diskEncryptionAlgor-ithm	Conditional	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES
compressLevel	Mandatory	uint8	Compression level. **The value is described as follows:** 0: high performance; 1: high reduction rate.

Example

- Batch querying disk domain information.

```
Request: GET /deviceManager/rest/210235843710E7000007/diskpool

Response: {
   "data": {
      "DESCRIPTION": "hehe",
      "ENGINEIDLIST": "CTE0",
      "ID": "0",
      "NAME": "DiskDomain002",
      "OWNERCONTROLLERLIST": "0A,0B",
      "SSDHOTSPARESTRATEGY": "3",
      "SSDhotspareDiskNum": "0",
      "dedupMethod": "2",
```

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```
        "ASSOCIATEOBJID": "[\"134217750\", \"134217737\", \"134217751\", \"134217748\",
\"134217747\", \"134217742\", \"134217738\", \"134217741\", \"134217749\", \"134217736\",
\"134217743\", \"134217739\", \"134217740\"]",
        "ENCRYPTDISKTYPE": "0",
        "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"NVME_SSD\",\n\t\t\t\"diskNum\":\t
\"8\",\n\t\t\t\"controller\":\t\"0A,0B\"\n\t\t}, {\n\t\t\t\"diskType\":\t\"SCM\",\n\t\t\t\"diskNum\":\t
\"5\",\n\t\t\t\"controller\":\t\"0A,0B\"\n\t\t}]\n}",
        "FREECAPACITY": "59040309510",
        "FREECAPACITYLIST": "{\n\t\"NVME_SSD\":\t{\n\t\t\"RAID5\":\t\"49467345038\",\n\t\t
\"RAID6\":\t\"40484783662\",\n\t\t\"RAID_TP\":\t\"31502222287\"\n\t}\n}",
        "HEALTHSTATUS": "1",
        "RUNNINGSTATUS": "27",
        "SCMDISKNUM": "5",
        "SCMFREECAPACITY": "18446744073709551615",
        "SCMHOTSPARESTRATEGY": "3",
        "SCMSPARECAPACITY": "0",
        "SCMTOTALCAPACITY": "6190848000",
        "SCMUSEDSPARECAPACITY": "0",
        "SPARECAPACITY": "0",
        "SSDDISKNUM": "13",
        "SSDFREECAPACITY": "18446744073709551615",
        "SSDSPARECAPACITY": "0",
        "SSDTIERDISKNUM": "8",
        "SSDTIERHOTSPARESTRATEGY": "3",
        "SSDTOTALCAPACITY": "52849461510",
        "SSDUSEDSPARECAPACITY": "0",
        "TIER0DISKTYPE": "14",
        "TOTALCAPACITY": "59040309510",
        "USEDCAPACITY": "0",
        "USEDSPARECAPACITY": "0",
        "abrasionRate": "8",
        "diskTypeList": "[\"3\",\"8\"]",
        "enduranceBalanceStatus": "0",
        "redundancyAbility": "2",
        "redundancyStrategy": "0",
        "remainLife": "3660",
        "unbalanceDiskIdList": "--",
        "TYPE": 266,
        "compressLevel": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.2.4.7 (Not Recommended) Interface for Querying Disk Domain Information

Function

This interface is used to query basic information about disk domains.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Disk domain ID.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, HEALTHSTATUS, and RUNNINGSTATUS are supported.
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 266: disk domain
ID	Mandatory	string	Disk domain ID.
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: Pre-copy 16: Rebuilding 27: Online 28: Offline 32: Balancing 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value contains 0 to 255 characters.
TOTALCAPACITY	Mandatory	string(uint64)	Total available raw capacity.
SPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw capacity.
USEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw capacity.
FREECAPACITY	Mandatory	string(uint64)	Free capacity.
SSDTOTALCAPACITY	Conditional	string(uint64)	Total available raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDSPARECAPACITY	Conditional	string(uint64)	Total available hot spare raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SSDUSEDSPARECAPACITY	Conditional	string(uint64)	Used hot spare raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SSDFREECAPACITY	Conditional	string(uint64)	Free raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SCMFREECAPACITY	Conditional	string(uint64)	Free raw SCM drive capacity. **Note:**This field is returned when SCM drives exist in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDHOTSPARESTRAT-EGY	Mandatory	string(enum)	Hot spare policy of a disk domain. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**0 is returned if this field is invalid.
SSDDISKNUM	Mandatory	string(uint32)	Number of disks in a disk domain.
USEDCAPACITY	Mandatory	string(uint64)	Allocated raw capacity.
SSDUSEDCAPACITY	Conditional	string(uint64)	Allocated raw SSD capacity. **Note:**This field is returned when the disk domain contains only SSDs.
ASSOCIATEOBJID	Mandatory	string(array)	Invalid to a single object. It applies only to batch creating association relationships. For example, associate several disks with a pool at a time.
FREECAPACITYLIST	Mandatory	string(json)	List of free capacities for the member disks at each tier.

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Parameter	Mandatory/ Conditional	Type	Description
TIER0DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**-1 is returned if this field is invalid.
FORMATPROGRESS	Conditional	string(uint32)	Formatting progress. **Note:**This field is returned only when formatting is performed.
FORMATREMAINTIME	Conditional	string(uint32)	Remaining formatting time. **Note:**This field is returned only when formatting is performed.
abrasionRate	Mandatory	string(uint32)	Wear degree, that is, the percentage of the used service life of a disk.
remainLife	Mandatory	string(uint32)	Remaining service life.
enduranceBalanceStatus	Mandatory	string(enum)	Wear leveling status. **The value is described as follows:** 0: Wear leveling 1: Anti-wear leveling
unbalanceDiskIdList	Mandatory	string(array)	ID list of anti-wear leveling disks.
ENCRYPTDISKTYPE	Mandatory	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain

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Parameter	Mandatory/ Conditional	Type	Description
ENGINEIDLIST	Mandatory	string	List of controller enclosures. **Note:**Owning controller enclosure.
OWNERCONTROLLER-LIST	Mandatory	string	Owning controller ID list.
ENGINEINFO	Mandatory	string(json)	Information about the controller enclosure.
dedupMethod	Mandatory	enum	Deduplication mode. **The value is described as follows:** 0: inline deduplication 2: global similarity-based deduplication
SSDhotspareDiskNum	Mandatory	string(uint32)	Number of hot spare SSDs.
Redundancy Strategy	Mandatory	enum	Redundancy policy. **The value is described as follows:** 0: disk 1: enclosure
Redundancy Ability	Mandatory	string(enum)	Redundancy capability. **The value is described as follows:** 0: disk 1: enclosure 2: none
diskTypeList	Mandatory	string	List of disk types in a disk domain. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED 17: SCM drive

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Parameter	Mandatory/ Conditional	Type	Description
SCMDISKNUM	Conditional	string(uint32)	Number of member SCM drives. **Note:**This field is returned when SCM drives exist in the disk domain.
SCMHOTSPARESTRAT-EGY	Mandatory	string(enum)	SCM drive hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, an empty value is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SSDTIERHOTSPARES-TRATEGY	Mandatory	string(enum)	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, 0 is returned.
SCMSPARECAPACITY	Conditional	string(uint64)	Total hot spare raw SCM drive capacity. **Note:**This field is returned when SCM drives exist in the disk domain.
SCMTOTALCAPACITY	Conditional	string(uint64)	Total available raw SCM drive capacity. **Note:**This field is returned when SCM drives exist in the disk domain.
SCMUSEDSPARECAPACITY	Conditional	string(uint64)	Used hot spare raw SCM drive capacity. **Note:**This field is returned when SCM drives exist in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDTIERDISKNUM	Conditional	string(uint32)	Number of member SSDs. **Note:**This field is returned when there are SSDs in the disk domain.
diskEncryptionAlgorithm	Conditional	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES
performanceLayerId	Mandatory	uint	ID of the performance layer.
defragReadTemperatureThreshold	Mandatory	string(uint8)	Defragmentation read popularity threshold. **The value is described as follows:** A larger value indicates a higher read frequency.
defragWriteTemperatureThreshold	Mandatory	string(uint8)	Defragmentation write popularity threshold. **The value is described as follows:** A larger value indicates a higher write frequency.

Example

- Querying basic information about the disk domain whose ID is 0.

```
Request: GET /deviceManager/rest/210235843710E7000007/diskpool/0

Response: {
   "data": {
      "DESCRIPTION": "hehe",
      "ENGINEIDLIST": "CTE0",
      "ID": "0",
      "NAME": "DiskDomain002",
      "OWNERCONTROLLERLIST": "0A,0B",
      "SSDHOTSPARESTRATEGY": "3",
      "SSDhotspareDiskNum": "0",
      "dedupMethod": "2",
      "ASSOCIATEOBJID": "[\"134217750\", \"134217737\", \"134217751\", \"134217748\",
\"134217747\", \"134217742\", \"134217738\", \"134217741\", \"134217749\", \"134217736\",
\"134217743\", \"134217739\", \"134217740\"]",
      "ENCRYPTDISKTYPE": "0",
```

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```
        "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"NVME_SSD\",\n\t\t\t\"diskNum\":\t
\"8\",\n\t\t\t\"controller\":\t\"0A,0B\"\n\t\t}, {\n\t\t\t\"diskType\":\t\"SCM\",\n\t\t\t\"diskNum\":\t
\"5\",\n\t\t\t\"controller\":\t\"0A,0B\"\n\t\t}]\n}",
        "FORMATPROGRESS": "0",
        "FORMATREMAINTIME": "0",
        "FREECAPACITY": "59040309510",
        "FREECAPACITYLIST": "{\n\t\"NVME_SSD\":\t{\n\t\t\"RAID5\":\t\"49467345038\",\n\t\t
\"RAID6\":\t\"40484783662\",\n\t\t\"RAID_TP\":\t\"31502222287\"\n\t}\n}",
        "HEALTHSTATUS": "1",
        "RUNNINGSTATUS": "27",
        "SCMDISKNUM": "5",
        "SCMFREECAPACITY": "18446744073709551615",
        "SCMHOTSPARESTRATEGY": "3",
        "SCMSPARECAPACITY": "0",
        "SCMTOTALCAPACITY": "6190848000",
        "SCMUSEDSPARECAPACITY": "0",
        "SPARECAPACITY": "0",
        "SSDDISKNUM": "13",
        "SSDFREECAPACITY": "18446744073709551615",
        "SSDSPARECAPACITY": "0",
        "SSDTIERDISKNUM": "8",
        "SSDTIERHOTSPARESTRATEGY": "3",
        "SSDTOTALCAPACITY": "52849461510",
        "SSDUSEDSPARECAPACITY": "0",
        "TIER0DISKTYPE": "14",
        "TOTALCAPACITY": "59040309510",
        "USEDCAPACITY": "0",
        "USEDSPARECAPACITY": "0",
        "abrasionRate": "8",
        "diskTypeList": "[\"3\",\"8\"]",
        ,
        "enduranceBalanceStatus": "0",
        "Redundancy Ability": "2",
        "Redundancy Strategy": "0",
        "remainLife": "3660",
        "unbalanceDiskIdList": "--",
        "TYPE": "266",
        "performanceLayerId": "0",
        "defragReadTemperatureThreshold": "1",
        "defragWriteTemperatureThreshold": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.2.4.8 (Not Recommended) Interface for Querying Disk Domain Information*

Function

This interface is used to query basic information about disk domains.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpooltlv/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Disk domain ID.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, HEALTHSTATUS, and RUNNINGSTATUS are supported.
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 266: disk domain
ID	Mandatory	string	Disk domain ID.
NAME	Mandatory	string	Disk domain name. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 5: Degraded
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 14: Pre-copy 16: Rebuilding 27: Online 28: Offline 32: Balancing 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value contains 0 to 255 characters.
TOTALCAPACITY	Mandatory	string(uint64)	Total available raw capacity.
SPARECAPACITY	Mandatory	string(uint64)	Total available hot spare raw capacity.
USEDSPARECAPACITY	Mandatory	string(uint64)	Used hot spare raw capacity.
FREECAPACITY	Mandatory	string(uint64)	Free capacity.
SSDTOTALCAPACITY	Conditional	string(uint64)	Total available raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.

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Parameter	Mandatory/ Conditional	Type	Description
SSDSPARECAPACITY	Conditional	string(uint64)	Total available hot spare raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SSDUSEDSPARECAPACITY	Conditional	string(uint64)	Used hot spare raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SSDFREECAPACITY	Conditional	string(uint64)	Free raw SSD capacity. **Note:**This field is returned when there are SSDs in the disk domain.
SSDHOTSPARESTRAT-EGY	Mandatory	string(enum)	Hot spare policy of a disk domain. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**0 is returned if this field is invalid.
SSDDISKNUM	Mandatory	string(uint32)	Number of disks in a disk domain.
USEDCAPACITY	Mandatory	string(uint64)	Allocated raw capacity.

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Parameter	Mandatory/ Conditional	Type	Description
SSDUSEDCAPACITY	Conditional	string(uint64)	Allocated raw SSD capacity. **Note:**This field is returned when the disk domain contains only SSDs.
ASSOCIATEOBJID	Mandatory	string(array)	Invalid to a single object. It applies only to batch creating association relationships. For example, associate several disks with a pool at a time.
FREECAPACITYLIST	Mandatory	string(json)	List of free capacities for the member disks at each tier.
TIER0DISKTYPE	Mandatory	string(enum)	Disk type. **The value is described as follows:** 3: SSD 10: SSD SED 14: NVMe SSD 16: NVMe SSD SED **Note:**-1 is returned if this field is invalid.
FORMATPROGRESS	Conditional	string(uint32)	Formatting progress. **Note:**This field is returned only when formatting is performed.
FORMATREMAINTIME	Conditional	string(uint32)	Remaining formatting time. **Note:**This field is returned only when formatting is performed.
abrasionRate	Mandatory	string(uint32)	Wear degree, that is, the percentage of the used service life of a disk.
remainLife	Mandatory	string(uint32)	Remaining service life.

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Parameter	Mandatory/ Conditional	Type	Description
enduranceBalanceStatus	Mandatory	string(enum)	Wear leveling status. **The value is described as follows:** 0: Wear leveling 1: Anti-wear leveling
unbalanceDiskIdList	Mandatory	string(array)	ID list of anti-wear leveling disks.
ENCRYPTDISKTYPE	Mandatory	enum	Encryption type. **The value is described as follows:** 0: Standard disk domain 1: Self-encrypting disk domain
ENGINEIDLIST	Mandatory	string	List of controller enclosures. **Note:**Owning controller enclosure.
OWNERCONTROLLERLIST	Mandatory	string	Owning controller ID list.
ENGINEINFO	Mandatory	string(json)	Information about the controller enclosure.
dedupMethod	Mandatory	enum	Deduplication mode. **The value is described as follows:** 0: inline deduplication 2: global similarity-based deduplication
SSDhotspareDiskNum	Mandatory	string(uint32)	Number of hot spare SSDs.
Redundancy Strategy	Mandatory	enum	Redundancy policy. **The value is described as follows:** 0: disk 1: enclosure

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Parameter	Mandatory/ Conditional	Type	Description
Redundancy Ability	Mandatory	string(enum)	Redundancy capability. **The value is described as follows:** 0: disk 1: enclosure 2: none
SCMHOTSPARESTRAT-EGY	Mandatory	string(enum)	SCM drive hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, an empty value is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SSDTIERHOTSPARES-TRATEGY	Mandatory	string(enum)	SSD hot spare policy. **The value is described as follows:** 1: low 2: high 3: none 4: 0 5: 1 6: 2 7: 3 8: 4 9: 5 10: 6 11: 7 12: 8 **Note:**If this parameter is invalid, 0 is returned.
SSDTIERDISKNUM	Conditional	string(uint32)	Number of member SSDs. **Note:**This field is returned when there are SSDs in the disk domain.
raidMemberNumber	Mandatory	string(enum)	Maximum number of RAID member disks. **The value is described as follows:** 4: 4 8: 8 12: 12 14: 14 15: 15 16: 16 18: 18 25: 25

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Parameter	Mandatory/ Conditional	Type	Description
similarDedupLevel	Mandatory	string(enum)	Similarity-based deduplication execution level. **The value is described as follows:** 0: 0 1: 1 2: 2 3: 3 4: 4 5: 5 6: 6 7: 7 8: 8 9: 9 10: 10 11: 11 12: 12 13: 13
deepCompressLevel	Mandatory	string(enum)	Deep compression level of a disk domain. **The value is described as follows:** 0: medium 1: low 2: high
lunMapTableRepair	Mandatory	string(enum)	Switch status of the LUN mapping table repair function of a disk domain. **The value is described as follows:** false: close open: open
dedupLevel	Mandatory	string(enum)	Deduplication level. **The value is described as follows:** 0: performance first 1: reduction rate first

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Parameter	Mandatory/ Conditional	Type	Description
diskEncryptionAlgorithm	Conditional	enum	Disk encryption algorithm. **The value is described as follows:** 0: SM4 1: AES
cacheLayerCompressSwitch	Mandatory	string(enum)	Cache layer compression switch. **The value is described as follows:** 0: off 1: on
performanceLayerId	Mandatory	uint	ID of the performance layer.
defragReadTemperatureThreshold	Mandatory	string(uint8)	Defragmentation read popularity threshold. **The value is described as follows:** A larger value indicates a higher read frequency.
defragWriteTemperatureThreshold	Mandatory	string(uint8)	Defragmentation write popularity threshold. **The value is described as follows:** A larger value indicates a higher write frequency.

Usage Guidelines

This command is not recommended.

Example

- Querying basic information about the disk domain whose ID is 0.

```
Request: GET /deviceManager/rest/210235843710E7000007/diskpooltlv/0

Response: {
    "data": {
        "DESCRIPTION": "",
        "ENGINEIDLIST": "CTE0",
        "ID": "0",
        "NAME": "defaultdiskpoo111111",
        "OWNERCONTROLLERLIST": "0A,0B",
        "SSDHOTSPARESTRATEGY": "1",
```

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```
        "SSDhotspareDiskNum": "0",
        "dedupMethod": "2",
        "deepCompressLevel": "0",
        "lunMapTableRepair": false,
        "raidMemberNumber": "25",
        "ASSOCIATEOBJID": "[\"134234112\", \"134234114\", \"134234117\", \"134234119\",
\"134234116\", \"134234118\", \"134234115\", \"134234113\", \"134234120\"]",
        "ENCRYPTDISKTYPE": "0",
        "ENGINEINFO": "{\n\t\"CTE0\":\t[{\n\t\t\t\"diskType\":\t\"SSD\",\n\t\t\t\"diskNum\":\t\"9\",\n\t\t
\t\"controller\":\t\"0A,0B\"\n\t\t}]\n}",
        "FORMATPROGRESS": "0",
        "FORMATREMAINTIME": "0",
        "FREECAPACITY": "10701881344",
        "FREECAPACITYLIST": "{\n\t\"SSD\":\t{\n\t\t\"RAID5\":\t\"9364146176\",\n\t\t\"RAID6\":\t
\"8026411008\",\n\t\t\"RAID_TP\":\t\"6688675840\",\n\t\t\"RAID10\":\t\"5350940672\"\n\t}\n}",
        "HEALTHSTATUS": "1",
        "RUNNINGSTATUS": "27",
        "SCMHOTSPARESTRATEGY": "",
        "SPARECAPACITY": "1785006080",
        "SSDDISKNUM": "9",
        "SSDFREECAPACITY": "18446744073709551615",
        "SSDSPARECAPACITY": "1785006080",
        "SSDTIERDISKNUM": "9",
        "SSDTIERHOTSPARESTRATEGY": "1",
        "SSDTOTALCAPACITY": "12486887424",
        "SSDUSEDCAPACITY": "0",
        "SSDUSEDSPARECAPACITY": "0",
        "TIER0DISKTYPE": "3",
        "TOTALCAPACITY": "12486887424",
        "USEDCAPACITY": "0",
        "USEDSPARECAPACITY": "0",
        "abrasionRate": "718",
        "dedupLevel": "1",
        "enduranceBalanceStatus": "0",
        "Redundancy Ability": "0",
        "Redundancy Strategy": "0",
        "remainLife": "3660",
        "similarDedupLevel": "0",
        "unbalanceDiskIdList": "--",
        "TYPE": "266",
        "cacheLayerCompressSwitch": "1",
        "performanceLayerId": "0",
        "defragReadTemperatureThreshold": "1",
        "defragWriteTemperatureThreshold": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.8.2.4.9 (Not Recommended) Interface for Querying the Number of Disk Domains

Function

This interface is used to query the number of disk domains.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/diskpool/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameters NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried disk domains.

Example

- Query the number of diskpool pools.

```
Request: GET /deviceManager/rest/210235843910E6000009/diskpool/count

Response:
{
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.8.2.5 Others

2.9 Data protection management

2.9.1 lun_snapshot

2.9.1.1 Add

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2.9.1.1.1 Interface for Adding a LUN to a HyperCDP Schedule

Function

This interface is used to add a LUN to a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a HyperCDP schedule.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of a managed object. **The value is described as follows:** 11: LUN
ASSOCIATEOBJID	Mandatory	string	ID of a LUN to be added.
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
vstoreId		string	vStore ID. **The value is described as follows:** 0..1023.

Result

N/A

Usage Guidelines

After LUNs are added, the specified HyperCDP schedule is applied to these LUNs.

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Example

- Adding a LUN to a HyperCDP schedule.

```
Request: POST/deviceManager/rest/20140609100000000000/snapshot_schedule/create_associate
{
   "ID": "2",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "1",
   "SCHEDULETYPE": 1
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.1.2 Interface for Adding a Protection Group to a HyperCDP Schedule

Function

This interface is used to add a protection group to a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of a protection group. **The value is described as follows:** The value is an integer from 0 to 16383.
ASSOCIATEOBJTYPE	Mandatory	enum	ID of the managed object type. **The value is described as follows:** 57846: protection group
ID	Mandatory	string	ID of a HyperCDP schedule.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
subType	Optional	uint32	Indicates the type of the protection group. **The value is described as follows:** 0..16383 **Note:** The value 0 indicates a protection group of common LUNs. The value 1 indicates the protection group of VVol LUNs. If this field is not delivered, it indicates the protection group of common LUNs. Other values are not supported.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023.

Result

N/A

Usage Guidelines

After protection groups are added, the specified HyperCDP schedule is applied to these protection groups.

Example

- Adding a protection group to a HyperCDP schedule.

```
Request: POST /deviceManager/rest/201406091000000000000/snapshot_schedule/create_associate
{
   "ID": "1",
   "ASSOCIATEOBJTYPE": 57846,
   "ASSOCIATEOBJID": "6",
```

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```
    "SCHEDULETYPE": 1
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.1.3 Interface for Adding Member LUNs to a Protection Group in a HyperCDP Schedule

Function

Add member LUNs to a protection group in a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/add_lun

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** The value is an integer from 1 to 512.
ASSOCIATEOBJID	Mandatory	string	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
LUNIDARRAY	Mandatory	array	LUN ID list.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023

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Result

N/A

Usage Guidelines

After you add LUNs to a HyperCDP schedule, the schedule will be effective for the added LUNs.

Example

- Add member LUNs to a protection group in a HyperCDP schedule.

```
Request: PUT /deviceManager/rest/20140609100000000000/snapshot_schedule/add_lun
{
   "ID": "5",
   "ASSOCIATEOBJID": 2,
   "LUNIDARRAY": "[6]"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.1.4 Interface for Creating a Snapshot

Function

This interface is used to create a snapshot.

HighRisk

You are about to create a snapshot. This operation will reclaim data of the target LUN. Before this operation, ensure that the host is not reading or writing the target LUN, and no data of the target LUN is stored in the host cache.

Suggestion: If you want to retain data of the target LUN, back up the data in advance.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Snapshot ID. **The value is described as follows:** 0 to 65535.
NAME	Conditional	string	Snapshot name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**Enter at least one of NAME and dstLunId.
PARENTTYPE	Optional	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot **Default:**11: LUN
PARENTID	Mandatory	string	Parent object ID (LUN ID or snapshot ID). **The value is described as follows:** 0 to 65535.
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
SUBTYPE	Optional	uint32	Snapshot subtype. **The value is described as follows:** 0: common snapshot 1: VVol snapshot **Default:**0: common snapshot **Note:**This parameter is mandatory for a VVol snapshot.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isReadOnly	Optional	uint32	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot 1: read-only snapshot **Default:**0: writable snapshot.
dstLunId	Conditional	uint32	ID of the target LUN. **The value is described as follows:** 0 to 65535. **Note:**Enter at least one of NAME and dstLunId. The dstLunId field can be delivered when the snapshot subtype is common snapshots.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot
PARENTID	Mandatory	string	Parent object ID (LUN ID or snapshot ID).

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the parent object.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot
DESCRIPTION	Mandatory	string	Description.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Active 44: Rolling back 45: Inactive 53: Initializing 106: Deleting
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The local time is returned by default.
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Time when the rollback starts. The local time is returned by default. **The value is described as follows:** -- **Note:**"-1" is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKENDTIME	Mandatory	string(uint64)	Time when the rollback ends. The local time is returned by default. **The value is described as follows:** -- **Note:**"-1" is an invalid value.
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
ROLLBACKRATE	Mandatory	string(uint32)	Rollback progress. **The value is described as follows:** 0 to 100. **Note:**"-1" indicates an invalid value.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapping status. **The value is described as follows:** true: mapped false: unmapped
WWN	Mandatory	string	WWN.
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity. **Unit:**sectors
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **Unit:**sectors
WORKINGCONTROLLER	Mandatory	string	Working controller.

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Parameter	Mandatory/ Conditional	Type	Description
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
replicationCapacity	Mandatory	string(uint64)	Data protection capacity of the snapshot.
CASCADEDLEVEL	Mandatory	string(uint32)	Cascading level. **The value is described as follows:** 0 to 7.
CASCADEDNUM	Mandatory	string(uint32)	Number of cascaded snapshots. **The value is described as follows:** 0 to 1023.
SOURCELUNID	Mandatory	string	ID of the source LUN.
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
SOURCELUNNAME	Mandatory	string	Name of the source LUN.
ROLLBACKTARGETOB-JID	Mandatory	string	Rollback object ID. **Note:**"4294967295" indicates an invalid value.
ROLLBACKTARGETOBJ NAME	Mandatory	string	Rollback object name.

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Parameter	Mandatory/ Conditional	Type	Description
snapCgName	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.).
IOCLASSID	Mandatory	string	ID of the I/O class object.
SOURCELUNCAPACITY	Mandatory	string(uint64)	Source LUN capacity. **Unit:**sectors
WORKLOADTYPEID	Mandatory	string	Application type ID of the source LUN. **Note:**"4294967295" indicates an invalid value.
WORKLOADTYPENAME	Mandatory	string	Application type name of the source LUN.
ISSCHEDULEDSNAP	Mandatory	string(enum)	Whether the snapshot is a timing snapshot. **The value is described as follows:** 0: no 1: yes
isReadOnly	Mandatory	uint32	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot 1: read-only snapshot
HYPERCOPYIDS	Mandatory	array	List of associated HyperCopy IDs.

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Parameter	Mandatory/ Conditional	Type	Description
snapCgId	Mandatory	string	ID of the snapshot consistency group. **The value is described as follows:** 1 to 4096. **Note:**"4294967295" is an invalid value.
coupleUuid	Mandatory	string	Snapshot UUID. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Create a snapshot for a common LUN.

```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot
{
   "PARENTTYPE": 11,
   "PARENTID": "1182",
   "NAME": "LUN11830000_Snap_1707250249542",
   "DESCRIPTION": ""
}

Response:
{
   "data": {
      "CASCADEDLEVEL": "0",
      "CASCADEDNUM": "0",
      "CONSUMEDCAPACITY": "0",
      "DESCRIPTION": "",
      "EXPOSEDTOINITIATOR": "false",
      "HEALTHSTATUS": "1",
      "HYPERCOPYIDS": "",
      "ID": "1187",
      "IOCLASSID": "",
      "IOPRIORITY": "1",
      "ISSCHEDULEDSNAP":"0",
      "NAME": "LUN11830000_Snap_1707250249542",
      "PARENTID": "1182",
      "PARENTNAME": "LUN11830000",
      "PARENTTYPE": 11,
      "ROLLBACKENDTIME": "-1",
      "ROLLBACKRATE": "-1",
      "ROLLBACKSPEED": "-1",
      "ROLLBACKSTARTTIME": "-1",
      "SOURCELUNCAPACITY":"2097152",
      "ROLLBACKTARGETOBJID": "4294967295",
```

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```
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "53",
        "SOURCELUNID": "1182",
        "SOURCELUNNAME": "LUN11830000",
        "SUBTYPE": "0",
        "TIMESTAMP": "-1",
        "TYPE": 27,
        "USERCAPACITY": "0",
        "WORKINGCONTROLLER": "",
        "WWN": "6a1b2c3100f4d5e600e6f767000004a3",
        "replicationCapacity": "4294968480",
        "isReadOnly": "0",
        "WORKLOADTYPEID": "14",
        "WORKLOADTYPENAME": "Databases",
        "snapCgId": "1",
        "snapCgName":"SnapCG0",
        "NGUID":"7100015ca60002d55ce883d400000002",
        "coupleUuid": "00100DFFBF6000062100D30203040506",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Create a cascading snapshot.


```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot
{
    "PARENTTYPE": 27,
    "PARENTID": "1187",
    "NAME": "LUN11830000_Snap_1707250314371",
    "DESCRIPTION": ""
}

Response: {
    "data": {
        "CASCADEDLEVEL": "1",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "HYPERCOPYIDS": "",
        "ID": "1188",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "LUN11830000_Snap_1707250314371",
        "PARENTID": "1187",
        "PARENTNAME": "LUN11830000_Snap_1707250249542",
        "PARENTTYPE": 27,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "53",
        "SOURCELUNID": "1182",
        "SOURCELUNNAME": "LUN11830000",
        "SUBTYPE": "0",
        "TIMESTAMP": "-1",
        "TYPE": 27,
        "SOURCELUNCAPACITY": "2097152",
        "USERCAPACITY": "0",
        "WORKINGCONTROLLER": "",
        "WWN": "6a1b2c3100f4d5e600ec9a56000004a4",
        "replicationCapacity": "4294968480",
```


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```
        "isReadOnly": "0",
        "WORKLOADTYPEID": "14",
        "WORKLOADTYPENAME": "Databases",
        "snapCgId": "1",
        "snapCgName": "SnapCG1",
        "NGUID": "7100015ca60002d55ce883d400000002",
        "coupleUuid": "00100DFFBF6000062100D30203040506",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Creating a read-only VVol snapshot.


```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot
{
    "PARENTTYPE": 11,
    "PARENTID": "5",
    "NAME": "LUN_vvol_snapshot5_1",
    "DESCRIPTION": "",
    "SUBTYPE":1,
    "isReadOnly":1
}

Response:
{
  "data": {
    "CASCADEDLEVEL": "0",
    "CASCADEDNUM": "0",
    "CONSUMEDCAPACITY": "0",
    "DESCRIPTION": "",
    "EXPOSEDTOINITIATOR": "false",
    "HEALTHSTATUS": "1",
    "HYPERCOPYIDS": "",
    "ID": "9",
    "IOCLASSID": "",
    "IOPRIORITY": "1",
    "ISSCHEDULEDSNAP": "0",
    "NAME": "LUN_vvol_snapshot5_1",
    "PARENTID": "5",
    "PARENTNAME": "LUNvvol_test1",
    "PARENTTYPE": 11,
    "ROLLBACKENDTIME": "-1",
    "ROLLBACKRATE": "-1",
    "ROLLBACKSPEED": "2",
    "ROLLBACKSTARTTIME": "-1",
    "ROLLBACKTARGETOBJID": "4294967295",
    "ROLLBACKTARGETOBJNAME": "--",
    "RUNNINGSTATUS": "43",
    "SOURCELUNCAPACITY": "2097152",
    "SOURCELUNID": "5",
    "SOURCELUNNAME": "LUNvvol_test1",
    "SUBTYPE": "1",
    "TIMESTAMP": "1579369258",
    "TYPE": 27,
    "USERCAPACITY": "2097152",
    "WORKINGCONTROLLER": "--",
    "WORKLOADTYPEID": "5",
    "WORKLOADTYPENAME": "LUNvvol_test1",
    "WWN": "674a063100f95e3800596c1d00000009",
    "isReadOnly": "1",
    "replicationCapacity": "0",
    "snapCgId": "4294967295",
    "snapCgName": "--",
     "NGUID":"7100015ca60002d55ce883d400000002",
     "coupleUuid": "00100DFFBF6000062100D30203040506",
     "vstoreId":"0",
```


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```
    "vstoreName":"System_vStore"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.9.1.1.5 Interface for Creating a Snapshot Consistency Group

Function

This interface is used to create a snapshot consistency group.

HighRisk

You are about to create a snapshot consistency group. This operation will reclaim data of the member LUNs in the target LUN group. Before this operation, ensure that the host is not reading or writing the member LUNs in the target LUN group, and no data of these LUN is stored in the host cache.

Suggestion: If you want to retain data of these LUN, back up the data in advance.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The value must be specified and can contain only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
PARENTID	Mandatory	string	Parent object ID (protection group ID). **The value is described as follows:** 0 to 16383.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Snapshot consistency group ID. **The value is described as follows:** 0 to 8191.
DESCRIPTION	Optional	string	Description. **Length:**1~255
dstLunGroupId	Optional	uint32	ID of the target LUN group. **The value is described as follows:** 0 to 16383.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57646: snapshot consistency group
ID	Mandatory	string	Snapshot consistency group ID.
NAME	Mandatory	string	Snapshot consistency group name.
PARENTID	Mandatory	string	ID of the parent object (LUN consistency group ID).
PARENTNAME	Mandatory	string	Name of the parent object (LUN consistency group name).
PARENTTYPE	Mandatory	enum	Type of the parent object. **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 45: unactivated 53: initializing 106: deleting
TIMESTAMP	Mandatory	string	Time when a snapshot consistency group is activated.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest **Note:**"-1" indicates an invalid value.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a snapshot consistency group.

```
Request: POST /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP
{
   "DESCRIPTION": "" ,
   "NAME": "snapCg1",
   "PARENTID": "1"
}
Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "1",
      "NAME": "snapCg1",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
```

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```
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.1.1.6 Interface for Creating a Snapshot Consistency Group Copy

Function

This interface is used to create a snapshot consistency group copy.

HighRisk

You are about to create a snapshot consistency group copy. This operation will reclaim data of the member LUNs in the target LUN group. Before this operation, ensure that the host is not reading or writing the member LUNs in the target LUN group, and no data of these LUN is stored in the host cache.Suggestion: If you want to retain data of these LUN, back up the data in advance.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENCY_GROUP/createcopy

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
COPYSOURCEID	Conditional	string	Specifies the ID of the source snapshot consistency group copy. If the source object of a snapshot consistency group copy is a snapshot consistency group, this parameter must be delivered. **The value is described as follows:** 0–8191. **Note:**None.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SOURCECDPCGID	Conditional	string	Specifies the source HyperCDP consistency group ID of the snapshot consistency group copy. If the source object of the snapshot consistency group copy is a HyperCDP consistency group, this parameter must be delivered. **The value is described as follows:** 0–99999. **Note:**None.
NAME	Mandatory	string	Name of the snapshot consistency group copy. **The value is described as follows:** The value cannot be empty and can contain only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**1~255
ID	Optional	string	Specifies the ID of a snapshot consistency group copy. **The value is described as follows:** 0–8191.
dstLunGroupId	Optional	uint32	ID of the target LUN group. **The value is described as follows:** 0–16383.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57646: snapshot consistency group
ID	Mandatory	string	Specifies the ID of a snapshot consistency group copy.
NAME	Mandatory	string	Name of the snapshot consistency group copy.
PARENTID	Mandatory	string	Parent object ID (LUN consistency group ID).
PARENTNAME	Mandatory	string	Name of the parent object (LUN consistency group name).
PARENTTYPE	Mandatory	enum	Parent object type. **Note:**This field has been discarded.
RUNNINGSTATUS	Mandatory	string	Indicates the running status. **The value is described as follows:** 0: unknown 43: activated 44: Rolling back 45: deactivated 53: Initializing 106: deleting
TIMESTAMP	Mandatory	string	Indicates the time when the snapshot consistency group copy is activated.

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Parameter	Mandatory/ Conditional	Type	Description
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The value -1 is invalid.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-).

Example

- Creating a snapshot consistency group copy.

```
Request: POST /deviceManager/rest/210235843910E6000009/CONSISTENCY_GROUP/createcopy
{
   "COPYSOURCEID": "1",
   "NAME": "snapCgCopy"
}
Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "2",
      "NAME": "snapCgCopy",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.1.1.7 Interface for Creating a Snapshot Copy

Function

This interface is used to create a snapshot copy.

HighRisk

You are about to create a snapshot copy. This operation will reclaim data of the target LUN. Before this operation, ensure that the host is not reading or writing the target LUN, and no data of the target LUN is stored in the host cache.

Suggestion: If you want to retain data of the target LUN, back up the data in advance.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/createcopy

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Name of the snapshot copy. **The value is described as follows:** The value cannot be empty and can contain only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**Enter at least one of NAME and dstLunId.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	Source snapshot ID of the snapshot copy. If the source object of the snapshot copy is a snapshot, this parameter must be delivered. **The value is described as follows:** 0 to 65535. **Note:**None.
CDPID	Conditional	uint32	Source HyperCDP ID of the snapshot copy. If the source object of the snapshot copy is a HyperCDP object, this parameter must be delivered. **The value is described as follows:** 0 to 1999999. **Note:**None.
DESCRIPTION	Optional	string	Description. **The value is described as follows:** -- **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Whether the current request needs to be returned after the synchronization is complete. **The value is described as follows:** 0: asynchronous 1: synchronous **Default:**1: synchronous **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
SUBTYPE	Optional	uint32	Snapshot subtype. **The value is described as follows:** 0: common snapshot 1: VVol snapshot **Default:**0: common snapshot **Note:**This parameter is mandatory for VVol snapshots.

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Parameter	Mandatory/Optional/Conditional	Type	Description
dstLunId	Conditional	uint32	ID of the target LUN. **The value is described as follows:** 0 to 65535. **Note:**Enter at least one of NAME and dstLunId. The dstLunId field can be delivered when the snapshot subtype is common snapshots.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	Snapshot copy ID. **The value is described as follows:** --
NAME	Mandatory	string	Name of the snapshot copy. **The value is described as follows:** --
PARENTTYPE	Mandatory	enum	Parent object type. **The value is described as follows:** 11: LUN 27: snapshot
PARENTID	Mandatory	string	Parent object ID. **The value is described as follows:** --

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Parameter	Mandatory/ Conditional	Type	Description
SOURCELUNCAPACITY	Mandatory	string(uint64)	Capacity of the source LUN. **The value is described as follows:** --
PARENTNAME	Mandatory	string	Parent object name. **The value is described as follows:** --
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Active 44: Rolling back 45: Inactive 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** --
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The default value is the local time. **The value is described as follows:** --

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Rollback start time. The default value is the local time. **The value is described as follows:** -- **Note:**"-1" is an invalid value.
ROLLBACKENDTIME	Mandatory	string(uint64)	Rollback end time. The default value is the local time. **The value is described as follows:** -- **Note:**"-1" is an invalid value.
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" is an invalid value.
ROLLBACKRATE	Mandatory	string(uint32)	Rollback progress. **The value is described as follows:** 0 to 100. **Note:**"-1" is an invalid value.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapping status. **The value is described as follows:** --
WWN	Mandatory	string	WWN. **The value is described as follows:** --

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Parameter	Mandatory/ Conditional	Type	Description
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity. **The value is described as follows:** --
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **The value is described as follows:** --
WORKINGCONTROLLER	Mandatory	string	Working controller. **The value is described as follows:** --
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot
CASCADEDLEVEL	Mandatory	string(uint32)	Cascading level. **The value is described as follows:** 0 to 7.
CASCADEDNUM	Mandatory	string(uint32)	Number of cascaded snapshots. **The value is described as follows:** 0 to 1023.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKTARGETOB-JID	Mandatory	string	ID of the target object to be rolled back. **The value is described as follows:** -- **Note:**4294967295 is an invalid value.
ROLLBACKTARGETOBJ NAME	Mandatory	string	Name of the object to be rolled back. **The value is described as follows:** --
SOURCELUNID	Mandatory	string	Source LUN ID. **The value is described as follows:** --
SOURCELUNNAME	Mandatory	string	Source LUN name. **The value is described as follows:** --
replicationCapacity	Mandatory	string(uint64)	Data protection capacity of the snapshot. **The value is described as follows:** --
IOCLASSID	Mandatory	string	I/O class object ID. **The value is described as follows:** --
ISSCHEDULEDSNAP	Mandatory	string(enum)	Specifies whether a snapshot is a periodic snapshot. **The value is described as follows:** 0: no 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
isReadOnly	Mandatory	string(uint32_t)	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot 1: read-only snapshot
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Create a snapshot copy.

```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot/createcopy
{
    "ID": "12",
    "NAME": "snap_copy_1"
}
Response: {
    "data": {
        "CASCADEDLEVEL":"0",
        "CASCADEDNUM":"0",
        "CONSUMEDCAPACITY":"0",
        "DESCRIPTION":"",
        "EXPOSEDTOINITIATOR":"false",
        "HEALTHSTATUS":"1",
        "ID":"13",
        "IOCLASSID":"",
        "IOPRIORITY":"1",
        "ISSCHEDULEDSNAP":"0",
        "NAME":"snap_copy_1",
        "NGUID":"7100d3cf7a0147389c741a750000000d",
        "PARENTID":"10",
        "PARENTNAME":"lun_1",
        "PARENTTYPE":11,
        "ROLLBACKENDTIME":"-1",
        "ROLLBACKRATE":"-1",
        "ROLLBACKSPEED":"2",
        "ROLLBACKSTARTTIME":"-1",
        "ROLLBACKTARGETOBJID":"4294967295",
        "ROLLBACKTARGETOBJNAME":"--",
        "RUNNINGSTATUS":"43",
        "SOURCELUNCAPACITY":"20971520",
        "SOURCELUNID":"11",
```

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```
        "SOURCELUNNAME":"lun_1",
        "SUBTYPE":"0",
        "TIMESTAMP":"1614851347",
        "TYPE":27,
        "USERCAPACITY":"20971520",
        "WORKINGCONTROLLER":"--",
        "WWN":"69c741a100d3cf7a014738750000000d",
        "isReadOnly":"0",
        "replicationCapacity":"0",
        "snapCgId":"4294967295",
        "snapCgName":"--",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error":{
        "code":0,
        "description":"0"
    }
}
```


- Creating a VVol snapshot copy.


```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot/createcopy
{
    "ID": "1",
    "NAME": "vvolsnapcopy",
    "SUBTYPE":1
}
Response:
{
    "data": {
        "CASCADEDLEVEL": "0",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "ID": "2",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "vvolsnapcopy",
        "NGUID": "710004050601db49b100004300000002",
        "PARENTID": "0",
        "PARENTNAME": "LUN_vvol_2",
        "PARENTTYPE": 11,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "2",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "43",
        "SOURCELUNCAPACITY": "2097152",
        "SOURCELUNID": "0",
        "SOURCELUNNAME": "LUN_vvol_2",
        "SUBTYPE": "1",
        "TIMESTAMP": "1614856797",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "--",
        "WWN": "6b1000010004050601db494300000002",
        "isReadOnly": "0",
        "replicationCapacity": "0",
        "snapCgId": "4294967295",
        "snapCgName": "--",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
```


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```
    "description": "0"
  }
}
}
```

2.9.1.1.8 Interface for Creating Snapshots in Batches

Function

This interface is used to create snapshots in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Snapshot ID. **The value is described as follows:** 0 to 65535.
NAME	Conditional	string	Name. **The value is described as follows:** The value cannot be left blank and can contain only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**At least one of NAME and dstLunId must be set.
PARENTTYPE	Optional	enum	Parent object type. **The value is described as follows:** 11: LUN 27: snapshot **Default:**11: LUN

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	Parent object ID. **The value is described as follows:** 0 to 65535.
DESCRIPTION	Optional	string	Description. **Length:**0~255
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	ID.
NAME	Mandatory	string	Snapshot name.
parentType	Mandatory	enum	Parent object type. **The value is described as follows:** 11: LUN 27: SNAPSHOT
parentID	Mandatory	string	Parent object ID. **The value is described as follows:** 0-16383
healthStatus	Mandatory	enum	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write-protected

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Parameter	Mandatory/ Conditional	Type	Description
runningStatus	Mandatory	enum	Running status. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 45: Unactivated 53: Initializing 106: Deleting
description	Mandatory	string	Description.
subType	Mandatory	uint32	Subtype. **The value is described as follows:** 0: snapshot of a common LUN 1: VVol snapshot
timeStamp	Mandatory	uint64	Snapshot time point. By default, the local time is returned.
rollbackStarttime	Mandatory	uint64	Rollback start time. The local time is returned by default. **The value is described as follows:** -- **Note:**"-1" is an invalid value.
rollbackEndtime	Mandatory	uint64	Rollback end time. The local time is returned by default. **The value is described as follows:** -- **Note:**"-1" is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
rollbackSpeed	Mandatory	enum	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" is an invalid value.
rollbackRate	Mandatory	uint32	Rollback progress. **The value is described as follows:** 0 to 100. **Note:**"-1" is an invalid value.
exposedToInitiator	Mandatory	bool	Mapping status. **The value is described as follows:** true: yes false: no
wwn	Mandatory	string	WWN.
userCapacity	Mandatory	uint64	User capacity of a snapshot.
consumedCapacity	Mandatory	uint64	Capacity consumed by snapshots.
replicationCapacity	Mandatory	uint64	Data protection capacity of a snapshot.
sourceLunId	Mandatory	string	ID of the source LUN. **The value is described as follows:** 0-16383
sourceLunName	Mandatory	string	Name of the source LUN. **The value is described as follows:** Source LUN name.

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Parameter	Mandatory/ Conditional	Type	Description
cascadedLevel	Mandatory	uint32	Cascading level. **The value is described as follows:** 0..7
NGUID	Mandatory	string	Globally unique identifier of a namespace. **The value is described as follows:** Hexadecimal digits (0 to 9 and a to f)
sourceLunCapacity	Mandatory	uint64	Capacity of the source LUN.
isReadOnly	Mandatory	uint32	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot 1: read-only snapshot
coupleUuid	Mandatory	string	Unique identifier of the snapshot. **The value is described as follows:** The value is a hexadecimal number ranging from 0 to 9 or from a to f.
isScheduledSnap	Mandatory	enum	Whether the snapshot is a periodic snapshot. **The value is described as follows:** 0: no 1: yes
workloadName	Mandatory	string	Application type of the source LUN.
workloadTypeId	Mandatory	string	Application type ID. **The value is described as follows:** Same as the application type ID specifications.

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Parameter	Mandatory/ Conditional	Type	Description
rollbackTargetObjID	Mandatory	string	ID of the object to be rolled back. **The value is described as follows:** 0..16383 **Note:**"4294967295" is an invalid value.
workingController	Mandatory	string	Working controller.
IOPriority	Mandatory	enum	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
cascadedNum	Mandatory	uint32	Number of cascading snapshots. **The value is described as follows:** 0..1023
rollbackTargetObj-Name	Mandatory	string	Name of the object to be rolled back.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating snapshots for common LUNs in batches.

```
Request: POST /deviceManager/rest/2102353QQR10L4000001/snapshot/batch
[{
   "PARENTTYPE": 11,
   "PARENTID": "11",
   "NAME": "lun100_00002102051034563",
   "DESCRIPTION": ""
},
{
   "PARENTTYPE": 11,
   "PARENTID": "12",
   "NAME": "lun100_00002102051034564",
   "DESCRIPTION": ""
}]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "NAME": "lun100_00002102051034563",
         "PARENTID": "11",
```

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```
        "PARENTTYPE": 11,
        "TYPE": 27,
        "IOPRIORITY": "1",
        "TIMESTAMP": "1639552594",
        "ID": "16",
        "IOCLASSID": "",
        "exposedToInitiator": "0",
        "HEALTHSTATUS": "1",
        "capacity": "209715200",
        "cascadedNum": "0",
        "sourceLunCapacity": "209715200",
        "consumedCapacity": "0",
        "replicationCapacity": "0",
        "WWN": "6c4ff1f100ee3d72018f8a5e00000010",
        "NGUid": "7100ee3d72018f8ac4ff1f5e00000010",
        "ISSCHEDULEDSNAP": "0",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "SOURCELUNID": "11",
        "SOURCELUNNAME": "LUN0040008",
        "workingController": "--",
        "WORKLOADTYPEID": "0",
        "WORKLOADTYPENAME": "Default",
        "RUNNINGSTATUS": "43",
        "ROLLBACKSTARTTIME": "18446744073709551615",
        "ROLLBACKENDTIME": "18446744073709551615",
        "ROLLBACKSPEED": "2",
        "ROLLBACKRATE": "4294967295",
        "cascadedLevel": "0",
        "rollbackTargetObjID": "4294967295",
        "rollbackTargetObjName": "--",
        "isReadOnly": "0",
        "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
        }
    },
    {
        "DESCRIPTION": "",
        "NAME": "lun100_00002102051034564",
        "PARENTID": "12",
        "PARENTTYPE": 11,
        "TYPE": 27,
        "IOPRIORITY": "1",
        "TIMESTAMP": "1639552594",
        "ID": "17",
        "IOCLASSID": "",
        "exposedToInitiator": "0",
        "HEALTHSTATUS": "1",
        "capacity": "209715200",
        "cascadedNum": "0",
        "sourceLunCapacity": "209715200",
        "consumedCapacity": "0",
        "replicationCapacity": "0",
        "WWN": "6c4ff1f100ee3d72018f8a5e00000011",
        "NGUid": "7100ee3d72018f8ac4ff1f5e00000011",
        "ISSCHEDULEDSNAP": "0",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "SOURCELUNID": "12",
        "SOURCELUNNAME": "LUN0040009",
        "workingController": "--",
        "WORKLOADTYPEID": "0",
        "WORKLOADTYPENAME": "Default",
        "RUNNINGSTATUS": "43",
        "ROLLBACKSTARTTIME": "18446744073709551615",
```

```
            "ROLLBACKENDTIME": "18446744073709551615",
            "ROLLBACKSPEED": "2",
            "ROLLBACKRATE": "4294967295",
            "cascadedLevel": "0",
            "rollbackTargetObjID": "4294967295",
            "rollbackTargetObjName": "--",
            "isReadOnly": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.1.1.9 (Not Recommended) Interface for Adding a LUN Consistency Group to a HyperCDP Schedule

Function

This interface is used to add a LUN consistency group to a HyperCDP schedule (you are advised to use Interface for Adding a Protection Group to a HyperCDP Schedule instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of a LUN consistency group. **The value is described as follows:** 0 to 16383.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of a managed object. **The value is described as follows:** 57645: LUN consistency group

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a HyperCDP schedule.
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule 1: HyperCDP schedule
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

After LUN consistency groups are added, the specified HyperCDP schedule is applied to these LUN consistency groups.

Example

- Adding a LUN consistency group to a HyperCDP schedule.

```
Request: POST /deviceManager/rest/2014060910000000000/snapshot_schedule/create_associate
{
    "ID": "1",
    "ASSOCIATEOBJTYPE": 57645,
    "ASSOCIATEOBJID": "6",
    "SCHEDULETYPE": 1
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.2 Delete

2.9.1.2.1 Interface for Batch Deleting Snapshots

Function

Delete snapshots in batches.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/batch

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SNAPSHOTLIST	Mandatory	string	Snapshot ID list. **The value is described as follows:** A maximum of 128 snapshot IDs are supported.
SUBTYPE	Optional	uint32	Snapshot type. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot

Result

N/A

Example

- Delete snapshots in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/snapshot/batch
{"SNAPSHOTLIST":["81","82"]}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.2.2 Interface for Deleting a Snapshot

Function

This interface is used to delete a snapshot.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isDeleteDstLun	Optional	bool	Whether to delete the target LUN. If this parameter is not specified, the target LUN is deleted by default. **The value is described as follows:** 0: no Non-0: yes **Default:**1
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before you perform this operation, ensure that you have selected the correct snapshot and that you do not need the data protected by the snapshot.

Example

- Deleting a snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/snapshot/1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.2.3 Interface for Deleting a Snapshot Consistency Group

Function

This interface is used to delete a snapshot consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/${id}

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot consistency group ID. **The value is described as follows:** 0 to 8191.
isDeleteDstLun	Optional	bool	Whether to delete the target LUN. **The value is described as follows:** 0: no Non-0: yes **Default:**1
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Deleting a snapshot consistency group.

```
Request: DELETE /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP/1
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.2.4 Interface for Removing a LUN from a HyperCDP Schedule

Function

This interface is used to remove a LUN from a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/remove_associate

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of the LUN to be removed.
ASSOCIATEOBJTYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 11: LUN
ID	Mandatory	string	ID of the HyperCDP schedule.
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023.

Result

N/A

Usage Guidelines

1:Before performing the operation, confirm that the schedule ID is correct and exits.

2:Before performing the operation, confirm that the LUN ID is correct and exits.

Example

- Removing the LUN from the HyperCDP schedule.

```
Request: DELETE/deviceManager/rest/20140609100000000000/snapshot_schedule/remove_associate?ID=2&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=6&SCHEDULETYPE=1

Response: {
   "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.2.5 Interface for Removing a Protection Group from a HyperCDP Schedule

Function

This interface is used to remove a protection group from a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/remove_associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of the protection group. **The value is described as follows:** The value is an integer from 0 to 8191.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57846: protection group
ID	Mandatory	string	ID of the HyperCDP schedule.
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule

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Parameter	Mandatory/Optional/Conditional	Type	Description
subType	Optional	uint32	Indicates the type of the protection group. **The value is described as follows:** 0..16383 **Note:** The value 0 indicates a protection group of common LUNs. The value 1 indicates the protection group of VVol LUNs. If this field is not delivered, it indicates the protection group of common LUNs. Other values are not supported.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023.

Result

N/A

Usage Guidelines

1:Before performing the operation, confirm that the schedule ID is correct and exists.

2:Before performing the operation, confirm that the protection group ID is correct and exists.

Example

- Removing a protection group from a HyperCDP schedule.

```
Request: DELETE/deviceManager/rest/20140609100000000000/snapshot_schedule/remove_associate?
ID=1&ASSOCIATEOBJTYPE=57846&ASSOCIATEOBJID=6&SCHEDULETYPE=1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.9.1.2.6 Interface for Removing Member LUNs from a Protection Group in a HyperCDP Schedule

Function

Remove member LUNs from a protection group in a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/remove_lun

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCDP schedule ID. **The value is described as follows:** The value is an integer from 1 to 512.
ASSOCIATEOBJID	Mandatory	string	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
LUNIDARRAY	Mandatory	array	LUN ID list.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023

Result

N/A

Usage Guidelines

1:Before performing the operation, confirm that the schedule ID is correct and exists.

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2:Before performing the operation, confirm that the LUN ID is correct and exists.

3:Before performing this operation, check whether the protection group ID is correct and exists.

Example

- Remove member LUNs from a protection group in a HyperCDP schedule.

```
Request: PUT /deviceManager/rest/201406091000000000000/snapshot_schedule/remove_lun

{
   "ID": "5",
   "ASSOCIATEOBJID": 2,
   "LUNIDARRAY": "[6]"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.2.7 (Not Recommended) Interface for Removing a LUN Consistency Group from a HyperCDP Schedule

Function

This interface is used to remove a LUN consistency group from a HyperCDP schedule (you are advised to use Interface for Removing a Protection Group from a HyperCDP Schedule instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/remove_associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	ID of the LUN consistency group. **The value is described as follows:** 0 to 16383.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57645: LUN consistency group
ID	Mandatory	string	ID of the HyperCDP schedule.
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule 1: HyperCDP schedule
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

1:Before performing the operation, confirm that the schedule ID is correct and exists.

2:Before performing the operation, confirm that the LUN consistency group ID is correct and exists.

Example

- Removing the LUN consistency group from the HyperCDP schedule.

```
Request: DELETE /deviceManager/rest/2014060910000000000/snapshot_schedule/remove_associate?
ID=1&ASSOCIATEOBJTYPE=57645&ASSOCIATEOBJID=6&SCHEDULETYPE=1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.3 Modify

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2.9.1.3.1 Interface for Modifying a Snapshot

Function

This interface is used to modify a snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
NAME	Optional	string	Name. **The value is described as follows:** The value cannot be empty and contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
MSGRETURNTYPE	Optional	enum	Labels whether the response to this request is returned until the synchronization is complete. **The value is described as follows:** 0: ASYNC 1: SYNC **Default:**1: SYNC **Note:** Asynchronous: After a command is delivered, a message is returned to the system immediately. The operation object can be used only after its status changes to normal. Synchronous: After a command is delivered, a message is returned to the system after the operation is executed successfully. Then the operation object can be used normally.
ROLLBACKSPEED	Optional	enum	Snapshot rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The default rollback speed is medium. Only the rollback speed of virtual snapshots that are being rolled back can be changed.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IOPRIORITY	Optional	enum	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Modifying a snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/2
{
   "NAME": "test123",
   "DESCRIPTION": "TEST"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.3.2 Interface for Modifying a Snapshot Consistency Group

Function

This interface is used to modify a snapshot consistency group.

HighRisk

You are about to change the rollback rate of the snapshot consistency group ({0}). This operation may cause heavy service load and decrease the read/write performance of the host.

Suggestion: Select the medium speed. If you select the high or highest speed, perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/${id}

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot consistency group ID. **The value is described as follows:** 0 to 8191.
NAME	Optional	string	Name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
RESTORESPEED	Optional	string	Rollback speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest
DESCRIPTION	Optional	string	Description. **Length:**1~255
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Modifying a snapshot consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/SNAPSHOT_CONSISTENCY_GROUP/1
{
   "NAME": "snapCg",
   "DESCRIPTION": "first_snapCg",
   "RESTORESPEED": "1"
}
```

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```
Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.4 Query

2.9.1.4.1 Interface for Batch Querying Snapshot Consistency Groups

Function

This interface is used to batch query snapshot consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filtering criteria. **The value is described as follows:** Parameters NAME, ID, and RUNNINGSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j], "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57646: snapshot consistency group
ID	Mandatory	string	Snapshot consistency group ID.
NAME	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the parent object (LUN consistency group ID).

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the parent object (LUN consistency group name). **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTTYPE	Mandatory	enum	Type of the parent object. **Note:**The field is not used.
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 45: unactivated 53: initializing 106: deleting
TIMESTAMP	Mandatory	string	Time when a snapshot consistency group is activated.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest **Note:**"-1" indicates an invalid value.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Batch querying basic information about snapshot consistency groups.

```
Request: GET /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP?
range=[0-100]
Response: {
   "data": [
    {
      "DESCRIPTION": "",
      "ID": "1",
      "NAME": "snapCg1",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   }, {
      "DESCRIPTION": "",
      "ID": "2",
      "NAME": "snapCg2",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   }
  ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.4.2 Interface for Batch Querying Snapshot Information

Function

This interface is used to batch query basic information about snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT?
timeConversion=0

Access Method

GET

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following parameters are supported: ID, NAME, RUNNINGSTATUS, HEALTHTATUS, TIMESTAMP, PARENTID, PARENTNAME, SOURCELUNNAME, SOURCELUNID, CASCADEDLEVEL, and ISSCHEDULEDSNAP. **Note:**The value of this parameter is an interval, for example, [1471490000,1471535000], [1471490000,), and (,1471535000].
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned in the query result. If the range parameter is not specified, a maximum of 4096 records can be returned in the query result.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RSSTYPE	Optional	enum	Type of the snapshot that supports value-added features. **The value is described as follows:** 22: LUN that supports snapshots 33: target object that can be used for snapshot rollback 38: LUN that can function as the source object of a HyperCopy pair
RSSASSOCIATEOBJID		string	Value-added associated object ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	ID of the parent object.
PARENTNAME	Mandatory	string	Name of the parent object (LUN name).
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 45: unactivated 53: initializing 106: deleting
DESCRIPTION	Mandatory	string	Description.
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The local time is returned by default.
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Time when the rollback starts. The local time is returned by default.
ROLLBACKENDTIME	Mandatory	string(uint64)	Time when the rollback ends. The local time is returned by default.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
ROLLBACKRATE	Mandatory	string(uint32)	Rollback progress. **The value is described as follows:** 0 to 100.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapping status. **The value is described as follows:** true: mapped false: unmapped
WWN	Mandatory	string	WWN.
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity, expressed in sectors. **Unit:**sectors
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots, expressed in sectors. **Unit:**sectors
WORKINGCONTROLLER	Mandatory	string	Working controller.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high

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Parameter	Mandatory/ Conditional	Type	Description
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot
replicationCapacity	Mandatory	string(uint64)	Capacity protected by snapshots, expressed in sectors.
CASCADEDLEVEL	Mandatory	string(uint32)	Cascaded level. **The value is described as follows:** 0 to 7.
CASCADEDNUM	Mandatory	string(uint32)	Number of cascaded snapshots. **The value is described as follows:** 0 to 1023.
SOURCELUNID	Mandatory	string	ID of the source LUN.
SOURCELUNNAME	Mandatory	string	Name of the source LUN.
ROLLBACKTARGETOB-JID	Mandatory	string	Rollback object ID. **Note:**"4294967295" indicates an invalid value.
ROLLBACKTARGETOBJ NAME	Mandatory	string	Rollback object name.
IOCLASSID	Mandatory	string	ID of the I/O class object.
SOURCELUNCAPACITY	Mandatory	string(uint64)	Source LUN capacity. **Unit:**sectors
WORKLOADTYPEID	Mandatory	string	Application type ID of the source LUN. **Note:**"4294967295" indicates an invalid value.
WORKLOADTYPENAM E	Mandatory	string	Application type name of the source LUN.

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Parameter	Mandatory/ Conditional	Type	Description
ISSCHEDULEDSNAP	Mandatory	string(enum)	Whether the snapshot is a timing snapshot. **The value is described as follows:** 0: no 1: yes
snapCgName	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.).
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying basic information about snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/SNAPSHOT?range=[0-100]

Response: {
   "data": [
      {
         "CASCADEDLEVEL": "0",
         "CASCADEDNUM": "1",
         "CONSUMEDCAPACITY": "0",
         "DESCRIPTION": "",
         "EXPOSEDTOINITIATOR": "false",
         "HEALTHSTATUS": "1",
         "ID": "12",
         "IOCLASSID": "",
         "IOPRIORITY": "1",
         "SOURCELUNCAPACITY": "2097152",
         "ISSCHEDULEDSNAP": "0",
```

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```
        "NAME": "gz0000_Snap_1707251229076",
        "NGUID": "7100015ca6001d0b5ce8832600000005",
        "PARENTID": "7",
        "PARENTNAME": "gz0000",
        "PARENTTYPE": 11,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "43",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "TIMESTAMP": "1501013445",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e600089fd70000000c",
        "replicationCapacity": "0",
        "WORKLOADTYPEID": "14",
        "WORKLOADTYPENAME": "Databases",
        "snapCgName": "SnapCG0"
    },
    {
        "CASCADEDLEVEL": "1",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "ID": "15",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "SOURCELUNCAPACITY": "2097152",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "gz0000_Snap_1707251229263",
        "NGUID": "7100015ca6001d0b5ce8832600000006",
        "PARENTID": "12",
        "PARENTNAME": "gz0000_Snap_1707251229076",
        "PARENTTYPE": 27,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "45",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "TIMESTAMP": "-1",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e60008b5710000000f",
        "replicationCapacity": "0",
        "WORKLOADTYPEID": "13",
        "WORKLOADTYPENAME": "Datab2ases",
        "snapCgName": "SnapCG1"
    }
],
"error": {
    "code": 0,
```


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```
        "description": "0"
    }
}
```

- Batch querying basic information about snapshots. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/SNAPSHOT?timeConversion=0

Response: {
    "data": [
        {
            "CASCADEDLEVEL": "0",
            "CASCADEDNUM": "0",
            "CONSUMEDCAPACITY": "0",
            "DESCRIPTION": "",
            "EXPOSEDTOINITIATOR": "false",
            "HEALTHSTATUS": "1",
            "ID": "100",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISSCHEDULEDSNAP": "0",
            "NAME": "snap",
            "NGUID": "7100015ca6001d0b5ce8832600000005",
            "PARENTID": "0",
            "PARENTNAME": "lun0000",
            "PARENTTYPE": 11,
            "ROLLBACKENDTIME": "-1",
            "ROLLBACKRATE": "-1",
            "ROLLBACKSPEED": "2",
            "ROLLBACKSTARTTIME": "-1",
            "ROLLBACKTARGETOBJID": "4294967295",
            "ROLLBACKTARGETOBJNAME": "--",
            "RUNNINGSTATUS": "43",
            "SOURCELUNCAPACITY": "2097152",
            "SOURCELUNID": "0",
            "SOURCELUNNAME": "lun0000",
            "SUBTYPE": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore",
            "TIMESTAMP": "1582186663",
            "TYPE": 27,
            "USERCAPACITY": "2097152",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "0",
            "WORKLOADTYPENAME": "lun0000",
            "WWN": "6ff0203100040506012921bf00000064",
            "replicationCapacity": "0",
            "snapCgName": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Batch querying snapshots by name.

```
Request: GET /deviceManager/rest/210235843910E6000009/SNAPSHOT?filter=NAME:
000&range=[0-100]

Response: {
    "data": [
        {
            "CASCADEDLEVEL": "0",
            "CASCADEDNUM": "1",
            "CONSUMEDCAPACITY": "0",
            "DESCRIPTION": "",
            "EXPOSEDTOINITIATOR": "false",
            "HEALTHSTATUS": "1",
            "ID": "12",
            "IOCLASSID": "",
```

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```
        "IOPRIORITY": "1",
        "SOURCELUNCAPACITY": "2097152",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "gz0000_Snap_1707251229076",
        "NGUID": "7100015ca6001d0b5ce8832600000005",
        "PARENTID": "7",
        "PARENTNAME": "gz0000",
        "PARENTTYPE": 11,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "43",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "TIMESTAMP": "1501013445",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e600089fd70000000c",
        "replicationCapacity": "0",
        "WORKLOADTYPEID": "14",
        "WORKLOADTYPENAME": "Databases",
        "snapCgName": "SnapCG0"
    },
    {
        "CASCADEDLEVEL": "1",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "ID": "15",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "SOURCELUNCAPACITY": "2097152",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "gz0000_Snap_1707251229263",
        "NGUID": "7100015ca6001d0b5ce8832600000006",
        "PARENTID": "12",
        "PARENTNAME": "gz0000_Snap_1707251229076",
        "PARENTTYPE": 27,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "45",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SUBTYPE": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "TIMESTAMP": "-1",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e60008b5710000000f",
        "replicationCapacity": "0",
        "WORKLOADTYPEID": "13",
        "WORKLOADTYPENAME": "Data2bases",
        "snapCgName": "SnapCG1"
    }
```


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```
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.4.3 Interface for Implementing Associated Query of Snapshot Consistency Groups

Function

This interface is used to implement associated query of snapshot consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Optional	enum	Type number of the object. **The value is described as follows:** 57646: snapshot consistency group
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 57645: LUN consistency group
ASSOCIATEOBJID	Mandatory	string	Associated object ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57646: snapshot consistency group
ID	Mandatory	string	Snapshot consistency group ID.
NAME	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the parent object (LUN consistency group ID).

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Name of the parent object (LUN consistency group name). **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTTYPE	Mandatory	enum	Type of the parent object. **Note:**The field is not used.
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 45: unactivated 53: initializing 106: deleting
TIMESTAMP	Mandatory	string	Time when a snapshot consistency group is activated.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Implementing associated query of snapshot consistency groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/SNAPSHOT_CONSISTENCY_GROUP/
associate?TYPE=57646&ASSOCIATEOBJTYPE=57645&ASSOCIATEOBJID=44&range=[0-100]
Response: {
   "data": [
    {
      "DESCRIPTION": "",
      "ID": "1",
      "NAME": "snapCg1",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   }
  ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.4.4 Interface for Implementing Associated Query of Snapshot Information

Function

This interface is used to implement associated query of basic information about snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/associate

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/associate?timeConversion=0

Access Method

GET

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 21: host 230: SmartQoS policy 256: LUN group 245: mapping view 57646: snapshot consistency group
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** If "ASSOCIATEOBJTYPE" is set to the SmartQoS policy and "ASSOCIATEOBJID" is set to "4294967295", snapshots not associated with the SmartQoS policy are queried.

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Parameter	Mandatory/Optional/Conditional	Type	Description

ASSOCIATEMETADATA	Optional	array	Additional data generated by the creation of an association relationship.
			The value is described as follows:
			When the associated object is a host, the service port list can be used in the parameters:
			{
			"ports":
			{
			"fc":
			["PORT_ID1","PORT_ID2","PORT_ID3"],
			"iscsi":
			["PORT_ID1","PORT_ID2","PORT_ID3"]
			}
			}
			The previous data can be used to query snapshots that can be accessed by a host through the ports.

range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, and RUNNINGSTATUS are supported.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot
PARENTID	Mandatory	string	ID of the parent object.
PARENTNAME	Mandatory	string	Name of the parent object.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 45: Unactivated 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The local time is returned by default.
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Time when the rollback starts. The local time is returned by default.
ROLLBACKENDTIME	Mandatory	string(uint64)	Time when the rollback ends. The local time is returned by default.
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
ROLLBACKRATE	Mandatory	string(uint32)	Rollback progress. **The value is described as follows:** 0 to 100.

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Parameter	Mandatory/ Conditional	Type	Description
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapping status. **The value is described as follows:** true: mapped false: unmapped
WWN	Mandatory	string	WWN.
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity, expressed in sectors.
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots, expressed in sectors.
WORKINGCONTROLLER	Mandatory	string	Working controller.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
ASSOCIATETYPE	Conditional	string	Host LUN ID of the snapshot. **The value is described as follows:** 0 to 511. **Note:**This field is returned only when the object type is HOST or Mapping view.

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Parameter	Mandatory/ Conditional	Type	Description
ASSOCIATEMETADATA	Conditional	string	Additional data generated by the creation of an association relationship. **The value is described as follows:** When the associated object is a mapping, the following data is returned: {"HostLUNID":XX}. **Note:**Note: The previous data is a complete string. XX indicates the host LUN ID.
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot
replicationCapacity	Mandatory	string(uint64)	Capacity protected by snapshots, expressed in sectors.
CASCADEDLEVEL	Mandatory	string(uint32)	Cascaded level. **The value is described as follows:** 0 to 7.
CASCADEDNUM	Mandatory	string(uint32)	Number of cascaded snapshots. **The value is described as follows:** 0 to 1023.
IOCLASSID	Mandatory	string	ID of the I/O class object.
SOURCELUNID	Mandatory	string	ID of the source LUN.
SOURCELUNNAME	Mandatory	string	Name of the source LUN.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKTARGETOB-JID	Mandatory	string	Rollback object ID. **Note:**"4294967295" indicates an invalid value.
ROLLBACKTARGETOBJ NAME	Mandatory	string	Rollback object name.
SOURCELUNCAPACITY	Mandatory	string(uint64)	Source LUN capacity.
WORKLOADTYPEID	Mandatory	string	Application type ID of the source LUN. **Note:**"4294967295" indicates an invalid value.
WORKLOADTYPENAM E	Mandatory	string	Application type name of the source LUN.
ISSCHEDULEDSNAP	Mandatory	string(enum)	Whether the snapshot is a timing snapshot. **The value is described as follows:** 0: no 1: yes
NGUID	Mandatory	string	Globally unique identifier (GUID) of the namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Querying snapshots associated with LUN groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/snapshot/associate?
ASSOCIATEOBJTYPE=256&ASSOCIATEOBJID=0&range=[0-100]

Response: {
   "data": [
      {
         "CASCADEDLEVEL": "0",
```

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```
        "CASCADEDNUM": "1",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "ID": "12",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "gz0000_Snap_1707251229076",
        "NGUID": "7100015ca6001d0b5ce8832600000005",
        "PARENTID": "7",
        "PARENTNAME": "gz0000",
        "PARENTTYPE": 11,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "43",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SUBTYPE": "0",
        "SOURCELUNCAPACITY": "4194304",
        "TIMESTAMP": "1501013445",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e600089fd70000000c",
        "replicationCapacity": "0",
        "WORKLOADTYPEID": "14",
        "WORKLOADTYPENAME": "Databases",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    {
        "CASCADEDLEVEL": "1",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
        "ID": "15",
        "IOPRIORITY": "1",
        "IOCLASSID": "",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "gz0000_Snap_1707251229263",
        "NGUID": "7100015ca6001d0b5ce8832600000006",
        "PARENTID": "12",
        "PARENTNAME": "gz0000_Snap_1707251229076",
        "PARENTTYPE": 27,
        "ROLLBACKENDTIME": "-1",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "-1",
        "ROLLBACKSTARTTIME": "-1",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "45",
        "SOURCELUNID": "7",
        "SOURCELUNNAME": "gz0000",
        "SOURCELUNCAPACITY": "4194304",
        "SUBTYPE": "0",
        "TIMESTAMP": "-1",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "0B",
        "WWN": "6a1b2c3100f4d5e60008b5710000000f",
        "replicationCapacity": "0",
```


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```
            "WORKLOADTYPEID": "15",
            "WORKLOADTYPENAME": "Databases324",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying snapshots that can be accessed by some ports.


```
Request: GET /deviceManager/rest/210235843910E6000009/snapshot/associate?
ASSOCIATEOBJTYPE=21&ASSOCIATEOBJID=0&ASSOCIATEMETADATA={%22ports%22: { %22fc%22:
[%221115136%22,%221115138%22,%221114370%22,%221114371%22], %22fcoe%22: [],%22iscsi
%22:
[%22139267%22,%22139268%22,%22139269%22,%22139270%22,%22549772730371%22,%2254977
2730372%22,%22549772730373%22,%22549772730374%22,%22549772722176%22,%225497727221
77%22,%22549772722178%22,%22549772722179%22],%22ib%22:[]}}&range=[0-100]

Response: {
    "data": [
        {
            "ASSOCIATEMETADATA": "{\"HostLUNID\":1}",
            "CASCADEDLEVEL": "0",
            "CASCADEDNUM": "1",
            "CONSUMEDCAPACITY": "0",
            "DESCRIPTION": "",
            "EXPOSEDTOINITIATOR": "true",
            "HEALTHSTATUS": "1",
            "ID": "3",
            "IOPRIORITY": "1",
            "IOCLASSID": "",
            "ISSCHEDULEDSNAP": "0",
            "NAME": "Lun_Snap_1705110318091",
            "NGUID": "7100015ca6001d0b5ce8832600000005",
            "PARENTID": "0",
            "PARENTNAME": "Lun",
            "PARENTTYPE": 11,
            "ROLLBACKENDTIME": "-1",
            "SOURCELUNCAPACITY": "4194304",
            "ROLLBACKRATE": "-1",
            "ROLLBACKSPEED": "-1",
            "ROLLBACKSTARTTIME": "-1",
            "ROLLBACKTARGETOBJID": "4294967295",
            "ROLLBACKTARGETOBJNAME": "--",
            "RUNNINGSTATUS": "43",
            "SOURCELUNID": "7",
            "SOURCELUNNAME": "gz0000",
            "SUBTYPE": "0",
            "TIMESTAMP": "1494501792",
            "TYPE": 27,
            "USERCAPACITY": "2097152",
            "WORKINGCONTROLLER": "0A",
            "WWN": "688cf98100dac530003eee6000000003",
            "replicationCapacity": "0",
            "WORKLOADTYPEID": "14",
            "WORKLOADTYPENAME": "Databases",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "ASSOCIATEMETADATA": "{\"HostLUNID\":2}",
            "CASCADEDLEVEL": "1",
            "CASCADEDNUM": "0",
            "CONSUMEDCAPACITY": "0",
            "DESCRIPTION": "",
            "EXPOSEDTOINITIATOR": "true",
            "HEALTHSTATUS": "1",
```


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```
            "ID": "4",
            "IOPRIORITY": "1",
            "IOCLASSID": "",
            "ISSCHEDULEDSNAP": "0",
            "NAME": "Lun_Snap_1705110320462",
            "NGUID": "7100015ca6001d0b5ce8832600000006",
            "PARENTID": "3",
            "PARENTNAME": "Lun_Snap_1705110318091",
            "PARENTTYPE": 11,
            "ROLLBACKENDTIME": "-1",
            "ROLLBACKRATE": "-1",
            "ROLLBACKSPEED": "-1",
            "ROLLBACKSTARTTIME": "-1",
            "ROLLBACKTARGETOBJID": "4294967295",
            "ROLLBACKTARGETOBJNAME": "--",
            "RUNNINGSTATUS": "45",
            "SOURCELUNID": "7",
            "SOURCELUNNAME": "gz0000",
            "SOURCELUNCAPACITY": "4194304",
            "SUBTYPE": "0",
            "TIMESTAMP": "1494501948",
            "TYPE": 27,
            "USERCAPACITY": "2097152",
            "WORKINGCONTROLLER": "0A",
            "WWN": "688cf98100dac530003f869c00000004",
            "replicationCapacity": "0",
            "WORKLOADTYPEID": "15",
            "WORKLOADTYPENAME": "Databases45",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying snapshots associated with LUN groups. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/snapshot/associate?
ASSOCIATEOBJTYPE=256&ASSOCIATEOBJID=0&timeConversion=0

Response: {
    "data": [
        {
            "CASCADEDLEVEL": "0",
            "CASCADEDNUM": "0",
            "CONSUMEDCAPACITY": "0",
            "DESCRIPTION": "",
            "EXPOSEDTOINITIATOR": "false",
            "HEALTHSTATUS": "1",
            "ID": "100",
            "IOCLASSID": "",
            "IOPRIORITY": "1",
            "ISSCHEDULEDSNAP": "0",
            "NAME": "snap",
            "NGUID": "7100015ca6001d0b5ce8832600000005",
            "PARENTID": "0",
            "PARENTNAME": "lun0000",
            "PARENTTYPE": 11,
            "ROLLBACKENDTIME": "1582289501",
            "ROLLBACKRATE": "-1",
            "ROLLBACKSPEED": "2",
            "ROLLBACKSTARTTIME": "1582289493",
            "ROLLBACKTARGETOBJID": "4294967295",
            "ROLLBACKTARGETOBJNAME": "--",
            "RUNNINGSTATUS": "43",
            "SOURCELUNCAPACITY": "2097152",
            "SOURCELUNID": "0",
            "SOURCELUNNAME": "lun0000",
```

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```
            "SUBTYPE": "0",
            "TIMESTAMP": "1582186663",
            "TYPE": 27,
            "USERCAPACITY": "2097152",
            "WORKINGCONTROLLER": "--",
            "WORKLOADTYPEID": "0",
            "WORKLOADTYPENAME": "lun0000",
            "WWN": "6ff0203100040506012921bf00000064",
            "replicationCapacity": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.1.4.5 Interface for Querying a Snapshot Consistency Group

Function

This interface is used to query a snapshot consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot consistency group ID. **The value is described as follows:** 0 to 8191.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57646: snapshot consistency group
ID	Mandatory	string	Snapshot consistency group ID.
NAME	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTID	Mandatory	string	ID of the parent object (LUN consistency group ID).
PARENTNAME	Mandatory	string	Name of the parent object (LUN consistency group name). **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
PARENTTYPE	Mandatory	enum	Type of the parent object. **Note:**The field is not used.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string	Running status. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 45: unactivated 53: initializing 106: deleting
TIMESTAMP	Mandatory	string	Time when a snapshot consistency group is activated.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest **Note:**"-1" indicates an invalid value.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Querying basic information about a snapshot consistency group.

```
Request: GET /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP/1
Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "1",
      "NAME": "snapCg1",
      "PARENTID": "1",
      "PARENTNAME": "lunCg1",
      "PARENTTYPE":0,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1535546095",
      "TYPE": 57646,
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   },
   "error": {
      "code": 0,
```

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```
    "description": "0"
  }
}
```

2.9.1.4.6 Interface for Querying a Snapshot Information

Function

This interface is used to query basic information about a snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/${id}

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/${id}?timeConversion=0

Access Method

GET

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1: local time
vstoreId	Optional	uint32	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot
ID	Mandatory	string	ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Snapshot name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot
PARENTID	Mandatory	string	ID of the parent object.
PARENTNAME	Mandatory	string	Name of the parent object.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 45: Inactive 53: Initializing 106: Deleting
DESCRIPTION	Mandatory	string	Description.
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The local time is returned by default.
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Time when the rollback starts. The local time is returned by default.
ROLLBACKENDTIME	Mandatory	string(uint64)	Time when the rollback ends. The local time is returned by default.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
ROLLBACKRATE	Mandatory	string(uint32)	Rollback progress. **The value is described as follows:** 0 to 100.
EXPOSEDTOINITIATOR	Mandatory	string(bool)	Mapping status. **The value is described as follows:** true: mapped false: unmapped
WWN	Mandatory	string	WWN.
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity, expressed in sectors.
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots, expressed in sectors.
WORKINGCONTROLLER	Mandatory	string	Working controller.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot

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Parameter	Mandatory/ Conditional	Type	Description
replicationCapacity	Mandatory	string(uint64)	Capacity protected by snapshots, expressed in sectors.
CASCADEDLEVEL	Mandatory	string(uint32)	Cascaded level. **The value is described as follows:** 0 to 7.
CASCADEDNUM	Mandatory	string(uint32)	Number of cascaded snapshots. **The value is described as follows:** 0 to 1023.
SOURCELUNID	Mandatory	string	ID of the source LUN.
SOURCELUNNAME	Mandatory	string	Name of the source LUN.
ROLLBACKTARGETOB-JID	Mandatory	string	Rollback object ID. **Note:**"4294967295" indicates an invalid value.
ROLLBACKTARGETOBJ NAME	Mandatory	string	Rollback object name.
IOCLASSID	Mandatory	string	ID of the I/O class object.
SOURCELUNCAPACITY	Mandatory	string(uint64)	Source LUN capacity.
WORKLOADTYPEID	Mandatory	string	Application type ID of the source LUN. **Note:**"4294967295" indicates an invalid value.
WORKLOADTYPENAM E	Mandatory	string	Application type name of the source LUN.
ISSCHEDULEDSNAP	Mandatory	string(enum)	Whether the snapshot is a timing snapshot. **The value is described as follows:** 0: no 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
snapCgName	Mandatory	string	Snapshot consistency group name. **The value is described as follows:** The name cannot be empty, and contains only letters, digits, underscores (_), hyphens (-), and periods (.).
isReadOnly	Mandatory	uint32	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot. 1: read-only snapshot.
HYPERCOPYIDS	Mandatory	array	List of associated HyperCopy IDs.
snapCgId	Mandatory	string	ID of the snapshot consistency group. **The value is described as follows:** 1 to 4096.
NGUID	Mandatory	string	Globally unique identifier (GUID) of a namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
coupleUuid	Mandatory	string	Snapshot UUID **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Query basic information about a snapshot.

```
Request: GET /deviceManager/rest/210235843910E6000009/snapshot/6

Response:{
  "data": {
    "CASCADEDLEVEL": "0",
    "CASCADEDNUM": "0",
    "CONSUMEDCAPACITY": "0",
    "DESCRIPTION": "",
    "EXPOSEDTOINITIATOR": "false",
    "HEALTHSTATUS": "1",
    "HYPERCOPYIDS": "",
    "ID": "6",
    "IOCLASSID": "",
    "IOPRIORITY": "1",
    "ISSCHEDULEDSNAP": "0",
    "NAME": "lun_vvol_65_snap",
    "NGUID": "7100015ca6001d0b5ce8832600000005",
    "PARENTID": "5",
    "PARENTNAME": "LUNvvol_test1",
    "PARENTTYPE": 11,
    "ROLLBACKENDTIME": "-1",
    "ROLLBACKRATE": "-1",
    "ROLLBACKSPEED": "2",
    "ROLLBACKSTARTTIME": "-1",
    "ROLLBACKTARGETOBJID": "4294967295",
    "ROLLBACKTARGETOBJNAME": "--",
    "RUNNINGSTATUS": "43",
    "SOURCELUNCAPACITY": "2097152",
    "SOURCELUNID": "5",
    "SOURCELUNNAME": "LUNvvol_test1",
    "SUBTYPE": "1",
    "TIMESTAMP": "1579364820",
    "TYPE": 27,
    "USERCAPACITY": "2097152",
    "WORKINGCONTROLLER": "--",
    "WORKLOADTYPEID": "5",
    "WORKLOADTYPENAME": "LUNvvol_test1",
    "WWN": "674a063100f95e3800451d3c00000006",
    "isReadOnly": "1",
    "replicationCapacity": "0",
    "snapCgId": "4294967295",
    "snapCgName": "--"
    "coupleUuid": "00100DFFBF6000062100D30203040506",
    "vstoreId":"0",
    "vstoreName":"System_vStore"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

- Querying basic information about a snapshot. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/snapshot/100?timeConversion=0

Response: {
    "data": {
        "CASCADEDLEVEL": "0",
        "CASCADEDNUM": "0",
        "CONSUMEDCAPACITY": "0",
        "DESCRIPTION": "",
        "EXPOSEDTOINITIATOR": "false",
        "HEALTHSTATUS": "1",
```

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```
        "HYPERCOPYIDS": "",
        "ID": "100",
        "IOCLASSID": "",
        "IOPRIORITY": "1",
        "ISSCHEDULEDSNAP": "0",
        "NAME": "snap",
        "NGUID": "7100015ca6001d0b5ce8832600000005",
        "PARENTID": "0",
        "PARENTNAME": "lun0000",
        "PARENTTYPE": 11,
        "ROLLBACKENDTIME": "1582289501",
        "ROLLBACKRATE": "-1",
        "ROLLBACKSPEED": "2",
        "ROLLBACKSTARTTIME": "1582289493",
        "ROLLBACKTARGETOBJID": "4294967295",
        "ROLLBACKTARGETOBJNAME": "--",
        "RUNNINGSTATUS": "43",
        "SOURCELUNCAPACITY": "2097152",
        "SOURCELUNID": "0",
        "SOURCELUNNAME": "lun0000",
        "SUBTYPE": "0",
        "TIMESTAMP": "1582186663",
        "TYPE": 27,
        "USERCAPACITY": "2097152",
        "WORKINGCONTROLLER": "--",
        "WORKLOADTYPEID": "0",
        "WORKLOADTYPENAME": "lun0000",
        "WWN": "6ff0203100040506012921bf00000064",
        "isReadOnly": "0",
        "replicationCapacity": "0",
        "snapCgId": "4294967295",
        "snapCgName": "--"
        "coupleUuid": "00100DFFBF6000062100D30203040506",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.1.4.7 Interface for Querying Snapshot Information by Couple UUID

Function

Querying basic information about a snapshot by couple UUID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_snapshot_by_couple_uuid

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
coupleUuid	Mandatory	string	Snapshot UUID. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f. **Length:**32

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
TYPE	Mandatory	enum	Type. **The value is described as follows:** 27.
coupleUuid	Mandatory	string	Snapshot UUID. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.

Example

- Querying basic information about a snapshot by couple UUID.

```
Request: GET /deviceManager/rest/210235843910E6000009/get_snapshot_by_couple_uuid?
coupleUuid=1400c030c6162000bc44f563a0740021

Response: {
    "data": {
        "ID": "20",
        "TYPE": 27,
        "coupleUuid": "1400c030c6162000bc44f563a0740021"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.1.4.8 Interface for Querying the Number of Snapshot Consistency Groups

Function

This interface is used to query the number of snapshot consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filtering criteria. **The value is described as follows:** Parameters NAME, ID, and RUNNINGSTATUS are supported.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string	Number of snapshot consistency groups to be queried according to the filtering criteria.

Example

- Querying the number of snapshot consistency groups.

```
Request: GET /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP/count
Response:
{
    "data": {
        "COUNT": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.1.4.9 Interface for Querying the Number of Snapshots

Function

This interface is used to query the number of snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, PARENTID and RUNNINGSTATUS are supported.
RSSType	Optional	enum	Type of the snapshot that supports value-added features. **The value is described as follows:** 22: LUN that supports snapshots 33: target object that can be used for snapshot rollback 38: LUN that can function as the source object of a HyperCopy pair
RSSAssociateObjID		string	Value-added associated object ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjType	Optional	enum	Associated object type. **The value is described as follows:** 21: host 230: SmartQoS policy 256: LUN group 245: mapping view 57646: snapshot consistency group **Note:**associateObjID and associateObjType must be delivered at the same time.
associateObjID	Conditional	string	Associated object ID. **The value is described as follows:** If "associateObjType" is set to the SmartQoS policy and "associateObjID" is set to "4294967295", snapshots not associated with the SmartQoS policy are queried. **Note:**associateObjID and associateObjType must be delivered at the same time.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried snapshots.

Example

- Querying the number of snapshots.

  Request: GET /deviceManager/rest/1016964156/SNAPSHOT/count

  Response:

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```
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.4.10 Interface for Querying the Snapshot Difference Between a Protection Group and a Snapshot Consistency Group

Function

This interface is used to query the snapshot difference between a protection group and a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/get_diff_snapshot

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.
snapCgId	Mandatory	uint32	Snapshot consistency group ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID.
name	Mandatory	string	Snapshot name.
healthStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected

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Parameter	Mandatory/ Conditional	Type	Description
runningStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 45: Unactivated 53: Initializing 106: Deleting
capacity	Mandatory	string(uint64)	Snapshot user capacity.
source_lun_name	Mandatory	string	Name of the source LUN.
wwn	Mandatory	string	WWN.
source_lun_id	Mandatory	string	ID of the source LUN.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot

Example

- Querying the snapshot difference between a protection group and a snapshot consistency group.

```
Request: GET /api/v2/get_diff_snapshot?pgId=0&snapCgId=0
Response:
{
   "data": [
      {
         "ID": "38",
         "name": "SnapCG0005",
         "healthStatus": "1",
         "runningStatus": "43",
         "capacity": "209715200",
         "wwn": "60208341004661030000436c800000026",
         "source_lun_id": "4",
         "source_lun_name": "2220000",
         "TYPE": 27
      },
      {
         "ID": "39",
         "name": "SnapCG0006",
         "healthStatus": "1",
         "runningStatus": "43",
         "capacity": "209715200",
         "wwn": "60208341004661030004370e00000027",
         "source_lun_id": "5",
```

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```
            "source_lun_name": "2220001",
            "TYPE": 27
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.1.4.11 Interface for Querying the Snapshot Quantity Difference Between a Protection Group and a Snapshot Consistency Group

Function

This interface is used to query the snapshot quantity difference between a protection group and a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/get_diff_snapshot/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.
snapCgId	Mandatory	uint32	Snapshot consistency group ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried snapshots.

Example

- Querying the snapshot quantity difference between a protection group and a snapshot consistency group.


```
Request: GET /api/v2/get_diff_snapshot/count?pgId=0&snapCgId=0
Response:
{
    "data": {
        "COUNT": "1"
```


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```
    },
    "error": {
        "code": 0,
        "description": ""
    }
}
```

2.9.1.5 Others

2.9.1.5.1 Interface for Activating a Snapshot Consistency Group

Function

This interface is used to activate a snapshot consistency group.

HighRisk

You are about to activate snapshot consistency group ({0}).

Suggestion: Before performing this operation, ensure that the storage pool capacity is sufficient.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_consistency_group/activate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a snapshot consistency group. **The value is described as follows:** The value is an integer from 0 to 8191.
SOURCECDPCGID	Optional	string	ID of the source HyperCDP consistency group. **The value is described as follows:** The value is an integer from 0 to 99999. **Length:**128

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Activating a snapshot consistency group.

```
Request: POST /deviceManager/rest/210235843710E7000007/snapshot_consistency_group/activate
{
    "SOURCECDPCGID": "0",
    "ID": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.5.2 Interface for Activating a Snapshot Using a HyperCDP Object

Function

This interface is used to activate a snapshot using a HyperCDP object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT/activate_cdp

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID. **The value is described as follows:** The value is an integer from 0 to 16383.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CDPID	Mandatory	string	ID of a HyperCDP object. **The value is described as follows:** The value is an integer from 0 to 1999999.
vstoreId	Optional	uint32	vStore ID.

Result

N/A

Example

- Activating a snapshot using a HyperCDP object.

```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot/activate_cdp
{
  "CDPID":"1",
  "ID":"11"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.5.3 Interface for Activating Snapshots

Function

This interface is used to activate snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/activate

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SNAPSHOTLIST	Mandatory	array	Snapshot ID list. **The value is described as follows:** -- **Note:** List of snapshots to be batch activated. A maximum of 2048 snapshot IDs are allowed. If you want to activate a snapshot, deliver the ID of the snapshot, for example, [ID1]. If you want to activate multiple snapshots consistently, deliver the IDs of the snapshots in the format of [ID1,ID2,ID3,...].
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Activating snapshots.

```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot/activate
{
   "SNAPSHOTLIST": [8,9]
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.1.5.4 Interface for Activating VVOL Snapshots

Function

This interface is used to activate snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/activate_vvol

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SNAPSHOTLIST	Mandatory	array	IDs of snapshots. **The value is described as follows:** -- **Note:** List of snapshots to be batch activated. A maximum of 2048 snapshot IDs are allowed. If you want to activate a snapshot, deliver the ID of the snapshot, for example, [ID1]. If you want to activate multiple snapshots consistently, deliver the IDs of the snapshots in the format of [ID1,ID2,ID3,...].
SUBTYPE	Mandatory	uint32	Snapshot subtype. **The value is described as follows:** 1: VVol snapshot. **Range:**1

Result

N/A

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Example

- Activating VVol snapshots.

```
Request: POST /deviceManager/rest/210235843910E6000009/snapshot/activate_vvol
{
    "SNAPSHOTLIST": [6],
    "SUBTYPE":1
}

Response:
{
  "data": {},
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.9.1.5.5 Interface for Canceling Rollback a Snapshot

Function

This interface is used to cancel snapshot rollback.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/cancelrollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
vstoreId	Optional	uint32	vStore ID.

Result

N/A

Example

- Canceling snapshot rollback.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/cancelrollback
{
    "ID": "1"
}

Response:
{
    "data": {},
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.9.1.5.6 Interface for Canceling the Rollback of a Snapshot Consistency Group

Function

This interface is used to cancel the rollback of a snapshot consistency group.

HighRisk

You are about to stop rolling back snapshot data in snapshot consistency group ({0}) to LUNs in protection group ({1}). The snapshot consistency group is activated at ({2}). This operation will cause data on LUNs in the protection group to be unavailable.

Suggestion: Before performing this operation, ensure that data on LUNs in the protection group is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/cancelrollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot consistency group ID. **The value is described as follows:** 0~8191.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Canceling the rollback of a snapshot consistency group.

```
Request: PUT /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP/cancelrollback
{
```

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```
    "ID": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.5.7 Interface for Deactivating a Snapshot Consistency Group

Function

This interface is used to deactivate a snapshot consistency group.

HighRisk

You are about to deactivate snapshot consistency group ({0}).

This operation will delete the snapshot data.

Suggestion: Before performing this operation, ensure that the snapshot consistency group is correctly selected and the snapshots does not contain the data to be used.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_consistency_group/deactive

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a snapshot consistency group. **The value is described as follows:** The value is an integer from 0 to 8191.
vstoreId	Optional	string	vStore ID.

Result

N/A

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Example

- Deactivating a snapshot consistency group.

```
Request: POST /deviceManager/rest/210235843710E7000007/snapshot_consistency_group/deactive
{
   "ID": "0"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.5.8 Interface for Deactivating Snapshots

Function

This interface is used to deactivate a snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/stop

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
isMergedCmd	Optional	uint32	Whether to check the parameter validity of activation or deletion commands. **The value is described as follows:** 0..1 **Note:** 0:Not check the parameter validity of activation or deletion commands; 1:Check the parameter validity of activation or deletion commands.
vstoreId	Optional	string	vStore ID.

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Result

N/A

Example

- Deactivating a snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/stop
{
   "ID": "1",
   "isMergedCmd": "1"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.5.9 Interface for Expanding a Snapshot

Function

Expand snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/expand

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
USERCAPACITY	Mandatory	uint64	User capacity.

Result

N/A

Example

- Expanding a snapshot.

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```
Request: PUT /deviceManager/rest/210235843710E7000007/snapshot/expand
{
   "USERCAPACITY": 10485760,
   "ID": "2"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.1.5.10 Interface for Reactivating a Snapshot Consistency Group

Function

This interface is used to reactivate a snapshot consistency group.

HighRisk

You are about to reactivate snapshot consistency group ({0}), which is an irreversible operation. This operation will overwrite the data protected by the snapshot in the snapshot consistency group.

Suggestion: Before performing this operation, ensure that the selected snapshot consistency group is correct and you do not need the data protected by the snapshot in the snapshot consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_consistency_group/restore

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a snapshot consistency group. **The value is described as follows:** The value is an integer from 0 to 8191.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SOURCECDPCGID	Optional	string	ID of a HyperCDP consistency group. **The value is described as follows:** The value is an integer from 0 to 99999. **Length:**128
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of a snapshot consistency group. **The value is described as follows:** The value is an integer from 0 to 8191.
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** The value is an integer from 0 to 8191.
PARENTNAME	Mandatory	string	Name of the parent object. **The value is described as follows:** The value contains 1 to 255 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).

Example

- Reactivating a snapshot consistency group.

```
Request: POST /deviceManager/rest/210235843710E7000007/snapshot_consistency_group/restore
{
   "SOURCECDPCGID": "0",
```

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```
    "ID": "1"
}

Response: {
    data{
        "ID": "1",
        "PARENTID": "1",
        "PARENTNAME": "LunCG001"
    },
    error: {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.5.11 Interface for Reactivating Snapshots

Function

This interface is used to reactivate snapshots.

HighRisk

You are about to reactivate snapshot ({0}). This operation will delete existing snapshot data and protect source LUN data at the current point in time. When multiple snapshots are reactivated, the default activation points in time are different. Suggestion: Before performing this operation, ensure that the selected snapshot is no longer necessary or has been backed up.
You are about to reactivate snapshot ({0}) by using a HyperCDP object. This operation deletes existing snapshot data and protects the data at the point in time when the HyperCDP object is activated. Suggestion: Before performing this operation, ensure that the selected snapshot and HyperCDP object are correct and the data of the selected snapshot is no longer necessary or has been backed up.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/reactive

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID. **The value is described as follows:** The value is an integer from 0 to 65535.
CDPID	Optional	uint32	HyperCDP object ID. **The value is described as follows:** The value is an integer from 0 to 1999999.

Result

N/A

Example

- Reactivating snapshots.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/reactive
{
    "ID": "1",
    "CDPID": "4"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.5.12 Interface for Rolling Back a Snapshot

Function

This interface is used to roll back a snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/rollback

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
ROLLBACKSPEED	Optional	enum	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
ROLLBACKTARGETOBJID	Optional	string	Rollback object ID. **Note:**The default rollback object is a parent snapshot. If there is no parent snapshot, the rollback object is the source LUN.
SUBTYPE	Optional	uint32	Snapshot subtype. **The value is described as follows:** 0: common snapshot. 1: VVol snapshot. **Default:**0: common snapshot **Note:**This parameter is mandatory for a VVol snapshot.
vstoreID	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 27: snapshot

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 11: LUN 27: snapshot
PARENTID	Mandatory	string	ID of the parent object.
PARENTNAME	Mandatory	string	Name of the parent object.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 45: Inactive 53: Initializing 106: Deleting
SUBTYPE	Mandatory	string(uint32)	Subtype. **The value is described as follows:** 0: common LUN snapshot 1: VVol snapshot
TIMESTAMP	Mandatory	string(uint64)	Snapshot point in time. The local time is returned by default.

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Parameter	Mandatory/ Conditional	Type	Description
ROLLBACKRATE	Mandatory	string(uint32_t)	Rollback progress. **The value is described as follows:** 0 to 100.
ROLLBACKSTARTTIME	Mandatory	string(uint64)	Time when the rollback starts. The local time is returned by default.
ROLLBACKENDTIME	Mandatory	string(uint64)	Time when the rollback ends. The local time is returned by default.
CONSUMEDCAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots, expressed in sectors.
IOPRIORITY	Mandatory	string(enum)	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
WWN	Mandatory	string	WWN.
ROLLBACKSPEED	Mandatory	string(enum)	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"-1" indicates an invalid value.
USERCAPACITY	Mandatory	string(uint64)	Snapshot user capacity, expressed in sectors.
replicationCapacity	Mandatory	string(uint64)	Capacity protected by snapshots, expressed in sectors.

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Parameter	Mandatory/ Conditional	Type	Description
CASCADEDLEVEL	Mandatory	string(uint32)	Cascaded level. **The value is described as follows:** 0 to 7.
SOURCELUNID	Mandatory	string	ID of the source LUN.
SOURCELUNNAME	Mandatory	string	Name of the source LUN.
ROLLBACKTARGETOB-JID	Mandatory	string	Rollback object ID. **Note:**"4294967295" indicates an invalid value.
ROLLBACKTARGETOBJNAME	Mandatory	string	Rollback object name.
ISSCHEDULEDSNAP	Mandatory	string(enum)	Whether the snapshot is a timing snapshot. **The value is described as follows:** 0: no 1: yes
snapCgId	Mandatory	string	ID of the snapshot consistency group. **The value is described as follows:** 1 to 4096.
isReadOnly	Mandatory	uint32	Snapshot read/write type. **The value is described as follows:** 0: writable snapshot. 1: read-only snapshot.
NGUID	Mandatory	string	Globally unique identifier (GUID) of a namespace. **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.

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Parameter	Mandatory/ Conditional	Type	Description
coupleUuid	Mandatory	string	Snapshot UUID **The value is described as follows:** The value is a hexadecimal number represented by digits from 0 to 9 and letters from a to f.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory		vStore name.

Example

- Roll back the snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/rollback
{
   "ID": "1",
   "ROLLBACKTARGETOBJID": "1",
   "ROLLBACKSPEED": "2"
}

Response: {
   "data": {
      "CASCADEDLEVEL": "0",
      "CONSUMEDCAPACITY": "0",
      "HEALTHSTATUS": "1",
      "ID": "44",
      "IOPRIORITY": "1",
      "ISSCHEDULEDSNAP": "0",
      "NAME": "snap_wf",
      "NGUID": "7100015ca6001d0b5ce8832600000005",
      "PARENTID": "8",
      "PARENTNAME": "lun_wf0000",
      "PARENTTYPE": "11",
      "ROLLBACKENDTIME": "-1",
      "ROLLBACKRATE": "0",
      "ROLLBACKSPEED": "2",
      "ROLLBACKSTARTTIME": "1567792085",
      "ROLLBACKTARGETOBJID": "8",
      "ROLLBACKTARGETOBJNAME": "lun_wf0000",
      "RUNNINGSTATUS": "44",
      "SOURCELUNID": "8",
      "SOURCELUNNAME": "lun_wf0000",
      "SUBTYPE": "0",
      "TIMESTAMP": "1567786283",
      "TYPE": 27,
      "USERCAPACITY": "409600",
      "WWN": "654899810075cd6e015eced50000002c",
      "isReadOnly": "0",
      "replicationCapacity": "0",
      "snapCgId": "4294967295",
      "coupleUuid": "00100DFFBF6000062100D30203040506",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
```

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```
        "description": "0"
    }
}
```

- Rolling back a VVol snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/snapshot/rollback
{
    "ID":6,
    "SUBTYPE":1
}

Response:
{
  "data": {
    "CASCADEDLEVEL": "0",
    "CONSUMEDCAPACITY": "0",
    "HEALTHSTATUS": "1",
    "ID": "6",
    "IOPRIORITY": "1",
    "ISSCHEDULEDSNAP": "0",
    "NAME": "lun_vvol_65_snap",
    "NGUID": "7100015ca6001d0b5ce8832600000005",
    "PARENTID": "5",
    "PARENTNAME": "LUNvvol_fcr_test1",
    "PARENTTYPE": 11,
    "ROLLBACKENDTIME": "-1",
    "ROLLBACKRATE": "0",
    "ROLLBACKSPEED": "2",
    "ROLLBACKSTARTTIME": "1579369647",
    "ROLLBACKTARGETOBJID": "5",
    "ROLLBACKTARGETOBJNAME": "LUNvvol_fcr_test1",
    "RUNNINGSTATUS": "44",
    "SOURCELUNID": "5",
    "SOURCELUNNAME": "LUNvvol_fcr_test1",
    "SUBTYPE": "1",
    "TIMESTAMP": "1579364820",
    "TYPE": 27,
    "USERCAPACITY": "2097152",
    "WWN": "674a063100f95e3800451d3c00000006",
    "isReadOnly": "1",
    "replicationCapacity": "0",
    "snapCgId": "4294967295",
    "coupleUuid": "00100DFFBF6000062100D30203040506",
    "vstoreId":"0",
    "vstoreName":"System_vStore"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.9.1.5.13 Interface for Rolling Back a Snapshot Consistency Group

Function

This interface is used to roll back a snapshot consistency group.

HighRisk

You are about to roll back data using the snapshot consistency group. This operation will use snapshot data in snapshot consistency group ({0}) to overwrite data on LUNs in protection group ({1}). The snapshot consistency group is activated at ({2}). This operation may cause heavy service load and decrease the read/write performance of the host. Before performing this operation, ensure that

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LUNs in the protection group are not read or written by the host, no data is stored in the host cache, and snapshots in the snapshot consistency group are not written by the host.

Suggestion:

1. Before performing this operation, back up data of the protection group.

2. Ensure that the free capacity of the storage pool is greater than the actual capacity occupied by LUNs in the protection group.

3. Select the medium speed. If you select the high or highest speed, perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_CONSISTENCY_GROUP/rollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot consistency group ID. **The value is described as follows:** 0~8191.
RESTORESPEED	Optional	string	Rollback speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Rolling back a snapshot consistency group.

  ```
  Request: PUT /deviceManager/rest/20140729a5s4d54s4w12/SNAPSHOT_CONSISTENCY_GROUP/rollback
  ```

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```
{
    "TYPE": 57646,
    "ID": "36",
    "RESTORESPEED": "1"
}
Response:
{
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.1.5.14 (Not Recommended) Interface for Expanding a Snapshot

Function

Expand a snapshot (you are advised to use Interface for Expanding a LUN instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot/expand

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
USERCAPACITY	Mandatory	uint64	User capacity.

Result

N/A

Example

- Expanding a snapshot.

```
Request: PUT /deviceManager/rest/210235843710E7000007/snapshot/expand
{
    "USERCAPACITY": 10485760,
    "ID": "2"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.2 remote_replication

2.9.2.1 Add

2.9.2.1.1 Interface for Batch Creating Remote Replication Pairs

Function

This interface is used to batch create remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESTYPE	Optional	enum	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system **Default:**11: LUN
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZETYPE	Optional	enum	Synchronization type. **The value is described as follows:** 1: manual. 2: timed wait after synchronization begins. 3: timed wait after synchronization ends. 4: specific time policy. **Default:**1: manual **Note:**This parameter is valid for asynchronous replication only.
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGVAL	Optional	uint32	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. Note: The synchronization type must be timed wait. **The value is described as follows:** If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Default:**3600 **Note:**This field can be delivered when the synchronization type is timed wait.
ISSTANDBY	Optional	bool	Whether a standby asynchronous remote replication pair is created. **The value is described as follows:** false: no true: yes **Default:**false: no
ISDATASYNC	Optional	bool	Whether data on the primary and secondary ends is consistent. **The value is described as follows:** false: no true: yes **Default:**false: inconsistent

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLECOMPRESS	Optional	bool	Link compression (only asynchronous). **The value is described as follows:** true: enables compression. false: disables compression. **Default:**false: no compression **Note:**This parameter is valid for asynchronous replication only.
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication pair. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**This parameter is valid only when "SYNCHRONIZETYPE" is set to "4". Only one of the three schedules can be configured.

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Parameter	Mandatory/Optional/Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled. **Note:**This field is delivered only when the I/O timeout threshold for remote resources needs to be set in remote replication synchronization mode.
rmType	Optional	enum	Remote replication type. **The value is described as follows:** 0: common remote replication **Default:**0: common remote replication
VSTOREPAIRID	Conditional	string	Remote replication vStore pair ID. **Note:**This field must be delivered when you create a remote replication pair using a remote replication vStore pair.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PAIRTYPE	Optional	enum	Replication type. **The value is described as follows:** 0: remote replication 1: local replication **Default:**0: remote replication
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** 1 to 1024.
REPLICATIONMODEL	Optional	string	Replication mode. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication **Default:**2: asynchronous remote replication

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Parameter	Mandatory/Optional/Conditional	Type	Description
syncSnapPolicy	Optional	enum	User snapshot synchronization policy. **The value is described as follows:** 0: User snapshots are not synchronized. 1: Snapshots on the secondary storage system are the same as those on the primary storage system. 2: A specified number of user snapshots are retained on the secondary storage system. 3: User snapshots that match the configured tags are synchronized to the secondary storage system. **Default:**0: User snapshots are not synchronized.
userSnapRetention-Num		uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512

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Parameter	Mandatory/Optional/Conditional	Type	Description
backupCopyPolicy	Optional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0: Copy snapshots are not retained on the secondary storage system. 1: A specified number of copy snapshots are retained on the secondary storage system. **Default:**0: Copy snapshots are not retained on the secondary storage system.
copySnapRetention-Num		uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512
initialSyncType	Optional	enum	Initial synchronization type of readable and writable snapshot LUNs. **The value is described as follows:** 1: All data is synchronized. 2: Only the data written to the snapshot is synchronized. **Default:**1: All data is synchronized.

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Parameter	Mandatory/Optional/Conditional	Type	Description
resourceSubtype	Optional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN **Default:**0: common LUN
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Length:**1-512 **Note:**LUN remote replication does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapTagListRetention-Num	Conditional		List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Length:**1-64 **Note:**LUN remote replication does not support this parameter.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
ID	Mandatory	string	Remote replication pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty 14: invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal 23: synchronizing 33: to be recovered 34: interrupted 26: split 35: invalid 110: standby
ISPRIMARY	Mandatory	string(bool)	Whether the local end is a primary end. **The value is described as follows:** true: yes false: no
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESNAME	Mandatory	string	Name of the local resource.
LOCALRESTYPE	Mandatory	string(enum)	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
REMOTERESNAME	Mandatory	string	Name of the remote resource.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEDEVICENAME	Mandatory	string	Name of the remote device.
REMOTEDEVICESN	Mandatory	string	Serial number of the remote device.
SYNCHRONIZETYPE	Mandatory	string(enum)	Synchronization type. **The value is described as follows:** 1: manual. 2: timed wait after synchronization begins. 3: timed wait after synchronization ends. 4: specific time policy.
CAPACITY	Mandatory	string(uint64)	Capacity of the primary resource.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONPROGRESS	Conditional	string(uint32)	Progress. **Note:**This field is returned when the remote replication pair's running status is Synchronizing or Normal.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
TIMINGVAL	Conditional	string(uint32)	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field is returned when the synchronization type is timed wait.
ISROLLBACK	Mandatory	string(bool)	Whether the secondary resources are rolling back. **The value is described as follows:** true: yes false: no
SECRESDATASTATUS	Mandatory	string(enum)	Data status of the secondary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous replication 2: asynchronous replication
PRIRESDATASTATUS	Mandatory	string(enum)	Data status of the primary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete

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Parameter	Mandatory/ Conditional	Type	Description
SECRESACCESS	Mandatory	string(enum)	Read/Write setting for a secondary resource, used to set write protection for the secondary resource. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
ISINCG	Mandatory	string(bool)	Whether a remote replication pair is in a consistency group. **The value is described as follows:** true: yes false: no
CGID	Conditional	string	Consistency group ID. **Note:**This field is returned after a pair is added to a consistency group.
CGNAME	Conditional	string	Consistency group name. **Note:**This field is returned after a pair is added to a consistency group.
ISDATASYNC	Mandatory	string(bool)	Whether data on the primary and secondary ends is consistent. **The value is described as follows:** true: consistent false: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enabled. false: disabled. **Note:**This field is valid for asynchronous replication only.
VSTOREPAIRID	Mandatory	string	Remote replication vStore pair ID. **Note:**"----" indicates an invalid value.
SYNCHRONIZESCHED-ULE	Conditional	string(json)	Schedule for starting the synchronization of an asynchronous remote replication pair. **Note:** Delivery by day: "{\"DAY\":\"01:00\"}". Delivery by hour: "{\"HOUR\":\"9\"}".
COMPRESSVALID	Conditional	string(bool)	Whether compression has taken effect. **The value is described as follows:** true: yes false: no **Note:**This field is returned for asynchronous replication.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned for asynchronous replication when the remote replication pair has been synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous replication.
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" indicates an invalid value. This field is returned for LUN remote replication.
PAIRTYPE	Mandatory	string(enum)	Replication type. **The value is described as follows:** 0: remote replication 1: local replication
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
rmType	Mandatory	string(enum)	Remote replication type. **The value is described as follows:** 0: common remote replication
DRRINGID	Conditional	string	DR Star trio ID.

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Parameter	Mandatory/ Conditional	Type	Description
bandwidth	Mandatory	uint64_t	Bandwidth. **The value is described as follows:** 1 to 1024. **Note:**"-1" indicates an invalid value.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** vStore name. **Note:**This field must be returned in multi-vStore scenarios.
syncSnapPolicy	Conditional	enum	User snapshot synchronization policy. **The value is described as follows:** 0: User snapshots are not synchronized. 1: Snapshots on the secondary storage system are the same as those on the primary storage system. 2: A specified number of user snapshots are retained on the secondary storage system. 3: User snapshots that match the configured tags are synchronized to the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512
backupCopyPolicy	Conditional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0: Copy snapshots are not retained on the secondary storage system. 1: A specified number of copy snapshots are retained on the secondary storage system.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512
initialSyncType	Conditional	enum	Initial synchronization type of readable and writable snapshot LUNs. **The value is described as follows:** 1: All data is synchronized. 2: Only the data written to the snapshot is synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
resourceSubtype	Mandatory	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

Example

- Creating remote replication pairs in batches.

```
Request: POST/deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/batch
[
  {
    "REPLICATIONMODEL": "2",
    "RECOVERYPOLICY": "1",
    "SPEED": "2",
    "ISDATASYNC": false,
    "SYNCHRONIZETYPE": "1",
    "ENABLECOMPRESS": false,
    "LOCALRESID": "34",
    "REMOTEDEVICEID": "0",
    "REMOTERESID": "198",
    "rmType": "0"
  },
  {
    "REPLICATIONMODEL": "2",
```

```
        "RECOVERYPOLICY": "1",
        "SPEED": "2",
        "ISDATASYNC": false,
        "SYNCHRONIZETYPE": "1",
        "ENABLECOMPRESS": false,
        "LOCALRESID": "31",
        "REMOTEDEVICEID": "0",
        "REMOTERESID": "191",
        "rmType": "0"
    },
]

Response: {
    "data": [{
        "CAPACITY": "1048576",
        "COMPRESSVALID": "false",
        "ENABLECOMPRESS": "false",
        "HEALTHSTATUS": "1",
        "ID": "4846fb8ca15c0004",
        "ISDATASYNC": "false",
        "ISINCG": "false",
        "ISPRIMARY": "true",
        "ISROLLBACK": "false",
        "LOCALRESID": "34",
        "LOCALRESNAME": "test0009",
        "LOCALRESTYPE": "11",
        "PRIRESDATASTATUS": "2",
        "RECOVERYPOLICY": "1",
        "REMOTEDEVICEID": "0",
        "REMOTEDEVICENAME": "STORAGE-DEVICE45",
        "REMOTEDEVICESN": "5345A4C89612455DA54B",
        "REMOTERESID": "198",
        "REMOTERESNAME": "--",
        "REPLICATIONMODEL": "2",
        "REPLICATIONPROGRESS": "0",
        "RUNNINGSTATUS": "26",
        "SECRESACCESS": "2",
        "SECRESDATASTATUS": "5",
        "SPEED": "2",
        "SYNCHRONIZETYPE": "1",
        "SYNCLEFTTIME": "-1",
        "TIMEDIFFERENCE": "-1",
        "REMTIMEOUTPERIOD": "255",
        "TYPE": 263,
        "rmType": "0",
        "PAIRTYPE": "0",
        "VSTOREPAIRID": "----",
        "REMOTEVSTOREID": "0",
        "DRRINGID": "4846fb8ca15c0002",
        "bandwidth": "-1",
        "initialSyncType": "1",
        "syncSnapPolicy": "0",
        "userSnapRetentionNum": "--",
        "backupCopyPolicy": "0",
        "copySnapRetentionNum": "--",
        "resourceSubtype": "0",
        "snapTagList": "--",
        "snapTagListRetentionNum": "--",
        "error": {
            "code": 0,
            "description": "0"
        }
    },{
        "CAPACITY": "1048576",
        "COMPRESSVALID": "false",
        "ENABLECOMPRESS": "false",
        "HEALTHSTATUS": "1",
        "ID": "4846fb8ca15c0004",
        "ISDATASYNC": "false",
```

```
        "ISINCG": "false",
        "ISPRIMARY": "true",
        "ISROLLBACK": "false",
        "LOCALRESID": "34",
        "LOCALRESNAME": "test0009",
        "LOCALRESTYPE": "11",
        "PRIRESDATASTATUS": "2",
        "RECOVERYPOLICY": "1",
        "REMOTEDEVICEID": "0",
        "REMOTEDEVICENAME": "STORAGE-DEVICE45",
        "REMOTEDEVICESN": "5345A4C89612455DA54B",
        "REMOTERESID": "198",
        "REMOTERESNAME": "--",
        "REPLICATIONMODEL": "2",
        "REPLICATIONPROGRESS": "0",
        "RUNNINGSTATUS": "26",
        "SECRESACCESS": "2",
        "SECRESDATASTATUS": "5",
        "SPEED": "2",
        "SYNCHRONIZETYPE": "1",
        "SYNCLEFTTIME": "-1",
        "TIMEDIFFERENCE": "-1",
        "REMTIMEOUTPERIOD": "255",
        "TYPE": 263,
        "rmType": "0",
        "PAIRTYPE": "0",
        "VSTOREPAIRID": "----",
        "REMOTEVSTOREID": "0",
        "DRRINGID": "4846fb8ca15c0003",
        "bandwidth": "-1",
        "initialSyncType": "1",
        "syncSnapPolicy": "0",
        "userSnapRetentionNum": "--",
        "backupCopyPolicy": "0",
        "copySnapRetentionNum": "--",
        "resourceSubtype": "0",
        "snapTagList": "--",
        "snapTagListRetentionNum": "--",
        "error": {
            "code": 0,
            "description": "0"
        }
    }
]
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.2.1.2 Interface for Creating a Remote Replication Pair

Function

This interface is used to create a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESTYPE	Optional	enum	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system **Default:**11: LUN
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
SYNCHRONIZETYPE	Optional	enum	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Default:**1: manual **Note:**This parameter is valid for asynchronous replication only.
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
TIMINGVAL	Optional	uint32	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. Note: The synchronization type must be timed wait. **The value is described as follows:** If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Default:**3600 **Note:**This field can be delivered when the synchronization type is timed wait.
ISSTANDBY	Optional	bool	Whether a standby asynchronous remote replication pair is created. **The value is described as follows:** false: no true: yes **Default:**false: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISDATASYNC	Optional	bool	Indicates whether data on the primary and secondary ends are consistent. **The value is described as follows:** false: no true: yes **Default:**false: no
ENABLECOMPRESS	Optional	bool	Link compression (for asynchronous remote replication only). **The value is described as follows:** true: enables compression. false: disables compression. **Default:**false: disables compression. **Note:**This parameter is valid for asynchronous replication only.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication pair. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**Only when "SYNCHRONIZETYPE" is set to "4", this parameter is valid. Only one of the three schedules can be configured.

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Parameter	Mandatory/Optional/Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled. **Note:**This field must be delivered when the I/O timeout threshold is to be set for synchronous remote replication.
rmType	Optional	enum	Type of the remote replication. **The value is described as follows:** 0: common remote replication **Default:**0: common remote replication
VSTOREPAIRID	Conditional	string	Remote replication vStore pair ID. **Note:**This field must be delivered when you create the remote replication pair using the remote replication vStore pair.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PAIRTYPE	Optional	enum	Replication type. **The value is described as follows:** 0: remote replication 1: local replication **Default:**0: remote replication
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** 1 to 1024.
REPLICATIONMODEL	Optional	string	Replication mode. **The value is described as follows:** 1: synchronous replication 2: asynchronous replication **Default:**2: asynchronous replication

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Parameter	Mandatory/Optional/Conditional	Type	Description
syncSnapPolicy	Optional	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system. **Default:**0:"NOT_SYNC_SNAP": User snapshots are not synchronized.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512 **Note:**None.

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Parameter	Mandatory/Optional/Conditional	Type	Description
backupCopyPolicy	Optional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Default:**0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. **Note:**LUN remote replication does not support this parameter.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512 **Note:**LUN remote replication does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
initialSyncType	Optional	enum	Initial synchronization type of readable and writable snapshot LUNs. **The value is described as follows:** 1: All data is synchronized. 2: Only the data written to the snapshot is synchronized. **Default:**1: All data is synchronized.
resourceSubtype	Optional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN **Default:**0: common LUN
CGID	Optional	string	ID of the owning consistency group.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapTagList		string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Length:**1-512 **Note:**LUN remote replication does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapTagListRetention-Num		string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Length:**1-64 **Note:**LUN remote replication does not support this parameter.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
ID	Mandatory	string	Remote replication pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby
ISPRIMARY	Mandatory	string(bool)	Indicates whether the local end is a primary end. **The value is described as follows:** true: yes false: no
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESNAME	Mandatory	string	Name of the local resource.
LOCALRESTYPE	Mandatory	string(enum)	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
REMOTERESNAME	Mandatory	string	Name of the remote resource.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEDEVICENAME	Mandatory	string	Name of the remote device.
REMOTEDEVICESN	Mandatory	string	Serial number of the remote device.
SYNCHRONIZETYPE	Conditional	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is returned when the replication mode is asynchronous.
CAPACITY	Mandatory	string(uint64)	Capacity of the primary resource.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONPROGRESS	Conditional	string(uint32)	Progress. **Note:**This field is returned if the remote replication pair's running status is Synchronizing or Normal.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
TIMINGVAL	Conditional	string(uint32)	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be returned when the synchronization type is timed wait.
ISROLLBACK	Mandatory	string(bool)	Indicates whether the secondary resources are rolling back. **The value is described as follows:** true: yes false: no
SECRESDATASTATUS	Mandatory	string(enum)	Data status of the secondary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication
PRIRESDATASTATUS	Mandatory	string(enum)	Data status of the primary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete

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Parameter	Mandatory/ Conditional	Type	Description
SECRESACCESS	Mandatory	string(enum)	Read/Write setting for a secondary resource, used to set write protection for the secondary resource. **The value is described as follows:** 1: access denied 2: read-only 3: read/write
ISINCG	Mandatory	string(bool)	Indicates whether a remote replication pair is in a consistency group. **The value is described as follows:** true: yes false: no
CGID	Conditional	string	Consistency group ID. **Note:**This field is returned after a pair is added to a consistency group.
CGNAME	Conditional	string	Consistency group name. **Note:**This field is returned after a pair is added to a consistency group.
ISDATASYNC	Mandatory	string(bool)	Indicates whether data on the primary and secondary ends are consistent. **The value is described as follows:** true: consistent false: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enabled. false: disabled. **Note:**This field is valid for asynchronous remote replication only.
VSTOREPAIRID	Mandatory	string	Remote replication vStore pair ID. **Note:**"----" indicates an invalid value.
SYNCHRONIZESCHED-ULE	Conditional	string(json)	Schedule for starting the synchronization of an asynchronous remote replication pair. **Note:** Delivery by day: "{\"DAY\":\"01:00\"}". Delivery by hour: "{\"HOUR\":\"9\"}".
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned for asynchronous remote replication and the remote replication pair has been synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous remote replication.
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" indicates an invalid value. This field is returned for LUN replication.
PAIRTYPE	Mandatory	string(enum)	Replication type. **The value is described as follows:** 0: remote replication 1: local replication
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
rmType	Mandatory	string(enum)	Type of remote replication. **The value is described as follows:** 0: common remote replication
DRRINGID	Mandatory	string	ID of the DR Star trio.

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Parameter	Mandatory/ Conditional	Type	Description
bandwidth	Mandatory	uint64_t	Bandwidth. **The value is described as follows:** 1 to 1024. **Note:**"-1" indicates an invalid value.
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** vStore ID. **Note:**"--" is an invalid value.
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** vStore name. **Note:**-- is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when the user snapshot synchronization policy is that a specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
backupCopyPolicy	Mandatory	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**LUN remote replication does not support this parameter.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when a specified number of copy snapshots are retained on the secondary storage system. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
initialSyncType	Conditional	enum	Initial synchronization type of readable and writable snapshot LUNs. **The value is described as follows:** 1: All data is synchronized. 2: Only the data written to the snapshot is synchronized.
resourceSubtype	Mandatory	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
switchToAsync	Mandatory	string(enum)	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close

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Parameter	Mandatory/ Conditional	Type	Description
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

Example

- Creating a remote replication pair.

```
Request: POST/deviceManager/rest/210235843910E6000009/REPLICATIONPAIR{
   "REPLICATIONMODEL": "2",
   "RECOVERYPOLICY": "1",
   "SPEED": "2",
   "ISDATASYNC": false,
   "SYNCHRONIZETYPE": "1",
   "ENABLECOMPRESS": false,
   "LOCALRESID": "34",
   "REMOTEDEVICEID": "0",
   "REMOTERESID": "198",
   "rmType": "0"
}Response: {
   "data": {
      "CAPACITY": "1048576",
      "COMPRESSVALID": "false",
      "ENABLECOMPRESS": "false",
```

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```
        "HEALTHSTATUS": "1",
        "ID": "4846fb8ca15c0004",
        "ISDATASYNC": "false",
        "ISINCG": "false",
        "ISPRIMARY": "true",
        "ISROLLBACK": "false",
        "LOCALRESID": "34",
        "LOCALRESNAME": "test0009",
        "LOCALRESTYPE": "11",
        "PRIRESDATASTATUS": "2",
        "RECOVERYPOLICY": "1",
        "REMOTEDEVICEID": "0",
        "REMOTEDEVICENAME": "STORAGE-DEVICE45",
        "REMOTEDEVICESN": "5345A4C89612455DA54B",
        "REMOTERESID": "198",
        "REMOTERESNAME": "--",
        "REPLICATIONMODEL": "2",
        "REPLICATIONPROGRESS": "0",
        "RUNNINGSTATUS": "26",
        "SECRESACCESS": "2",
        "SECRESDATASTATUS": "5",
        "SPEED": "2",
        "SYNCHRONIZETYPE": "1",
        "SYNCLEFTTIME": "-1",
        "TIMEDIFFERENCE": "-1",
        "REMTIMEOUTPERIOD": "255",
        "TYPE": 263,
        "rmType": "0",
        "PAIRTYPE": "0",
        "VSTOREPAIRID": "----",
        "REMOTEVSTOREID": "0",
        "DRRINGID": "4846fb8ca15c0002",
        "bandwidth": "-1",
        "switchToAsync: "0",
        "switchToSync: "0",
        "initialSyncType": "1",
        "syncSnapPolicy": "0",
        "backupCopyPolicy": "0",
        "resourceSubtype": "0",
        "snapTagList": "--",
        "snapTagListRetentionNum": "--"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.2.2 Delete

2.9.2.2.1 Interface for Deleting a Remote Replication Pair

Function

This interface is used to delete a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
ISLOCALDELETE	Optional	bool	Indicates whether a remote replication pair can be locally deleted when the link is disconnected. When this parameter is not delivered, the default value is no, indicating a remote replication pair cannot be locally deleted. **The value is described as follows:** false: no true: yes **Default:**false: no
TOSYNCSRWHENDELETE	Optional	bool	Indicates whether to maintain the consistency of secondary LUNs when a remote replication pair is deleted. The default value is 1. If the default value is adopted and secondary LUNs are inconsistent, the secondary LUNs are forcibly rolled back before the remote replication pair is deleted. **The value is described as follows:** false: no true: yes **Default:**true: yes

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
resourceSubtype	Optional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN

Result

N/A

Example

- Deleting a remote replication pair.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/4846fb8c15c0001?ISLOCALDELETE=false

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.2.3 Modify

2.9.2.3.1 Interface for Changing the Replication Mode of a Remote Replication Pair

Function

This interface is used to change the replication mode of a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/transfer

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Specifies the remote replication pair ID.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
REPLICATIONMODEL	Mandatory	string(enum)	Indicates the remote replication mode. **The value is described as follows:** LUN-based remote replication: 1:"synchronization": indicates synchronous remote replication. 2:"asynchronization": indicates asynchronous remote replication.
SYNCHRONIZETYPE	Conditional	enum	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is mandatory when the remote replication mode is changed to asynchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
synchronizeSchedule	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication pair. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**This parameter is mandatory when the synchronization type is changed to the specific time policy.

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Parameter	Mandatory/Optional/Conditional	Type	Description
timingVal	Conditional	uint32	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **The value is described as follows:** If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be delivered when the synchronization type is changed from manual to timed wait when synchronization begins or timed wait when synchronization ends.

Result

N/A

Example

- Changing the replication mode of remote replication pair "2100ef020304050600000000200000002" to "asynchronization".

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/transfer/
{
    "ID":"2100ef020304050600000000200000002",
    "TYPE":263,
    "REPLICATIONMODEL":"2",
    "SYNCHRONIZETYPE": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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- Changing the replication mode of remote replication pair "2100ef020304050600000000200000003" to "synchronization".

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/transfer/
{
    "ID":"2100ef020304050600000000200000003",
    "TYPE":263,
    "REPLICATIONMODEL":"1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.3.2 Interface for Modifying Remote Replication Pair Information

Function

This interface is used to modify a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID. **Length:**1~32

Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZETYPE	Optional	enum	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is valid for asynchronous remote replication only.
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** 1 to 1024. **Note:**Only one of the bandwidth and SPEED parameters can be selected.
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**Only one of the SPEED and bandwidth parameters can be selected.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGVAL	Conditional	uint32	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. Note: The synchronization type must be timed wait. **The value is described as follows:** If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be delivered when the synchronization type is changed from manual to timed wait when synchronization begins or timed wait when synchronization ends.
ENABLECOMPRESS	Optional	bool	Link compression (for asynchronous remote replication only). **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This parameter is valid for asynchronous remote replication only.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication pair. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**Only when "SYNCHRONIZETYPE" is set to "4", this parameter is valid. Only one of the three schedules can be configured.
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled. **Note:**This field must be delivered when the I/O timeout threshold is to be set for synchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
transferCycle	Conditional	uint32	Duration during which the automatic switchover condition is met when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1 to 1440. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.
asyncToSyncBand-width	Conditional	uint32	Host bandwidth when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 0 to 10485760. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
asyncToSyncLatency	Conditional	uint32	Host latency when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 0 to 5000. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.
syncToAsyncBand-witdh	Conditional	uint32	Host bandwidth when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 0 to 10485760. **Note:**This parameter is mandatory when synchronous remote replication automatically switches to asynchronous remote replication.
syncToAsyncLatency	Conditional	uint32	Host latency when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 0 to 5000. **Note:**This parameter is mandatory when synchronous remote replication automatically switches to asynchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
switchToAsync	Optional	enum	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close
switchToSync	Optional	enum	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close
syncSnapPolicy	Optional	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system.

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Parameter	Mandatory/Optional/Conditional	Type	Description
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is valid only when "syncSnapPolicy" is set to 2.
backupCopyPolicy	Optional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**LUN remote replication does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is valid only when "backupCopyPolicy" is set to 1. LUN remote replication does not support this parameter.
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Length:**1-512 **Note:**LUN remote replication does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Length:**1-64 **Note:**LUN remote replication does not support this parameter.

Result

N/A

Example

- Modifying a remote replication pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/4846fb8ca15c0004
{
   "SYNCHRONIZETYPE": "2",
   "TIMINGVAL": "3600"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.2.4 Query

2.9.2.4.1 Interface for Batch Querying Remote Replication Pair Information

Function

This interface is used to batch query remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
filter	Optional	string	Query criteria. **The value is described as follows:** Fuzzy query of the LOCALRESNAME parameter is supported. The following fields can be queried in exact mode: ID, LOCALRESID, REMOTERESID, LOCALRESTYPE, HEALTHSTATUS, RUNNINGSTATUS, REPLICATIONMODEL, ISPRIMARY, rmType, DRRINGID, ISINCG, resourceSubtype and CGID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
ID	Mandatory	string	Replication replication pair ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby
ISPRIMARY	Mandatory	string(bool)	Indicates whether the local end is a primary end. **The value is described as follows:** true: yes false: no
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESNAME	Mandatory	string	Name of the local resource.
LOCALRESTYPE	Mandatory	string(enum)	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
REMOTERESNAME	Mandatory	string	Name of the remote resource.
REMOTEDEVICENAME	Mandatory	string	Name of the remote device.
REMOTEDEVICESN	Mandatory	string	Serial number of the remote device.

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Parameter	Mandatory/ Conditional	Type	Description
SYNCHRONIZETYPE	Conditional	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is returned when the replication mode is asynchronous.
CAPACITY	Mandatory	string(uint64)	Capacity of the primary resource.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONPROGRESS	Conditional	string(uint32)	Progress. **Note:**This field is returned if the remote replication pair's running status is Synchronizing or Normal.
STARTTIME	Mandatory	string(uint64)	Start time. **Note:**This field is returned if the remote replication pair has been synchronized.
ENDTIME	Conditional	string(uint64)	End time. **Note:**This field is not returned for a remote replication pair that is being synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
TIMINGVAL	Conditional	string(uint32)	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be returned when the synchronization type is timed wait.
ISROLLBACK	Mandatory	string(bool)	Indicates whether the secondary resources are rolling back. **The value is described as follows:** true: yes false: no
SECRESDATASTATUS	Mandatory	string(enum)	Data status of the secondary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous replication 2: asynchronous replication

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Parameter	Mandatory/ Conditional	Type	Description
PRIRESDATASTATUS	Mandatory	string(enum)	Data status of the primary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
SECRESACCESS	Mandatory	string(enum)	Read/Write setting for a secondary resource, used to set write protection for the secondary resource. **The value is described as follows:** 1: access denied 2: read-only 3: read/write
ISINCG	Mandatory	string(bool)	Indicates whether a remote replication pair is in a consistency group. **The value is described as follows:** true: yes false: no
CGID	Conditional	string	Consistency group ID. **Note:**This field is returned after a pair is added to a consistency group.
switchToAsync	Mandatory	string(enum)	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close

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Parameter	Mandatory/ Conditional	Type	Description
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close
CGNAME	Conditional	string	Consistency group name. **Note:**This field is returned after a pair is added to a consistency group.
ISDATASYNC	Mandatory	string(bool)	Indicates whether data on the primary and secondary ends are consistent. **The value is described as follows:** true: consistent false: inconsistent
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enabled false: disabled **Note:**This field is valid for asynchronous replication only.
SYNCHRONIZESCHED-ULE	Conditional	string(json)	Schedule for starting the synchronization of an asynchronous remote replication pair. **Note:** Delivery by day: "{\"DAY\":\"01:00\"}". Delivery by hour: "{\"HOUR\":\"9\"}".

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned for asynchronous remote replication and the remote replication pair has been synchronized.
VSTOREPAIRID	Mandatory	string	Remote replication vStore pair ID. **Note:**"----" indicates an invalid value.
DRRINGID	Mandatory	string	ID of the DR Star trio.

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Parameter	Mandatory/ Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous remote replication.
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" is an invalid value. This field is returned for synchronization in progress.
PAIRTYPE	Mandatory	string(enum)	Replication type. **The value is described as follows:** 0: remote replication 1: local replication
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
rmType	Mandatory	string(enum)	Type of the remote replication. **The value is described as follows:** 0: common remote replication 1: cloud remote replication

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Parameter	Mandatory/ Conditional	Type	Description
bandwidth	Mandatory	uint64_t	Bandwidth. **Note:**"-1" indicates an invalid value. The CMO type is 134.
resourceSubtype	Conditional	string(enum)	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN **Note:**This parameter is returned only for LUN remote replication.
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when a specified number of copy snapshots are retained on the secondary storage system. LUN remote replication does not support this parameter.
backupCopyPolicy	Conditional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**This parameter is valid only for NAS remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
initialSyncType	Mandatory		Initial synchronization type. **The value is described as follows:** 0: Default value when the primary and secondary resources of a remote replication pair are not both snapshots. This field is meaningless. 1: All data is to be synchronized. 2: Incremental data generated after snapshot creation is to be synchronized. **Note:**This parameter is valid only for remote replication pairs whose primary and secondary resources are both snapshots. This parameter specifies whether incremental data or full data is synchronized during initial synchronization.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when the user snapshot synchronization policy is that a specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Example

- Batch querying remote replication pairs.

```
Request: GET /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR?
range=[0-100]&filter=resourceSubtype::0

Response: {
   "data": [
      {
         "CAPACITY": "536870912",
         "COMPRESSVALID": "false",
         "DRRINGID": "--",
         "ENABLECOMPRESS": "false",
         "ENDTIME": "1642104477",
         "HEALTHSTATUS": "2",
         "ID": "2100845b12719eb00000000200000002",
         "ISDATASYNC": "false",
         "ISINCG": "false",
         "ISPRIMARY": "true",
         "ISROLLBACK": "false",
         "LOCALRESID": "1",
         "LOCALRESNAME": "fs_00",
         "LOCALRESTYPE": "40",
         "PAIRTYPE": "0",
         "PRIRESDATASTATUS": "2",
         "RECOVERYPOLICY": "1",
         "REMOTEDEVICEID": "1",
         "REMOTEDEVICENAME": "C",
         "REMOTEDEVICESN": "210235982510G2000030",
         "REMOTERESID": "1",
         "REMOTERESNAME": "fs_00a",
         "REMOTEVSTOREID": "0",
         "REPLICATIONMODEL": "2",
         "RUNNINGSTATUS": "35",
         "SECRESACCESS": "2",
         "SECRESDATASTATUS": "2",
         "SPEED": "2",
         "STARTTIME": "1642104456",
         "SYNCHRONIZETYPE": "1",
         "TIMEDIFFERENCE": "586558",
         "TYPE": 263,
         "VSTOREPAIRID": "----",
         "backupCopyPolicy": "0",
         "bandwidth": "-1",
         "initialSyncType": "0",
         "rmType": "0",
         "switchToAsync": "0",
         "switchToSync": "0",
         "syncSnapPolicy": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "CAPACITY": "10485760",
         "CGID": "2100845b12719eb00000000300000004",
         "CGNAME": "cg_rep_A_PG000351",
         "COMPRESSVALID": "false",
         "DRRINGID": "--",
         "ENABLECOMPRESS": "false",
         "HEALTHSTATUS": "1",
         "ID": "2100845b12719eb00000000200000016",
         "ISDATASYNC": "false",
         "ISINCG": "true",
         "ISPRIMARY": "true",
         "ISROLLBACK": "false",
         "LOCALRESID": "29",
```

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```
            "LOCALRESNAME": "lqq_2_0001",
            "LOCALRESTYPE": "11",
            "PAIRTYPE": "0",
            "PRIRESDATASTATUS": "2",
            "RECOVERYPOLICY": "1",
            "REMOTEDEVICEID": "0",
            "REMOTEDEVICENAME": "B",
            "REMOTEDEVICESN": "210235982510FA000013",
            "REMOTERESID": "23",
            "REMOTERESNAME": "A_lqq_2_0001_REP",
            "REMOTEVSTOREID": "1",
            "REPLICATIONMODEL": "2",
            "REPLICATIONPROGRESS": "4",
            "RUNNINGSTATUS": "23",
            "SECRESACCESS": "2",
            "SECRESDATASTATUS": "5",
            "SPEED": "2",
            "STARTTIME": "1642689938",
            "SYNCHRONIZETYPE": "1",
            "SYNCLEFTTIME": "4294967295",
            "TYPE": 263,
            "VSTOREPAIRID": "----",
            "backupCopyPolicy": "0",
            "bandwidth": "-1",
            "initialSyncType": "0",
            "resourceSubtype": "0",
            "rmType": "0",
            "switchToAsync": "0",
            "switchToSync": "0",
            "syncSnapPolicy": "0",
            "vstoreId": "1",
            "vstoreName": "rm_vst_a"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.2.4.2 Interface for Batch Querying Remote Replication Pairs of Specified LUNs

Function

Batch query remote replication pairs of specified LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/query_replication_pair_for_luns

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
localLunIdList	Mandatory	array	Local LUN ID list. **The value is described as follows:** LUN ID **Note:**You can query the remote replication pairs of a maximum of 50 LUNs at a time.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
runningStatus	Conditional	string(enum)	Running status. **The value is described as follows:** 1: normal 23: synchronizing 33: to be recovered 34: abnormal disconnection 26: split 35: invalid 110: standby
localResID	Conditional	string	ID of a local resource.
remoteResID	Conditional	string	ID of a remote resource.
replicationModel	Conditional	enum	Replication mode. **The value is described as follows:** 1: synchronous 2: asynchronous

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Parameter	Mandatory/ Conditional	Type	Description
remoteDeviceID	Conditional	string	ID of the remote device.

Example

- Batch query remote replication pairs of specified LUNs.

```
Request: GET /deviceManager/rest/ST000000000000000113/REPLICATIONPAIR/
query_replication_pair_for_luns?localLunIdList=[0,1]

Response:
{
   "data": [
      {
         "LOCALRESID": "0",
         "REMOTEDEVICEID": "0",
         "REMOTERESID": "0",
         "REPLICATIONMODEL": "1",
         "RUNNINGSTATUS": "1"
      },
      {
         "LOCALRESID": "1",
         "REMOTEDEVICEID": "0",
         "REMOTERESID": "1",
         "REPLICATIONMODEL": "1",
         "RUNNINGSTATUS": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.2.4.3 Interface for Querying Association Information on a Remote Replication Pair

Function

This interface is used to query association information on a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/replicationpair/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 40: file system 156: remote replication vStore pair
ASSOCIATEOBJID	Mandatory	string	Associated object ID. **The value is described as follows:** LUN ID, file system ID, or remote replication vStore pair ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
ID	Mandatory	string	ID of a remote replication pair.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby
ISPRIMARY	Mandatory	string(bool)	Indicates whether the local end is a primary end. **The value is described as follows:** true: yes false: no
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESTYPE	Mandatory	string(enum)	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system

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Parameter	Mandatory/ Conditional	Type	Description
LOCALRESNAME	Mandatory	string	Name of the local resource.
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTEDEVICESN	Mandatory	string	Serial number of the remote device.
REMOTEDEVICENAME	Mandatory	string	Name of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
REMOTERESNAME	Mandatory	string	Name of the remote resource.
SYNCHRONIZETYPE	Conditional	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is returned when the replication mode is asynchronous.
CAPACITY	Mandatory	string(uint64)	Capacity of the primary resource.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONPROGRESS	Conditional	string(uint32)	Progress. **Note:**This field is returned if the remote replication pair's running status is Synchronizing or Normal.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Conditional	string(uint64)	Start time. **Note:**This field is returned if the remote replication pair has been synchronized.
ENDTIME	Conditional	string(uint64)	End time. **Note:**This field is returned if the remote replication pair has been synchronized.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
TIMINGVAL	Conditional	string(uint32)	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be returned when the synchronization type is timed wait.
ISROLLBACK	Mandatory	string(bool)	Indicates whether the secondary resources are rolling back. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
SECRESDATASTATUS	Mandatory	string(enum)	Data status of the secondary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous replication 2: asynchronous replication
PRIRESDATASTATUS	Mandatory	string(enum)	Data status of the primary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
SECRESACCESS	Mandatory	string(enum)	Read/Write setting for a secondary resource, used to set write protection for the secondary resource. **The value is described as follows:** 1: access denied 2: read-only 3: read/write
ISINCG	Mandatory	string(bool)	Indicates whether a remote replication pair is in a consistency group. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
CGID	Conditional	string	Consistency group ID. **Note:**This field is returned after a pair is added to a consistency group.
switchToAsync	Mandatory	string(enum)	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close
DRRINGID	Mandatory	string	ID of the DR Star trio.
CGNAME	Conditional	string	Consistency group name. **Note:**This field is returned after a pair is added to a consistency group.
ISDATASYNC	Mandatory	string(bool)	Indicates whether data on the primary and secondary ends are consistent. **The value is described as follows:** true: consistent false: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enabled false: disabled **Note:**This field is valid for asynchronous replication only.
SYNCHRONIZESCHED-ULE	Conditional	string(json)	Schedule for starting the synchronization of an asynchronous remote replication pair. **Note:** Delivery by day: "{\"DAY\":\"01:00\"}". Delivery by hour: "{\"HOUR\":\"9\"}".
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned for asynchronous remote replication and the remote replication pair has been synchronized.
VSTOREPAIRID	Mandatory	string	Remote replication vStore pair ID. **Note:**"----" indicates an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous remote replication.
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" indicates an invalid value. This field is returned for LUN replication.
PAIRTYPE	Mandatory	string(enum)	Replication type. **The value is described as follows:** 0: remote replication 1: local replication
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
rmType	Mandatory	string(enum)	Type of the remote replication. **The value is described as follows:** 0: common remote replication 1: cloud remote replication

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Parameter	Mandatory/ Conditional	Type	Description
bandwidth	Mandatory	uint64_t	Bandwidth. **Note:**"-1" indicates an invalid value. The CMO type is 134.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when the user snapshot synchronization policy is to reserve a specified number of user snapshots on the secondary end. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
backupCopyPolicy	Mandatory	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**LUN remote replication does not support this parameter.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when the snapshot retention policy of the secondary storage system is that a specified number of copy snapshots are retained at the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
initialSyncType	Conditional		Initial synchronization type. **The value is described as follows:** 1: All data is synchronized. 2: Current data is synchronized. **Note:**Whether to synchronize the current data or all data during initial synchronization. This parameter is valid only for linked clone volumes.
resourceSubtype	Conditional		Resource subtype. **The value is described as follows:** 0: common LUN; 1: VVol LUN

Parameter	Mandatory/ Conditional	Type	Description
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

Example

- Querying association information on a remote replication pair.

```
Request: GET /deviceManager/rest/2102350RMG10H3000004/replicationpair/associate?
ASSOCIATEOBJTYPE=40&ASSOCIATEOBJID=22

Response: {
   "data": [
      {
         "CAPACITY": "10485760",
         "COMPRESSVALID": "false",
         "DRRINGID": "--",
         "ENABLECOMPRESS": "false",
         "ENDTIME": "1648118111",
         "HEALTHSTATUS": "1",
         "ID": "21007079903ff8df0000000200000001",
         "ISDATASYNC": "false",
         "ISINCG": "false",
         "ISPRIMARY": "true",
```

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```
            "ISROLLBACK": "false",
            "LOCALRESID": "1",
            "LOCALRESNAME": "test",
            "LOCALRESTYPE": "40",
            "PAIRTYPE": "0",
            "PRIRESDATASTATUS": "2",
            "RECOVERYPOLICY": "1",
            "REMOTEDEVICEID": "0",
            "REMOTEDEVICENAME": "Huawei.Storage",
            "REMOTEDEVICESN": "2102350BSB10F1000088",
            "REMOTERESID": "1",
            "REMOTERESNAME": "test",
            "REMOTEVSTOREID": "0",
            "REPLICATIONMODEL": "2",
            "REPLICATIONPROGRESS": "100",
            "RUNNINGSTATUS": "1",
            "SECRESACCESS": "2",
            "SECRESDATASTATUS": "2",
            "SPEED": "2",
            "STARTTIME": "1648118110",
            "SYNCHRONIZETYPE": "1",
            "TIMEDIFFERENCE": "88",
            "TYPE": 263,
            "VSTOREPAIRID": "21007079903ff8df0000000600000000",
            "backupCopyPolicy": "0",
            "bandwidth": "-1",
            "initialSyncType": "0",
            "rmType": "0",
            "switchToAsync": "0",
            "switchToSync": "0",
            "syncSnapPolicy": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.2.4.4 Interface for Querying Remote Replication Pair Information

Function

This interface is used to query basic information about remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 263: remote replication pair
ID	Mandatory	string	Remote replication pair ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby

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Parameter	Mandatory/ Conditional	Type	Description
DRRINGID	Mandatory	string	ID of the DR Star trio.
ISPRIMARY	Mandatory	string(bool)	Indicates whether the local end is a primary end. **The value is described as follows:** true: yes false: no
LOCALRESID	Mandatory	string	ID of the local resource.
LOCALRESNAME	Mandatory	string	Name of the local resource.
LOCALRESTYPE	Mandatory	string(enum)	Type of the local resource. **The value is described as follows:** 11: LUN 40: file system
REMOTEDEVICEID	Mandatory	string	ID of the remote device.
REMOTEDEVICESN	Mandatory	string	Serial number of the remote device.
REMOTEDEVICENAME	Mandatory	string	Name of the remote device.
REMOTERESID	Mandatory	string	ID of the remote resource.
REMOTERESNAME	Mandatory	string	Name of the remote resource.

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Parameter	Mandatory/ Conditional	Type	Description
SYNCHRONIZETYPE	Conditional	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter is returned when the replication mode is asynchronous.
CAPACITY	Mandatory	string(uint64)	Capacity of the primary resource.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONPROGRESS	Conditional	string(uint32)	Progress. **Note:**This field is returned if the remote replication pair's running status is Synchronizing or Normal.
STARTTIME	Conditional	string(uint64)	Start time. **Note:**This field is returned if the remote replication pair has been synchronized.
ENDTIME	Conditional	string(uint64)	End time. **Note:**This field is returned if the remote replication pair has been synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
TIMINGVAL	Conditional	string(uint32)	Timing period (data synchronization period, expressed in seconds). If the value is greater than or equals to 60, it must be a multiple of 60. The value ranges from 3 to 59 seconds or 1 to 1440 minutes. **Note:**This field must be returned when the synchronization type is timed wait.
ISROLLBACK	Mandatory	string(bool)	Indicates whether the secondary resources are rolling back. **The value is described as follows:** true: yes false: no
SECRESDATASTATUS	Mandatory	string(enum)	Data status of the secondary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete

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Parameter	Mandatory/ Conditional	Type	Description
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. The default value is asynchronous. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication
PRIRESDATASTATUS	Mandatory	string(enum)	Data status of the primary resource. **The value is described as follows:** 1: synchronized 2: complete 5: incomplete
SECRESACCESS	Mandatory	string(enum)	Read/Write setting for a secondary resource, used to set write protection for the secondary resource. **The value is described as follows:** 1: access denied 2: read-only 3: read/write
ISINCG	Mandatory	string(bool)	Indicates whether a remote replication pair is in a consistency group. **The value is described as follows:** true: yes false: no
CGID	Conditional	string	Consistency group ID. **Note:**This field is returned after a pair is added to a consistency group.

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Parameter	Mandatory/ Conditional	Type	Description
CGNAME	Conditional	string	Consistency group name. **Note:**This field is returned after a pair is added to a consistency group.
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This field is returned for asynchronous remote replication.
SYNCHRONIZESCHED-ULE	Conditional	string(json)	Schedule for starting the synchronization of an asynchronous remote replication pair. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**This parameter is returned when the replication mode is asynchronous.

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned for asynchronous remote replication and the remote replication pair has been synchronized.
ISDATASYNC	Mandatory	string(bool)	Indicates whether data on the primary and secondary ends are consistent. **The value is described as follows:** true: consistent false: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for remote resources. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous remote replication.
VSTOREPAIRID	Mandatory	string	Remote replication vStore pair ID. **Note:**"----" indicates an invalid value.
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" indicates an invalid value. This field is returned for LUN replication.
PAIRTYPE	Mandatory	string(enum)	Replication type. **The value is described as follows:** 0: remote replication 1: local replication

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Parameter	Mandatory/ Conditional	Type	Description
rmType	Mandatory	string(enum)	Type of remote replication. **The value is described as follows:** 0: common remote replication 1: cloud remote replication
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
bandwidth	Mandatory	uint64_t	Bandwidth. **Note:**"-1" indicates an invalid value. The CMO type is 134.
vstoreId	Mandatory	string	vStore ID. **Note:**---- is an invalid value.
vstoreName	Mandatory	string	vStore name. **Note:**---- is an invalid value.
transferCycle	Conditional	string(uint32)	Duration during which the automatic switchover condition is met when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..1440 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
asyncToSyncBand-width	Conditional	string(uint32)	Host bandwidth when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..10485760 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.
asyncToSyncLatency	Conditional	string(uint32)	Host latency when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..5000 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.
syncToAsyncBand-witdh	Conditional	string(uint32)	Host bandwidth when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 1..10485760 **Note:**This field is returned whether synchronous remote replication automatically switches to asynchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
syncToAsyncLatency	Conditional	string(uint32)	Host latency when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 1..5000 **Note:**This field is returned whether synchronous remote replication automatically switches to asynchronous remote replication.
switchToAsync	Mandatory	string(enum)	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close
initialSyncType	Mandatory	enum	Initial synchronization type of readable and writable snapshot LUNs. **The value is described as follows:** 1: All data is synchronized. 2: Only the data written to the snapshot is synchronized.

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Parameter	Mandatory/ Conditional	Type	Description
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system. 3:"SNAP_TAG_BASED": User snapshots that match the configured tags are synchronized to the secondary storage system.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when the user snapshot synchronization policy is that a specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
backupCopyPolicy	Mandatory	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**LUN remote replication does not support this parameter.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when a specified number of copy snapshots are retained on the secondary storage system. LUN remote replication does not support this parameter.
resourceSubtype	Conditional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN

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Parameter	Mandatory/ Conditional	Type	Description
snapTagList	Conditional	string	List of tags for user snapshots retained on the secondary storage system. **The value is described as follows:** 1: Each tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. 2: You can enter a maximum of 10 tag names. 3: The tag name must be unique. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

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Parameter	Mandatory/ Conditional	Type	Description
snapTagListRetention-Num	Conditional	string	List of the number of snapshots retained on the secondary storage system based on tags. **The value is described as follows:** 1: The value ranges from 1 to 4065. 2: You must enter the number of snapshots retained on the secondary storage system for each snapshot tag. 3: The total number of tagged snapshots and copy snapshots to be retained on the secondary storage system must not exceed the upper limit 4065. **Note:**This parameter is returned when the user snapshot synchronization policy is based on snapshot tags. LUN remote replication does not support this parameter.

Example

- Querying basic information about remote replication pairs.

```
Request: GET /deviceManager/rest/2102350RMG10H3000004/REPLICATIONPAIR/
21007079903ff8df0000000200000000

Response: {
   "data": {
      "CAPACITY": "10485760",
      "COMPRESSVALID": "false",
      "DRRINGID": "--",
      "ENABLECOMPRESS": "false",
      "ENDTIME": "1648126979",
      "HEALTHSTATUS": "1",
      "ID": "21007079903ff8df0000000200000001",
      "ISDATASYNC": "false",
      "ISINCG": "false",
      "ISPRIMARY": "true",
      "ISROLLBACK": "false",
```

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```
        "LOCALRESID": "1",
        "LOCALRESNAME": "test",
        "LOCALRESTYPE": "40",
        "PAIRTYPE": "0",
        "PRIRESDATASTATUS": "2",
        "RECOVERYPOLICY": "1",
        "REMOTEDEVICEID": "0",
        "REMOTEDEVICENAME": "Huawei.Storage",
        "REMOTEDEVICESN": "2102350BSB10F1000088",
        "REMOTERESID": "1",
        "REMOTERESNAME": "test",
        "REMOTEVSTOREID": "0",
        "REPLICATIONMODEL": "2",
        "REPLICATIONPROGRESS": "100",
        "RUNNINGSTATUS": "1",
        "SECRESACCESS": "2",
        "SECRESDATASTATUS": "2",
        "SPEED": "2",
        "STARTTIME": "1648126977",
        "SYNCHRONIZETYPE": "1",
        "TIMEDIFFERENCE": "14992",
        "TYPE": 263,
        "VSTOREPAIRID": "21007079903ff8df0000000600000000",
        "backupCopyPolicy": "0",
        "bandwidth": "-1",
        "initialSyncType": "0",
        "rmType": "0",
        "snapTagList": "11",
        "snapTagListRetentionNum": "100",
        "switchToAsync": "0",
        "switchToSync": "0",
        "syncSnapPolicy": "3",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.2.4.5 Interface for Querying the Number of Remote Replication Pairs

Function

This interface is used to query the number of remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Fuzzy query of the LOCALRESNAME parameter is supported. Exact query of the following parameters is supported: ID, LOCALRESID, REMOTERESID, LOCALRESTYPE, HEALTHSTATUS, RUNNINGSTATUS, REPLICATIONMODEL, ISPRIMARY, rmType, DRRINGID, ISINCG, and resourceSubtype.
vstoreId	Conditional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried remote replication pairs.

Example

- Querying the number of remote replication pairs.

```
Request: GET /deviceManager/rest/1016964156/REPLICATIONPAIR/count

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.9.2.5 Others

2.9.2.5.1 Interface for Batch Splitting Remote Replication Pairs

Function

This interface is used to batch split remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/split/batch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.

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Example

- Splitting remote replication pairs in batches.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/split/batch
[
    {
        "ID": "4846fb8ca15c0004"
    },
    {
        "ID": "4846fb8ca15c0005"
    }
]

Response:
{
    "data": [{"ID": "4846fb8ca15c0004","error": {
        "code": 0,
        "description": "0",
        "suggestion": ""
    }},{"ID": "4846fb8ca15c0005","error": {
        "code": 0,
        "description": "0",
        "suggestion": ""
    }}],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.2 Interface for Batch Synchronizing Remote Replication Pairs

Function

This interface is used to batch synchronize remote replication pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/sync/batch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory		ID of a remote replication pair.

Example

- Synchronizing remote replication pairs in batches.

```
Request: PUT /deviceManager/rest/2102350RMG10H3000004/REPLICATIONPAIR/sync/batch
[
    {
        "ID": "21007079903ff8df0000000200000000"
    },
    {
        "ID": "21007079903ff8df0000000200000002"
    }
]

Response: {
    "data": [
        {
            "ID": "21007079903ff8df0000000200000000",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ID": "21007079903ff8df0000000200000002",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.2.5.3 Interface for Disabling Secondary Resource Protection for a File System Remote Replication Pair

Function

This interface is used to disable secondary resource protection for a remote replication pair of the file system (set the status of secondary resource protection to Read/write).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/CANCEL_SECONDARY_WRITE_LOCK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Disabling secondary resource protection for a remote replication pair of the file system..

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/CANCEL_SECONDARY_WRITE_LOCK
{
   "ID": "0022A1068DFE0000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.2.5.4 Interface for Disabling Secondary Resource Protection for a Remote Replication Pair

Function

This interface is used to disable secondary resource protection for a remote replication pair for a LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SECRESACCESS	Mandatory	enum	Read/write setting for a secondary LUN, used to disable write protection for the secondary LUN. **The value is described as follows:** 3: read/write
ID	Mandatory	string	Remote replication pair ID.
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Disabling secondary resource protection for a remote replication pair for a LUN.

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```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/4846fb8c15c0001
{
   "SECRESACCESS": "3"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.2.5.5 Interface for Enabling Secondary Resource Protection for a File System Remote Replication Pair

Function

This interface is used to enable secondary resource protection for a remote replication pair of the file system (set the status of secondary resource protection to Access prohibited).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/SET_SECONDARY_WRITE_LOCK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Enabling secondary resource protection for a remote replication pair of the file system.

  ```
  Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/SET_SECONDARY_WRITE_LOCK
  ```

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```
{
    "ID": "0022A1068DFE0000"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.6 Interface for Enabling Secondary Resource Protection for a Remote Replication Pair

Function

This interface is used to enable secondary resource protection for a remote replication pair for a LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SECRESACCESS	Mandatory	enum	Read/write setting for a secondary LUN, used to enable write protection for the secondary LUN. **The value is described as follows:** 2: read-only
ID	Mandatory	string	Remote replication pair ID.
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Enabling secondary resource protection for a remote replication pair for a LUN.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/4846fb8c15c0001
{
   "SECRESACCESS": "2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.2.5.7 Interface for Performing a Primary-Secondary Switchover on a Remote Replication vStore Pair

Function

Perform a primary/secondary switchover on a remote replication vStore pair.

HighRisk

You are about to perform a primary/secondary switchover for remote replication vStore pair (primary resource {0}, secondary resource {1}). This operation will exchange the roles of the primary and secondary resources. If the two resources are not the same in capacity, the following risks may arise:

1. If the capacity of the primary resource is larger than that of the secondary resource, remote replication I/Os may become abnormal, the pair may be disconnected, or data may be inconsistent between the primary and secondary resources.

2. If the capacity of the primary resource is smaller than that of the secondary resource, some storage space of the secondary resource is wasted.

Suggestion: Before performing this operation, ensure that you have selected the correct primary and secondary resources.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/swap

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore pair ID. **Length:**128

Result

N/A

Example

- Perform a primary/secondary switchover on a vStore pair.

```
Request: PUT /deviceManager/rest/ST00000000000000049/VSTORE_PAIR/swap
{
   "ID":"2100630000040506000000600000004"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.8 Interface for Performing a Primary_Secondary Switchover on a Remote Replication Pair

Function

This interface is used to perform a primary/secondary switchover on a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/switch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Performing a primary/secondary switchover on a remote replication pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/switch
{
    "ID": "4846fb8ca15c0004"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.9 Interface for Setting Secondary Resource Protection for a File System Remote Replication Pair to Read-only

Function

This interface is used to set the secondary resource protection for a file system remote replication pair to read-only.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/SET_SECONDARY_FILESYSTEM_READ_ONLY

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Replication replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Setting the secondary resource protection for a file system remote replication pair to read-only.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/
SET_SECONDARY_FILESYSTEM_READ_ONLY
{
    "ID": "0022A1068DFE0000"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.10 Interface for Splitting a Remote Replication Pair

Function

This interface is used to split a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/split

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Splitting a remote replication pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/split
{
    "ID": "4846fb8ca15c0004"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.11 Interface for Splitting a Remote Replication vStore Pair

Function

Split a vStore pair.

HighRisk

You are about to split the relationship between the primary resource and secondary resource of a remote replication vStore pair. This operation will cause the data of the secondary resource to be inconsistent with that of the primary resource. Suggestion: Before performing this operation, ensure that the splitting is necessary.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/split

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore pair ID. **The value is described as follows:** string **Length:**128

Result

N/A

Example

- Split a vStore pair.

```
Request: PUT /deviceManager/rest/ST000000000000000049/VSTORE_PAIR/split
{
   "ID":"2100630000040506000000600000004"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.12 Interface for Synchronizing a Remote Replication Pair

Function

This interface is used to synchronize a remote replication pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/sync

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId		string	vStore ID. **The value is described as follows:** vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.
isFullCopy	Optional	bool	Whether to enable full synchronization. **The value is described as follows:** 1:"yes": enables full synchronization. 2:"no": disables full synchronization. **Default:**No

Result

N/A

Example

- Synchronizing a remote replication pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/sync
{
    "ID": "4846fb8ca15c0004"
    "isFullCopy": "0"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.2.5.13 Interface for Synchronizing a Remote Replication vStore Pair

Function

Synchronize a vStore pair.

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HighRisk

You are about to synchronize data and configurations of the primary resource to the secondary resource. This operation will cause the data and configurations of the primary resource to overwrite those of the secondary resource.

Suggestion: Before performing this operation, ensure that the secondary resource is correct and the data and configurations of the secondary resource can be overwritten.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/sync

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore pair ID. **The value is described as follows:** string **Length:**128

Result

N/A

Example

- Synchronize a vStore pair.

```
Request: PUT /deviceManager/rest/ST000000000000000049/VSTORE_PAIR/sync
{
  "ID":"2100630000040506000000600000004"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.2.5.14 (Not Recommended)Interface for Disabling Secondary Resource Protection for a File System Remote Replication Pair

Function

This interface is used to disable secondary resource protection for a remote replication pair of the file system (set the status of secondary resource protection to Read/write).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/CANCEL_SECODARY_WRITE_LOCK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Disabling secondary resource protection for a remote replication pair of the file system..

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/CANCEL_SECODARY_WRITE_LOCK
{
   "ID": "0022A1068DFE0000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.2.5.15 (Not Recommended)Interface for Enabling Secondary Resource Protection for a File System Remote Replication Pair

Function

This interface is used to enable secondary resource protection for a remote replication pair of the file system (set the status of secondary resource protection to Access prohibited).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/SET_SECODARY_WRITE_LOCK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Enabling secondary resource protection for a remote replication pair of the file system.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/SET_SECODARY_WRITE_LOCK
{
    "ID": "0022A1068DFE0000"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.2.5.16 (Not Recommended)Interface for Setting Secondary Resource Protection for a File System Remote Replication Pair to Read-only

Function

This interface is used to set the secondary resource protection for a file system remote replication pair to read-only.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/REPLICATIONPAIR/SET_SECODARY_FILESYSTEM_READ_ONLY

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Replication replication pair ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Setting the secondary resource protection for a file system remote replication pair to read-only.

```
Request: PUT /deviceManager/rest/210235843910E6000009/REPLICATIONPAIR/
SET_SECODARY_FILESYSTEM_READ_ONLY
{
    "ID": "0022A1068DFE0000"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3 consistency_group

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2.9.3.1 Add

2.9.3.1.1 Interface for Adding a Remote Replication Pair to a Consistency Group of Remote Replication

Function

This interface is used to add a remote replication pair to a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ADD_MIRROR

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
RMLIST	Mandatory	array	Specifies the list of remote replication pair IDs. Only one remote replication pair can be added at a time. The value is a list for future expansion but only one member can be added in the current version.

Result

N/A

Example

- Adding a remote replication pair to a remote replication consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ADD_MIRROR
{
    "ID": "4846fb8ca15c0000",
    "RMLIST": ["4846fb8ca15c0004"]
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.1.2 Interface for Batch Adding Remote Replication Pairs to a Remote Replication Consistency Group

Function

This interface is used to batch add remote replication pairs to a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ADD_MIRROR/batch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
RMLIST	Mandatory	array	List of remote replication pair IDs. Only one remote replication pair can be added for each record.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
RMLIST	Mandatory	array	List of remote replication pair IDs. Only one remote replication pair can be added for each record.

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Example

- Adding remote replication pairs to a remote replication consistency group in batches.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ADD_MIRROR/batch
[{
   "ID": "4846fb8ca15c0000",
   "RMLIST": "4846fb8ca15c0004"
},{
   "ID": "4846fb8ca15c0000",
   "RMLIST": "4846fb8ca15c0005"
}]

Response:
{
   "data": [{"ID": "4846fb8ca15c0000",
                "RMLIST": "4846fb8ca15c0004",
               "error": {
                     "code": 0,
                     "description": "0",
                     "suggestion": ""}},
              { "ID": "4846fb8ca15c0000",
                "RMLIST": "4846fb8ca15c0005",
               "error": {
                     "code": 0,
                     "description": "0",
                     "suggestion": ""}}],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.3.1.3 Interface for Creating a Consistency Group of Remote Replication

Function

This interface is used to create a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value cannot be empty, includes only letters, digits, underscores (_), hyphens (-), and periods (.), and must start with a letter or digit. **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~127
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic **Note:**The default value is automatic recovery.
REPLICATIONMODEL	Optional	enum	Replication mode. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication **Default:**2: asynchronous **Note:**The default value is asynchronous.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
SYNCHRONIZETYPE	Optional	enum	Synchronization type. **The value is described as follows:** 1: Manual 2: Timed wait after synchronization begins 3: Timed wait after synchronization ends 4: Specific time policy **Default:**1: manual **Note:**This parameter is valid for asynchronous remote replication only. The default value is manual synchronization.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGVAL	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. **The value is described as follows:** 1 to 1440 min. **Note:**This parameter must be delivered when the synchronization type is timed wait. If OceanStor Dorado V6 works as the local storage device, and OceanStor Dorado V3 or OceanStor V5 works as the remote storage device, the minimum timing period is 3 minutes.
TIMINGVALINSEC	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. This parameter and the parameter TIMINGVAL cannot be delivered at the same time. **The value is described as follows:** 10 to 86400s. If the value is greater than or equals to 60, it must be a multiple of 60. **Note:**This field must be delivered when the synchronization type is timed wait. This parameter and the parameter TIMINGVAL cannot be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLECOMPRESS	Optional	bool	Link compression (for asynchronous remote replication only). **The value is described as follows:** true: enables compression. false: disables compression. **Default:**false: disables compression. **Note:**This field is valid for asynchronous remote replication only.
cg_type	Optional	enum	Type of the consistency group. **The value is described as follows:** 0: common consistency group **Default:**0: common consistency group
localpgId	Optional	string	Local protection group ID. **The value is described as follows:** 0 to 16383. **Length:**32
rmtpgId	Optional	string	Remote protection group ID. **The value is described as follows:** 0 to 16383. **Length:**32
remoteArrayID	Optional	string	Remote device ID. **The value is described as follows:** 0 to 63. **Length:**16

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous consistency group. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**Only when "SYNCHRONIZETYPE" is set to "4", this parameter is valid. Only one of the three schedules can be configured.
syncSnapPolicy	Optional	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/Optional/Conditional	Type	Description
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**Only when "syncSnapPolicy" is set to "2", this parameter is valid.
backupCopyPolicy	Optional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**Note: This parameter is not supported in this version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**Only when "backupCopyPolicy" is set to "1", this parameter is valid. This parameter is not supported in this version.
resourceSubtype	Optional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 221: consistency group
ENDTIME	Mandatory	time	End time. **Note:**This field is returned when the value is a valid value.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	time	Start time. **Note:**This field is returned when the value is a valid value.
ID	Mandatory	string	Consistency group ID.
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid
DESCRIPTION	Mandatory	string	Description.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
SYNCHRONIZETYPE	Mandatory	string(enum)	Synchronization type. **The value is described as follows:** 1: manual 2: timed wait after synchronization begins 3: timed wait after synchronization ends **Note:**This field is valid for asynchronous remote replication only. "255" indicates an invalid value.
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is a primary end. **The value is described as follows:** true: yes false: no
TIMINGVAL	Conditional	string(uint32)	Timing period. The timing period takes effect when the synchronization type is not manual. **Note:**This field is returned for asynchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
TIMINGVALINSEC	Conditional	string(uint32)	Timing period. The timing period takes effect when the synchronization type is not manual. **Note:**This field is returned for asynchronous remote replication.
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
ENABLECOMPRESS	Conditional	string(bool)	Link compression (for asynchronous remote replication only). **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This field is valid for asynchronous remote replication only.
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:** This field is returned for asynchronous remote replication. This field is returned when the value is a valid value.
REMTIMEOUTPERIOD	Mandatory	string(uint32)	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field is returned for synchronous remote replication.
cg_type	Mandatory	string(enum)	Type of the consistency group. **The value is described as follows:** 0: common consistency group
DRRINGID	Mandatory	string	ID of the DR Star trio.

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Parameter	Mandatory/ Conditional	Type	Description
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**This parameter is returned when the user snapshot synchronization policy is that a specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**This parameter is returned when the snapshot retention policy of the secondary storage system is that a specified number of copy snapshots are retained at the secondary storage system.
resourceSubtype	Mandatory	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
vstoreName	Mandatory	string	vStore name.
switchToSync	Mandatory	enum	Switch for automatically switching to synchronous replication. **The value is described as follows:** 0: off; 1: on
bandwidth	Mandatory	uint64	Bandwidth. **Unit:**MB/s
rmtPgName	Mandatory	string	Name of a remote protection group. **The value is described as follows:** The value contains 1 to 63 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
remoteArrayID	Mandatory	string	Remote device ID.
localPgName	Mandatory	string	Name of a local protection group. **The value is described as follows:** The value contains 1 to 63 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
switchToAsync	Mandatory	enum	Switch for automatically switching to asynchronous replication. **The value is described as follows:** 0: off; 1: on
vstoreId	Mandatory	string	vStore ID.

Usage Guidelines

If OceanStor Dorado V6 works as the local storage device, and OceanStor Dorado V3 or OceanStor V5 works as the remote storage device, the minimum timing period is 3 minutes.

Example

- Creating a remote replication consistency group.

```
Request: POST /deviceManager/rest/2102351LWG10HB000006/CONSISTENTGROUP
{
   "DESCRIPTION": "",
   "ENABLECOMPRESS": "false",
   "NAME": "ConsistentGroup001",
   "RECOVERYPOLICY": "1",
   "REPLICATIONMODEL": "2",
   "SPEED": "2",
   "SYNCHRONIZETYPE": "1"
}

Response: {
   "data": {
      "COMPRESSVALID": "false",
      "DESCRIPTION": "",
      "DRRINGID": "--",
      "ENABLECOMPRESS": "false",
      "ENDTIME": "-1",
      "HEALTHSTATUS": "1",
      "ID": "2100602e2084e5ab0000000300000005",
```

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```
        "ISEMPTY": "true",
        "ISPRIMARY": "true",
        "NAME": "ConsistentGroup001",
        "RECOVERYPOLICY": "1",
        "REMTIMEOUTPERIOD": "255",
        "REPLICATIONMODEL": "2",
        "RUNNINGSTATUS": "1",
        "SPEED": "2",
        "STARTTIME": "-1",
        "SYNCHRONIZETYPE": "1",
        "TYPE": 221,
        "bandwidth": "-1",
        "cg_type": "0",
        "localPgName": "--",
        "localpgId": "-1",
        "remoteArrayID": "4294967295",
        "resourceSubtype": "0",
        "rmtPgName": "--",
        "rmtpgId": "-1",
        "switchToAsync": "0",
        "switchToSync": "0",
        "syncSnapPolicy": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.3.2 Delete

2.9.3.2.1 Interface for Batch Removing Remote Replication Pairs from a Remote Replication Consistency Group

Function

This interface is used to batch remove remote replication pairs from a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DEL_MIRROR/batch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RMLIST	Mandatory	array	List of remote replication pair IDs. Only one remote replication pair can be removed for each record.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
RMLIST	Mandatory	array	List of remote replication pair IDs. Only one remote replication pair can be removed for each record.

Example

- Removing remote replication pairs from a remote replication consistency group in batches.

```
Request: PUT /deviceManager/rest/210235843910E6000009/DEL_MIRROR/batch
[{
   "ID": "4846fb8ca15c0000",
   "RMLIST": ["4846fb8ca15c0004"]
},{
   "ID": "4846fb8ca15c0000",
   "RMLIST": ["4846fb8ca15c0005"]
}]

Response:
{
   "data": [{"ID": "4846fb8ca15c0000",
                "RMLIST": ["4846fb8ca15c0004"],
              "error": {
                   "code": 0,
                   "description": "0",
                   "suggestion": ""}},
            { "ID": "4846fb8ca15c0000",
             "RMLIST": ["4846fb8ca15c0005"],
```

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```
                "error": {
                     "code": 0,
                    "description": "0",
                    "suggestion": ""}}],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.3.2.2 Interface for Deleting a Consistency Group of Remote Replication

Function

This interface is used to delete a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISLOCALDELETE	Optional	bool	Indicates whether a remote replication consistency group can be locally deleted when the link is disconnected. When this parameter is not delivered, the default value is no, indicating a remote replication consistency group cannot be locally deleted. **The value is described as follows:** false: no true: yes **Default:**false: no
ID	Mandatory	string	Remote replication consistency group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
resourceSubtype	Optional	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a remote replication consistency group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/
4846fb8c15c0001?ISLOCALDELETE=false

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.2.3 Interface for Removing a Remote Replication Pair from a Consistency Group of Remote Replication

Function

This interface is used to remove a remote replication pair from a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/DEL_MIRROR

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
RMLIST	Mandatory	array	List of remote replication pair IDs. Only one remote replication pair can be removed every time.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Removing a remote replication pair from a remote replication consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/DEL_MIRROR
{
    "ID": "4846fb8ca15c0000",
    "RMLIST": ["4846fb8ca15c0004"]
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.3 Modify

2.9.3.3.1 Interface for Changing the Replication Mode of a Remote Replication Consistency Group

Function

This interface is used to change the replication mode of a remote replication consistency group.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/transfer

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 221: consistency group
ID	Mandatory	string	ID of a remote replication consistency group.
REPLICATIONMODEL	Mandatory	string(enum)	Remote replication mode. **The value is described as follows:** LUN-based remote replication: 1:"synchronization": indicates synchronous remote replication. 2:"asynchronization": indicates asynchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZETYPE	Conditional	enum	Synchronization type. **The value is described as follows:** The value can be: 1:"manual": Data needs to be synchronized manually. 2:"timed_wait_when_synchronization_begins": The system starts timing as soon as data synchronization starts. 3:"timed_wait_when_synchronization_ends": The system starts timing as soon as data synchronization ends. 4:"specified_time": Specific time policy. **Note:**This parameter is mandatory when the remote replication mode is changed to asynchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
timingVal	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. **The value is described as follows:** 1 to 1440 minutes. **Note:**This field must be delivered when the synchronization type is changed from manual to timed wait when synchronization begins or timed wait when synchronization ends. Parameters TIMINGVAL and TIMINGVALINSEC cannot be delivered at the same time.
TIMINGVALINSEC	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. **The value is described as follows:** 10 to 86400 seconds. If the value is greater than or equals to 60, it must be a multiple of 60. **Note:**This field must be delivered when the synchronization type is changed from manual to timed wait when synchronization begins or timed wait when synchronization ends. Parameters TIMINGVAL and TIMINGVALINSEC cannot be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication consistency group. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**Only when "SYNCHRONIZETYPE" is set to "4", this parameter is valid. Only one of the three schedules can be configured.

Result

N/A

Example

- Changing the replication mode of consistency group "200bc79b99520000" to "asynchronization".

```
Request: PUT /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/transfer
{
   "ID":"200bc79b99520000",
   "TYPE":221,
   "REPLICATIONMODEL":"2",
   "SYNCHRONIZETYPE": "1"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.3.3.2 Interface for Modifying a Consistency Group of Remote Replication

Function

This interface is used to modify a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
NAME	Optional	string	Name. **The value is described as follows:** The value cannot be empty and must start with a letter or digit. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~127
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/Optional/Conditional	Type	Description
SYNCHRONIZETYPE	Optional	enum	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This parameter must be delivered for asynchronous remote replication.
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication consistency group. **The value is described as follows:** Delivery by week: {"WEEK":{"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"}}. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**Only when "SYNCHRONIZETYPE" is set to "4", this parameter is valid. Only one of the three schedules can be configured.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGVAL	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. **The value is described as follows:** 1 to 1440 minutes. **Note:**This parameter must be delivered when the synchronization type is changed from manual to timed wait. Parameters TIMINGVAL and TIMINGVALINSEC cannot be delivered at the same time. If OceanStor Dorado V6 works as the local storage device, and OceanStor Dorado V3 or OceanStor V5 works as the remote storage device, the minimum timing period is 3 minutes.

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Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGVALINSEC	Conditional	uint32	Timing period. The timing period takes effect when the synchronization type is not manual. **The value is described as follows:** 10 to 86400 seconds. If the value is greater than or equals to 60, it must be a multiple of 60. **Note:**This field must be delivered when the synchronization type is changed from manual to timed wait after synchronization begins or timed wait after synchronization ends. Parameters TIMINGVAL and TIMINGVALINSEC cannot be delivered at the same time.
ENABLECOMPRESS	Optional	bool	Link compression (for asynchronous remote replication only). **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This field is valid for asynchronous remote replication only.

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Parameter	Mandatory/Optional/Conditional	Type	Description
REMTIMEOUTPERIOD	Conditional	uint32	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported. **Note:**This field must be delivered when you set the I/O timeout threshold for synchronous remote replication.
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** 1 to 1024.
asyncToSyncBand-width	Conditional	uint32	Host bandwidth when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 0 to 10485760. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
transferCycle	Conditional	uint32	Duration during which the automatic switchover condition is met when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1 to 1440. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.
syncToAsynclatency	Conditional	uint32	Host latency when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 0 to 5000. **Note:**This parameter is mandatory when synchronous remote replication automatically switches to asynchronous remote replication.

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Parameter	Mandatory/Optional/Conditional	Type	Description
asyncToSyncLatency	Conditional	uint32	Host latency when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 0 to 5000. **Note:**This parameter is mandatory when asynchronous remote replication automatically restores to synchronous remote replication.
syncToAsyncBand-width	Conditional	uint32	Host bandwidth when synchronous remote replication switches to asynchronous remote replication. **The value is described as follows:** 0 to 10485760. **Note:**This parameter is mandatory when synchronous remote replication automatically switches to asynchronous remote replication.
switchtosync	Optional	enum	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close **Note:**This parameter can be set to ON only when the replication mode is sync.

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Parameter	Mandatory/Optional/Conditional	Type	Description
switchtoasync	Optional	enum	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close **Note:**This parameter can be set to ON only when the replication mode is sync.
backupCopyPolicy	Optional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**This parameter is not supported in this version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**Only when "backupCopyPolicy" is set to "1", this parameter is valid. This parameter is not supported in this version.
syncSnapPolicy	Optional	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE" : Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512. **Note:**Only when "syncSnapPolicy" is set to "2", this parameter is valid.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Usage Guidelines

If OceanStor Dorado V6 works as the local storage device, and OceanStor Dorado V3 or OceanStor V5 works as the remote storage device, the minimum timing period is 3 minutes.

Example

- Modifying a remote replication consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/4846fb8c15c0001
{
    "SYNCHRONIZETYPE": "2",
    "TIMINGVALINSEC": "3600"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.4 Query

2.9.3.4.1 Interface for Batch Querying a Consistency Group of Remote Replication

Function

This interface is used to batch query remote replication consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, REPLICATIONMODEL, ISPRIMARY, cg_type, DRRINGID, and resourceSubtype are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time
localpgId	Optional	string	Local protection group ID. **The value is described as follows:** 0 to 8191. **Length:**32
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 221: consistency group
ID	Mandatory	string	Remote replication consistency group ID.
NAME	Mandatory	string	Object name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby
DRRINGID	Mandatory	string	ID of the DR Star trio.
DESCRIPTION	Mandatory	string	Description.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONMODEL	Mandatory	string(enum)	Replication model. **The value is described as follows:** 1: synchronous replication 2: asynchronous replication

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
SYNCHRONIZETYPE	Mandatory	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. **Note:**This field is valid for asynchronous remote replication only. "255" indicates an invalid value.
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is a primary end. **The value is described as follows:** true: yes false: no
TIMINGVAL	Conditional	string(uint32)	Timing period, expressed in minutes. The timing period takes effect when the synchronization type is not manual. **Note:**This parameter is returned when the replication mode is asynchronous.

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Parameter	Mandatory/ Conditional	Type	Description
TIMINGVALINSEC	Conditional	string(uint32)	Timing period, expressed in seconds. The timing period takes effect when the synchronization type is not manual. **Note:**This parameter is returned when the replication mode is asynchronous.
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This field is valid for asynchronous replication only.
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous replication.
STARTTIME	Mandatory	string(uint64)	Start time. **Note:**"-1" indicates an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
ENDTIME	Mandatory	string(uint64)	End time. **Note:**"-1" indicates an invalid value.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned when the replication mode is asynchronous and the consistency group has been synchronized.
REMTIMEOUTPERIOD	Mandatory	uint32	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported.
cg_type	Mandatory	string(enum)	Type of the consistency group. **The value is described as follows:** 0: common consistency group 1: cloud consistency group
remoteArrayID	Mandatory	string	Remote device ID. **The value is described as follows:** 0 to 9 characters.
localpgId	Mandatory	string	Local protection group ID.

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Parameter	Mandatory/ Conditional	Type	Description
rmtpgId	Mandatory	string	Remote protection group ID.
bandwidth	Mandatory	uint64_t	Bandwidth. **The value is described as follows:** 2-500 **Note:**"-1" is an invalid value.
localPgName	Mandatory	string	Local protection group name.
rmtPgName	Mandatory	string	Remote protection group name.
resourceSubtype	Mandatory	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE": Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when the user snapshot synchronization policy is to retain a specified number of user snapshots at the secondary storage system. This parameter is not supported in this version.
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1 to 512 **Note:**This parameter is returned when the snapshot retention policy of the secondary storage system is that a specified number of copy snapshots are retained at the secondary storage system.
switchToAsync	Mandatory	string(enum)	Switch for automatically switching to asynchronous replication. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 0: off 1: on
backupCopyPolicy	Conditional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**This parameter is not supported in this version.
remoteVstoreId	Conditional		Remote vStore ID. **Note:**This parameter is not returned when the remote end does not support SmartMulti-Tenant.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying remote replication consistency groups.

```
Request: GET /deviceManager/rest/2102351PDT10HB000001/CONSISTENTGROUP?
timeConversion=0&range=[0-100]&filter=resourceSubtype::0
```

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```
Response: {
   "data": [
      {
         "COMPRESSVALID": "false",
         "DESCRIPTION": "",
         "DRRINGID": "--",
         "ENABLECOMPRESS": "false",
         "ENDTIME": "1645603539",
         "HEALTHSTATUS": "1",
         "ID": "2100c4ff1febf5a10000000300000001",
         "ISEMPTY": "false",
         "ISPRIMARY": "true",
         "NAME": "cg_rep_Huaage_PG0002128",
         "RECOVERYPOLICY": "1",
         "REMTIMEOUTPERIOD": "255",
         "REPLICATIONMODEL": "2",
         "RUNNINGSTATUS": "1",
         "SPEED": "2",
         "STARTTIME": "1645603538",
         "SYNCHRONIZETYPE": "1",
         "TIMEDIFFERENCE": "2222",
         "TYPE": 221,
         "bandwidth": "-1",
         "cg_type": "0",
         "localPgName": "PG0002",
         "localpgId": "1",
         "remoteArrayID": "0",
         "remoteVstoreId": "0",
         "resourceSubtype": "0",
         "rmtPgName": "PG0002",
         "rmtpgId": "1",
         "switchToAsync": "0",
         "switchToSync": "0",
         "syncSnapPolicy": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "COMPRESSVALID": "false",
         "DESCRIPTION": "",
         "DRRINGID": "--",
         "ENABLECOMPRESS": "false",
         "ENDTIME": "1645605720",
         "HEALTHSTATUS": "1",
         "ID": "2100c4ff1febf5a10000000300000002",
         "ISEMPTY": "false",
         "ISPRIMARY": "true",
         "NAME": "cg001",
         "RECOVERYPOLICY": "1",
         "REMTIMEOUTPERIOD": "255",
         "REPLICATIONMODEL": "2",
         "RUNNINGSTATUS": "1",
         "SPEED": "2",
         "STARTTIME": "1645605719",
         "SYNCHRONIZETYPE": "1",
         "TIMEDIFFERENCE": "41",
         "TYPE": 221,
         "bandwidth": "-1",
         "cg_type": "0",
         "localPgName": "--",
         "localpgId": "-1",
         "remoteArrayID": "0",
         "remoteVstoreId": "0",
         "resourceSubtype": "0",
         "rmtPgName": "--",
         "rmtpgId": "-1",
         "switchToAsync": "0",
         "switchToSync": "0",
```


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```
            "syncSnapPolicy": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.3.4.2 Interface for Querying a Consistency Group of Remote Replication

Function

This interface is used to query a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 221: consistency group
ID	Mandatory	string	Remote replication consistency group ID.
NAME	Mandatory	string	Object name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 33: To be recovered 34: Interrupted 26: Split 35: Invalid 110: Standby
DESCRIPTION	Mandatory	string	Description.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
REPLICATIONMODEL	Mandatory	string(enum)	Replication mode. **The value is described as follows:** 1: synchronous remote replication 2: asynchronous remote replication

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
SYNCHRONIZETYPE	Mandatory	string(enum)	Synchronization type. **The value is described as follows:** 1: Manual. 2: Timed wait after synchronization begins. 3: Timed wait after synchronization ends. 4: Specific time policy. **Note:**This field is valid for asynchronous remote replication only. "255" indicates an invalid value.
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is a primary end. **The value is described as follows:** true: yes false: no
TIMINGVAL	Conditional	string(uint32)	Timing period. The timing period takes effect when the synchronization type is not manual. **Note:**This parameter is returned when the replication mode is asynchronous.

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Parameter	Mandatory/ Conditional	Type	Description
TIMINGVALINSEC	Conditional	string(uint32)	Timing period. The timing period takes effect when the synchronization type is not manual. **Note:**This parameter is returned when the replication mode is asynchronous.
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
ENABLECOMPRESS	Conditional	string(bool)	Link compression. **The value is described as follows:** true: enables compression. false: disables compression. **Note:**This field is valid for asynchronous remote replication only.
COMPRESSVALID	Conditional	string(bool)	Indicates whether compression has taken effect. **The value is described as follows:** true: valid false: invalid **Note:**This field is returned for asynchronous remote replication.
STARTTIME	Mandatory	string(uint64)	Start time. **Note:**"-1" indicates an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
ENDTIME	Mandatory	string(uint64)	End time. **Note:**"-1" indicates an invalid value.
TIMEDIFFERENCE	Conditional	string	Time difference. **Note:**"-1" indicates an invalid value. This field is returned when the replication mode is asynchronous and the consistency group has been synchronized.
REMTIMEOUTPERIOD	Mandatory	uint32	I/O timeout threshold for the secondary LUN. **The value is described as follows:** The value ranging from 10 to 30 indicates that the I/O timeout threshold for remote resources is enabled and the timeout threshold is set to the specified value. 255 indicates that the I/O timeout threshold for remote resources is not enabled or not supported.
cg_type	Mandatory	string(enum)	Type of the consistency group. **The value is described as follows:** 0: common consistency group
DRRINGID	Mandatory	string	ID of the DR Star trio.
bandwidth	Mandatory	uint64	Bandwidth.
localpgId	Mandatory	uint64_t	ID of the local protection group. **The value is described as follows:** 0~8191

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Parameter	Mandatory/ Conditional	Type	Description
rmtpgId	Mandatory	uint64_t	Remote protection group ID. **The value is described as follows:** 0-8191.
remoteVstoreId	Mandatory		Remote vStore ID.
vstoreName	Mandatory		vStore name.
vstoreId	Mandatory		Local vStore ID.
localPgName	Mandatory	string	Name of a local protection group.
rmtPgName	Mandatory	string	Name of a remote protection group.
SYNCHRONIZESCHED-ULE	Conditional	json	Schedule for starting the synchronization of an asynchronous remote replication consistency group. **The value is described as follows:** Delivery by week: {"WEEK": {"WEEKDAY":"[0,1,2,3,4,5,6]","TIME":"11:00"} }. Delivery by day: {"DAY":"01:00"}. Delivery by hour: {"HOUR":"9"}. **Note:**This parameter is returned when the replication mode is asynchronous.

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Parameter	Mandatory/ Conditional	Type	Description
asyncToSyncBand-width	Conditional	string(uint32)	Host bandwidth when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..10485760 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.
transferCycle	Conditional	string(uint32)	Duration during which the automatic switchover condition is met when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..1440 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
syncToAsynclatency	Conditional	string(uint32)	Host latency when synchronous replication switches to asynchronous replication. **The value is described as follows:** 1..5000 **Note:**This field is returned whether synchronous remote replication automatically switches to asynchronous remote replication.
asyncToSyncLatency	Conditional	string(uint32)	Host latency when asynchronous remote replication restores to synchronous remote replication. **The value is described as follows:** 1..5000 **Note:**This field is returned whether asynchronous remote replication automatically restores to synchronous remote replication.
syncToAsyncBand-width	Conditional	string(uint32)	Host bandwidth when synchronous replication switches to asynchronous replication. **The value is described as follows:** 1..10485760 **Note:**This field is returned whether synchronous remote replication automatically switches to asynchronous remote replication.

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Parameter	Mandatory/ Conditional	Type	Description
switchToSync	Mandatory	string(enum)	Whether asynchronous remote replication automatically restores to synchronous remote replication. **The value is described as follows:** 1: open 0: close
switchToAsync	Mandatory	string(enum)	Whether synchronous remote replication automatically switches to asynchronous remote replication. **The value is described as follows:** 1: open 0: close
resourceSubtype	Mandatory	enum	Resource subtype. **The value is described as follows:** 0: common LUN 1: VVol LUN
syncSnapPolicy	Mandatory	enum	User snapshot synchronization policy. **The value is described as follows:** 0:"NOT_SYNC_SNAP": User snapshots are not synchronized. 1:"SAME_AS_SOURCE" : Snapshots on the secondary storage system must be the same as those on the primary storage system. 2:"USER_SNAP_RETENTION_NUM": A specified number of user snapshots are retained on the secondary storage system.

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Parameter	Mandatory/ Conditional	Type	Description
userSnapRetention-Num	Conditional	uint32	Number of retained user snapshots on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when the user snapshot synchronization policy is that a specified number of user snapshots are retained on the secondary storage system.
copySnapRetention-Num	Conditional	uint32	Number of copy snapshots retained on the secondary storage system. **The value is described as follows:** 1~512 **Note:**This parameter is returned when the snapshot retention policy of the secondary storage system is that a specified number of copy snapshots are retained at the secondary storage system. This parameter is not supported in this version.
remoteArrayID	Mandatory	uint32	Specifies the ID of the remote storage array. **The value is described as follows:** 0 to 64.

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Parameter	Mandatory/ Conditional	Type	Description
backupCopyPolicy	Conditional	enum	Retention policy of copy snapshots on the secondary storage system. **The value is described as follows:** 0:"NO_RETENTION": Copy snapshots are not retained on the secondary storage system. 1:"COPY_SNAP_RETENTION_NUM": A specified number of copy snapshots are retained on the secondary storage system. **Note:**This parameter is not supported in this version.

Example

- Querying a remote replication consistency group.

```
Request: GET /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/4846fb8ca15c0000

Response: {
   "data": {
      "COMPRESSVALID": "false",
      "DESCRIPTION": "",
      "DRRINGID": "--",
      "ENABLECOMPRESS": "false",
      "ENDTIME": "-1",
      "HEALTHSTATUS": "1",
      "ID": "2100845b12719eb00000000300000003",
      "ISEMPTY": "false",
      "ISPRIMARY": "true",
      "NAME": "cg_rep_A_PG0002581",
      "RECOVERYPOLICY": "1",
      "REMTIMEOUTPERIOD": "255",
      "REPLICATIONMODEL": "2",
      "RUNNINGSTATUS": "23",
      "SPEED": "2",
      "STARTTIME": "1642689603",
      "SYNCHRONIZETYPE": "1",
      "TYPE": 221,
      "bandwidth": "-1",
      "cg_type": "0",
      "localPgName": "PG0002",
      "localpgId": "1",
      "remoteArrayID": "0",
      "remoteVstoreId": "2",
      "resourceSubtype": "0",
      "rmtPgName": "PG0002",
```

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```
        "rmtpgId": "5",
        "switchToAsync": "0",
        "switchToSync": "0",
        "syncSnapPolicy": "0",
        "vstoreId": "2",
        "vstoreName": "test"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.3.4.3 Interface for Querying Available Consistency Groups

Function

This interface is used to query the remote replication consistency groups which can be used as members of the DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/get_available_cg

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
consistencyGroupID	Mandatory	string	ID of a HyperMetro or synchronous remote replication consistency group.
consistencyGroupType	Mandatory	enum	Type of the consistency group. **The value is described as follows:** 1: HyperMetro consistency group 2: synchronous consistency group
otherRmCgID	Optional	string	ID of the other remote replication consistency group.
remoteDeviceWWN	Mandatory	string	WWN of the remote device at the third-party site.

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Result

Parameter	Mandatory/ Conditional	Type	Description
availableCGID	Mandatory	string	IDs of remote replication consistency groups which can be used as members of the DR Star trio.

Example

- Querying available remote replication consistency groups which can be used as members of the DR Star trio.

```
Request: GET /deviceManager/rest/2102350AFH10H6000257/get_available_cg?
remoteDeviceWWN=2100ad0203040506&consistencyGroupType=1&consistencyGroupID=21002102030
405060000000100000000

Response: {
"data":
   {
      "availableCGID": "2100210203040506000000300000001"
   }
 "error":{
   "code":0,
   "description":"0"
 }
}
```

2.9.3.4.4 Interface for Querying the Number of Consistency Groups of Remote Replication

Function

This interface is used to query the number of remote replication consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, REPLICATIONMODEL, ISPRIMARY, DRRINGID, and resourceSubtype are supported.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried remote replication consistency groups.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 221: consistency group

Example

- Querying the number of remote replication consistency groups.

```
Request: GET /deviceManager/rest/1016964156/CONSISTENTGROUP/count

Response: {
   "data": {
      "COUNT": "4",
      "TYPE": 221
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.3.5 Others

2.9.3.5.1 Interface for Disabling Secondary Resource Protection for a Consistency Group of Remote Replication

Function

This interface is used to disable secondary resource protection fro a consistency group of remote replication.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SECRESACCESS	Mandatory	enum	Read/write setting for a secondary LUN, used to set disabling write protection for the secondary LUN. **The value is described as follows:** 3: read/write
ID	Mandatory	string	Remote replication consistency group ID.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Disabling secondary resource protection fro a consistency group of remote replication.

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```
Request: PUT /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/4846fb8c15c0001
{
    "SECRESACCESS": "3"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.5.2 Interface for Enabling Secondary Resource Protection for a Consistency Group of Remote Replication

Function

This interface is used to enable secondary resource protection for a consistency group of remote replication.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CONSISTENTGROUP/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SECRESACCESS	Mandatory	enum	Read/write setting for a secondary LUN, used to set enabling write protection for the secondary LUN. **The value is described as follows:** 2: read-only
ID	Mandatory	string	Remote replication consistency group ID.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Enabling secondary resource protection for a consistency group of remote replication.

```
Request: PUT /deviceManager/rest/210235843910E6000009/CONSISTENTGROUP/4846fb8c15c0001
{
    "SECRESACCESS": "2"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.5.3 Interface for Performing a Primary_Secondary Switchover on a Consistency Group of Remote Replication

Function

This interface is used to perform primary_secondary switchover for remote replication consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SWITCH_GROUP_ROLE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.

Result

N/A

Example

- Performing primary_secondary switchover for remote replication consistency groups.

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```
Request: PUT /deviceManager/rest/210235843910E6000009/SWITCH_GROUP_ROLE
{
    "ID": "4846fb8ca15c0000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.5.4 Interface for Splitting a Consistency Group of Remote Replication

Function

This interface is used to split a remote replication consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SPLIT_CONSISTENCY_GROUP

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Splitting a remote replication consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/SPLIT_CONSISTENCY_GROUP
{
    "ID": "4846fb8ca15c0000"
}

Response:
```

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```
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.3.5.5 Interface for Synchronizing a Consistency Group of Remote Replication

Function

This interface is used to synchronize remote replication consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SYNCHRONIZE_CONSISTENCY_GROUP

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote replication consistency group ID.
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Synchronizing remote replication consistency groups.

```
Request: PUT /deviceManager/rest/210235843910E6000009/SYNCHRONIZE_CONSISTENCY_GROUP
{
    "ID": "4846fb8ca15c0000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.4 remote_device

2.9.4.1 Add

2.9.4.1.1 Interface for Adding FC Links for Remote Devices

Function

This interface is used to add FC links for remote devices.

HighRisk

You are about to add a remote device link.

Before performing this operation, check whether the local port and remote port connected by the link are host service ports. If yes, the replication link may disconnect.

Suggestion: Before performing this operation, plan the network and ensure that the local port and remote port connected by the link are not host service ports.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_link/add_fclink_to_remote_device

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	FC link ID.

Result

N/A

Example

- Adding FC links for remote devices.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fc_link/add_fclink_to_remote_device

{
```

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```
    "ID":"1"
}

Response:
{
    "data":{}
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.4.1.2 Interface for Adding iSCSI Links for Remote Devices

Function

This interface is used to add iSCSI links for remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_link

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DEVICEID	Mandatory	string	Remote device ID.
IP	Mandatory	string	Remote IP.
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
RECOVERY_POLICY	Mandatory	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
PORT	Mandatory	string	Remote port.

Result

Parameter	Mandatory/Conditional	Type	Description
DEVICEID	Mandatory	string	Remote device ID.

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Parameter	Mandatory/ Conditional	Type	Description
IP	Mandatory	string	Remote IP.
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
PORT	Mandatory	string(uint32)	Remote port.
RECOVERY_POLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
ID	Mandatory	string	Link ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: fault
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: disabled 101: connecting
REMOTECONTROLID	Conditional	string	Remote controller ID. **Note:**This field must be returned if the vendor is Huawei.
REMOTEPORTID	Conditional	string	Remote port ID. **Note:**This field must be returned if the vendor is Huawei.
TARGETNAME	Conditional	string	iSCSI target name. **Note:**This field must be returned if the vendor is Huawei.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if Restricted bandwidth switch is open.
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is open.
ARRAYTYPE	Mandatory	string(enum)	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneity device 3: unknown device
BANDWIDTHLIMITSIZE	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if Restricted bandwidth switch is open.
BANDWIDTHLIMITS-WITCH	Conditional	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open **Note:**This field must be returned if Restricted bandwidth switch is open.

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Parameter	Mandatory/ Conditional	Type	Description
INITIATORNAME	Conditional	string	iSCSI initiator name. **Note:**This field must be returned if the vendor is Huawei.
ENABLECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: yes false: no
LINKUSAGE	Mandatory	string(bool)	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 243: iSCSI link

Example

- Adding iSCSI links for remote devices.

```
Request: POST /deviceManager/rest/210235843910E6000009/iscsi_link

{
   "DEVICEID": "1",
   "IP": "100.130.242.202",
   "LOCALCONTROLID": "0A",
   "LOCALPORTID": "131328",
   "RECOVERY_POLICY": 1 ,
   "PORT":"3260"
}

Response:
{
   "data": {
      "ARRAYTYPE": "1",
      "BANDWIDTHLIMITSWITCH": "0",
      "DEVICEID": "0",
      "ENABLECHAP": "false",
      "HEALTHSTATUS": "1",
      "ID": "257",
      "INITIATORNAME": "iqn.2006-08.com.huawei:oceanstor:2100e4c2d1eaf02c::1",
      "IP": "10.10.10.110",
      "LINKUSAGE": "true",
      "LOCALCONTROLID": "0B",
      "LOCALPORTID": "549772722432",
      "PORT": "3260",
```

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```
        "RECOVERY_POLICY": "1",
        "REMOTECONTROLID": "0A",
        "REMOTEPORTID": "CTE0.R4.IOM0.P0",
        "RUNNINGSTATUS": "10",
        "TARGETNAME": "iqn.2006-08.com.huawei:oceanstor:2100111545326912::20400:10.10.10.110",
        "TYPE": 243
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.1.3 Interface for Adding Members to a Replication Port Group

Function

This interface is used to add members to a replication port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/repportgroup/add

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Specifies the name of a replication port group. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31 **Note:**Either NAME or ID must be specified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	ID of a replication port group. **The value is described as follows:** The value contains only digits and ranges from 0 to 4095. **Note:**Either NAME or ID must be specified.
ETH_LOGICAL_PORT_LIST	Optional	string	Logical port list.
FC_PORT_LIST	Optional	string	Fibre Channel port list.

Result

N/A

Example

- Adding a member to a port group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/repportgroup/add
{
    "NAME": "port_group_name",
    "ID": "1",
    "ETH_LOGICAL_PORT_LIST": "p1,p2",
    "FC_PORT_LIST": "CTE0.A2.P0,CTE0.A2.P1"
}

Response: {
    error: {
        code: 0,
        description: "0"
    }
}
```

2.9.4.1.4 Interface for Creating a Replication Port Group

Function

This interface is used to create a replication port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/repportgroup

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Specifies the name of a replication port group. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
ID	Optional	string	ID of a replication port group. **The value is described as follows:** Only digits ranging from 0 to 4095 are supported.
ETH_LOGICAL_PORT_LIST	Optional	string	Logical port list.
FC_PORT_LIST	Optional	string	Fibre Channel port list.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of a replication port group.
NAME	Mandatory	string	Specifies the name of a replication port group.

Example

- Creating a replication port group.

```
Request: POST /deviceManager/rest/210235843910E6000009/repportgroup
{
    "NAME": "new_port_group",
    "ID": "1",
    "ETH_LOGICAL_PORT_LIST": "p1,p2",
    "FC_PORT_LIST": "CTE0.A2.P0,CTE0.A2.P1"
}
```

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```
Response: {
    data: {
        "ID: "",
        "NAME: "new_port_group",
    },
    error: {
        code: 0,
        description: "0"
    }
}
```

2.9.4.1.5 Interface for Creating a vStore and Remote device verification rule

Function

Create a rule for verifying tenants and remote devices.

URL

https://${ip}:${port}/api/v2/task/vstore_rule

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
localVstoreId	Mandatory	uint32	Tenant ID. **The value is described as follows:** 0..1023
remoteDeviceId	Optional	uint32	Remote device ID. **The value is described as follows:** 0~63 **Default:**4294967295
remoteVstoreId	Optional	uint32	Remote vStore ID. **The value is described as follows:** 0~1023 **Default:**4294967295

Result

N/A

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Example

- Create a rule for verifying tenants and remote devices.

```
Request:
POST /api/v2/task/vstore_rule
{
    "localVstoreId": “0”,
    "remoteDeviceId": “0”,
    "remoteVstoreId": “0”
}

Response:
{
    "result": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.4.1.6 Interface for Creating Remote Device

Function

This interface is used to create remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remotedevice

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ARRAYTYPE	Mandatory	enum	Remote device type. **The value is described as follows:** 1: replication device 4: cloud device
FCLINKID	Conditional	string	FC link ID. **Note:**Used to add FC links.
ISCSILINKLOCALCONTROLID	Conditional	string	Local controller ID of the iSCSI link. **Note:**Used to add iSCSI links.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISCSILINKLOCALPORTID	Conditional	string	Local port ID of the iSCSI link. **Note:**Used to add iSCSI links.
ISCSILINKREMOTEIP	Conditional	string	Peer IP address. **Note:**Used to add iSCSI/IP links.
ISCSILINKREMOTETCPPORT	Conditional	uint32	Remote port of the iSCSI link. **The value is described as follows:** 3260 **Note:**Used to add iSCSI links.
ISCSILINKRECOVERYPOLICY	Conditional	enum	iSCSI link recovery policy. **The value is described as follows:** 1: automatic 2: manual **Note:**Used to add iSCSI links.
ISCSILINK_REMOTEUSERNAME	Conditional	string	Remote array user name. **Length:**4~32 **Note:**This field must be delivered when you add a remote device of the replication type or adding a cloud device.
ISCSILINK_REMOTEPASSWORD	Conditional	string	Remote array password. **Length:**6~32 **Note:**This field must be delivered when you add a remote device of the replication type or adding a cloud device.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FASTWRITEENABLED	Optional		Enables immediate data or not. **The value is described as follows:** true: enables the function. false: disables the function. **Default:**true: enables the function. **Note:**Used to add iSCSI links.
LIF_PORT_NAME	Conditional		**Note:**None.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 224: remote device
ID	Mandatory	string	Remote device ID.
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
REMOTEUSERNAME	Mandatory	string	Remote array user name.

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Parameter	Mandatory/ Conditional	Type	Description
ARRAYTYPE	Mandatory	string(enum)	Identifies the type of the remote device. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device 4: cloud replication device
COMPRESSALGORITHM	Mandatory	string(enum)	Compression algorithm used between arrays. **The value is described as follows:** 0: fast compression 1: deep compression
COMPRESSALGVALID	Mandatory	string(bool)	Indicates whether the compression computing has taken effect. **The value is described as follows:** true: yes false: no
COMPRESSJUDGE	Mandatory	string(bool)	Indicates whether compression prejudging is enabled in the data transmission between arrays. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
CONSULTSTATUS	Conditional	string(enum)	Negotiation status of data transmission. **The value is described as follows:** 0: key negotiation failed 1: key negotiation succeeded 2: encryption transmission not supported **Note:**This field is returned for heterogeneous devices.
COMPRESSSTATUS	Conditional	string(bool)	Status of data compression transmission. **The value is described as follows:** false: not supported true: supported **Note:**This field is returned for heterogeneous devices.
DESCRIPTION	Mandatory	string	Description.
DEVICEMODEL	Conditional	string	Remote device model. **Note:**This field is returned for heterogeneous devices.
ENABLEENCRYPT	Conditional	string(bool)	Indicates whether data transmission encryption is enabled. **The value is described as follows:** true: yes false: no **Note:**This field is returned for heterogeneous devices.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: link up 11: link down 31: disabled 101: connecting
SN	Mandatory	string	Device serial number.
SERVICETYPE	Conditional	string(enum)	Identifies the service type. **The value is described as follows:** 0: all 1: LUN copy 2: remote replication **Note:**This field is returned for heterogeneous devices.
VENDOR	Mandatory	string	Vendor.
WWN	Mandatory	string	Unique device identifier.
REMOTE_REP_PORT_GROUP_ID	Mandatory	string(uint32)	Local replication port group ID.
LOCAL_REP_PORT_GROUP_ID	Mandatory	string(uint32)	Remote replication port group ID.

Example

- Creating remote devices.

```
Request: POST /deviceManager/rest/210235843910E6000009/remotedevice
{
    "ARRAYTYPE": 1,
    "FCLINKID": "0",
    "ISCSILINK_REMOTEPASSWORD": "huawei@123",
    "ISCSILINK_REMOTEUSERNAME": "huawei"
}

Response:
{
    "data": {
        "ARRAYTYPE": "224",
        "ID": "0",
        "NAME": "Huawei.Storage"
    },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.4.2 Delete

2.9.4.2.1 Interface for Deleting a Replication Port Group

Function

This interface is used to delete a replication port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/repportgroup/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Replication port group ID. **The value is described as follows:** The value ranges from 0 to n minus one. n indicates the maximum number of replication port groups.

Result

N/A

Example

- Deleting a replication port group whose ID is 1.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/repportgroup/1

Response:
{
    "data": {},
    "error": {
    "code": 0,
```

```
    "description": "0"
    }
}
```

2.9.4.2.2 Interface for Deleting Remote Device

Function

This interface is used to delete remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_device/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote device ID.
AUTO_FREE_REP_PORT_GROUP	Optional	enum	If you select Yes, the port group is automatically deleted when you delete the remote device and the port group is not used by any remote device. **The value is described as follows:** Only yes or no is supported. **Default:**yes

Result

N/A

Example

- Deleting remote devices.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/remote_device/123

Response:
{
    "data":{},
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.4.2.3 Interface for Removing Members from a Replication Port Group

Function

This interface is used to remove members from a replication port group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/repportgroup/remove

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Specifies the name of a replication port group. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31 **Note:**Either NAME or ID must be specified.
ID	Conditional	string	ID of a replication port group. **The value is described as follows:** The value contains only digits and ranges from 0 to 4095. **Note:**Either NAME or ID must be specified.
ETH_LOGICAL_PORT_LIST	Optional	string	Logical port list.
FC_PORT_LIST	Optional	string	Fibre Channel port list.

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Result

N/A

Example

- Removing a member from a port group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/repportgroup/remove
{
    "NAME": "port_group_name",
    "ID": "1",
    "ETH_LOGICAL_PORT_LIST": "p1,p2",
    "FC_PORT_LIST": "CTE0.A2.P0,CTE0.A2.P1"
}

Response: {
    error: {
        code: 0,
        description: "0"
    }
}
```

2.9.4.3 Modify

2.9.4.3.1 Interface for Modifying Remote Device Information

Function

This interface is used to modify information about remote devices.

HighRisk

You are about to enable bandwidth control for the remote device.

This operation will control the bandwidth of background I/Os sent by the local storage array. If the threshold is too low, the replication duration may be long or replication services may be interrupted.

Suggestion: Before performing this operation, ensure that the set bandwidth upper limit meets the background I/O bandwidth requirements of replication services.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_device/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote device ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Remote device name. **The value is described as follows:** The value cannot be left blank and contains only letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31 **Note:**This field must be delivered when a heterogeneous remote device is used.
REMOTEUSERNAME	Optional	string	Remote array user name. **Length:**4~32 **Note:**Used for replication devices or cloud devices.
REMOTEPASSWORD	Conditional	string	Remote array password. **Length:**6~32 **Note:**This field is mandatory for changing the user name and password.
COMPRESSALGORITHM	Optional	enum	Compression algorithm used between storage arrays. **The value is described as follows:** 0: high performance 1: high compression ratio **Note:**Used for replication devices or cloud devices.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BANDWIDTHSWITCH	Optional	enum	Whether to enable flow control on the remote device. When this function is enabled, the total bandwidth occupied by background I/Os sent by the local storage array is controlled. **The value is described as follows:** The options are as follows: 1:"ON": enables bandwidth control. 0:"OFF": disables bandwidth control.
BANDWIDTHVALUE	Conditional	uint32	Link bandwidth. **The value is described as follows:** 1024..104857600 **Note:**When bandwidth_switch is set to ON, this parameter is valid. When bandwidth_switch is set to OFF, this parameter is invalid.
FCLINKID	Optional	string	FC link ID. **Note:**Used to add FC links.
ISCSILINKLOCALCONTROLID	Optional	string	Local controller ID of the iSCSI link. **Note:**Used to add iSCSI links.
ISCSILINKLOCALPORTID	Optional	string	Local port ID of the iSCSI link. **Note:**Used to add iSCSI links.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISCSILINKREMOTEIP	Optional	string	Peer IP address. **Note:**Used to add iSCSI/IP links.
ISCSILINKREMOTETCPPORT	Optional	uint32	Remote port of the iSCSI link. **The value is described as follows:** 3260 **Note:**Used to add iSCSI links.
ISCSILINKRECOVERY-POLICY	Optional	enum	iSCSI link recovery policy. **The value is described as follows:** 1: automatic 2: manual **Note:**Used to add iSCSI links.
ISCSILINK_REMOTEUSERNAME	Conditional	string	Remote array user name. **Length:**4~32 **Note:**This field must be delivered when you add a remote device of the replication type or adding a cloud device.
ISCSILINK_REMOTEPASSWORD	Conditional	string	Remote array password. **Length:**6~32 **Note:**This field must be delivered when you add a remote device of the replication type or adding a cloud device.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FASTWRITEENABLED	Optional		Enable immediate data or not. **The value is described as follows:** true: enables the function. false: disables the function. **Default:**true: enables the function. **Note:**Used to add iSCSI links.
LIF_PORT_NAME	Optional	string	Port name of an IP link. **Note:**None.
LOCAL_REP_PORT_GROUP_ID	Optional	string	Local replication port group ID. **Note:**None.
REMOTE_REP_PORT_GROUP_ID	Optional	string	Remote replication port group ID.
NET_ISOLATION	Optional	enum	Specifies whether to enable the remote device alarm isolation function. **The value is described as follows:** The options are as follows: 1:"ON": enables alarm isolation. 0:"OFF": disables alarm isolation.

Result

N/A

Example

- Modifying remote devices.

```
Request: PUT /deviceManager/rest/210235843910E6000009/remote_device/123
{
   "COMPRESSALGORITHM": "1",
```

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```
    "REMOTEPASSWORD": "Admin@123",
    "REMOTEUSERNAME": "admin"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Enable the alarm isolation function for the remote device whose ID is 0.

```
Request: PUT /deviceManager/rest/210235843910E6000009/remote_device/0
{
    "NET_ISOLATION": "1",
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.4.4 Query

2.9.4.4.1 Interface for Batch Querying FC Link Information

Function

Batch querying FC link information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_link

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, RUNNINGSTATUS, and HEALTHSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned. When any one of the parameters "DEVICEID", "LINKUSAGE", and "ARRAYTYPE" is delivered, the parameter "range" must be delivered.
DEVICEID	Optional	string	Remote device ID.
LINKUSAGE	Conditional	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no **Note:**Used for replication remote devices. When "DEVICEID" is delivered, the parameter "LINKUSAGE" must be delivered.
ARRAYTYPE	Optional	enum	Device type. **The value is described as follows:** 2: heterogeneous device 3: unknown device **Note:**Used for heterogeneous remote devices.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ARRAYTYPE	Mandatory	enum	Device type. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device
DEVICEID	Mandatory	string	Remote device ID.
DEVICENAME	Mandatory	string	Remote device name.
DEVICEWWN	Mandatory	string	Remote device WWN.
FCLINKLOCALPORTWWPN	Mandatory	string	Local port WWPN of the FC link.
FCLINKREMOTEPORTWWPN	Mandatory	string	Remote port WWPN of the FC link.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: normal 2: faulty
ID	Mandatory	string	Link ID.
LINKUSAGE	Mandatory	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
REMOTECONTROLID	Mandatory	string	Remote controller ID.
REMOTEPORTID	Mandatory	string	Remote port ID.
REMOTESN	Mandatory	string	Remote device SN.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 225: FC link
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 10: link up 11: link down 31: disabled 101: connecting
DEVICEMODEL	Mandatory	string	Remote device model.
VENDOR	Mandatory	string	Manufacturer.
BANDWIDTHLIMITS-WITCH	Mandatory	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open
BANDWIDTHLIMITSIZE	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if the restricted bandwidth switch is open.
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if the restricted bandwidth switch is open.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Unit:**% **Note:**This field must be returned if the restricted bandwidth switch is open.
LUNNUM	Conditional	string(uint32)	Number of LUNs on the link. **Note:**This field is returned for heterogeneous remote devices.
REMOTELOGINTYPE	Conditional	string	Remote array login type. **Note:**This field is returned for heterogeneous remote devices.
REMOTEUSERNAME	Conditional	string	Remote array username. **Note:**This field is returned for heterogeneous remote devices.
localPortLocation	Mandatory	string	Location of the local port.

Example

- Batch querying FC link information.

```
Request: GET /deviceManager/rest/1016964156/fc_link?
DEVICEID=0&LINKUSAGE=true&filter=ID:0&range=[0-100]

Response: {
   "data": [
      {
         "ARRAYTYPE": "1",
         "BANDWIDTHLIMITSIZE": "1000000",
         "BANDWIDTHLIMITSWITCH": "1",
         "BANDWIDTHLIMITUNIT": "1",
         "BANDWIDTHLIMITUTILIZATION": "1",
         "DEVICEID": "0",
         "DEVICEMODEL": "--",
         "DEVICENAME": "Hua.Storage",
         "DEVICEWWN": "2100a1b2c3f4d5e6",
         "FCLINKLOCALPORTWWPN": "2011ff34c3ac1023",
         "FCLINKREMOTEPORTWWPN": "2019a1b2c3f4d5e6",
         "HEALTHSTATUS": "1",
```

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```
            "ID": "256",
            "LINKUSAGE": "true",
            "LOCALCONTROLID": "0B",
            "LOCALPORTID": "281474994601985",
            "REMOTECONTROLID": "0B",
            "REMOTEPORTID": "CTE0.B.IOM1.P1",
            "REMOTESN": "21023598251008987654",
            "RUNNINGSTATUS": "10",
            "TYPE": 225,
            "VENDOR": "--",
            "localPortLocation": "CTE0.A.IOM3.P0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.4.2 Interface for Batch Querying IP Link Information

Function

This interface is used to batch query IP link information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iplink

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, RUNNINGSTATUS, and HEALTHSTATUS are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned. When any one of the parameters "DEVICEID", "LINKUSAGE", and "ARRAYTYPE" is delivered, the parameter "range" must be delivered.
DEVICEID	Optional	string	Remote device ID.
LINKUSAGE	Conditional	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no **Note:**Used for replication remote devices or cloud devices. When "DEVICEID" is delivered, the parameter "LINKUSAGE" must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ARRAYTYPE	Optional	enum	Device type. **The value is described as follows:** 2: heterogeneous device 3: unknown device **Note:**Used for heterogeneous remote devices.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 20486: IP link
ID	Mandatory	string	Link ID.
LOCALCONTROLID	Mandatory	string	Local controller ID.
IP	Mandatory	string	Remote IP address.
DEVICEID	Mandatory	string	Remote device ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: Disabled 101: Connecting
REMOTECONTROLID	Mandatory	string	Remote controller ID.

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Parameter	Mandatory/ Conditional	Type	Description
LINKUSAGE	Mandatory	string(bool)	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
DEVICENAME	Mandatory	string	Remote device name.
LOCALIP	Mandatory	string	**The value is described as follows:** Indicates the IP address.
REMOTEPORTNAME	Mandatory	string	**The value is described as follows:** Name of a remote port.
LOCALPORTNAME	Mandatory	string	**The value is described as follows:** Name of the local port.

Example

- Batch querying IP link information.

```
Request: GET /deviceManager/rest/2102350FJF10F7000013/iplink?
DEVICEID=0&LINKUSAGE=true&range=%5B0-100%5D

Response: {
   "data": {
      "DEVICEID": "1",
      "DEVICENAME": "A",
      "HEALTHSTATUS": "2",
      "ID": "65792",
      "IP": "10.10.10.143",
      "LINKUSAGE": "true",
      "LOCALCONTROLID": "0B",
      "LOCALIP": "10.10.47.1",
      "LOCALPORTNAME": "10.10.47.1",
      "REMOTECONTROLID": "0A",
      "REMOTEPORTNAME": "10.10.47.3",
      "RUNNINGSTATUS": "11",
      "TYPE": 20486
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.4.4.3 Interface for Batch Querying iSCSI Link Information

Function

This interface is used to batch query information about iSCSI links.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_link

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, HEALTHSTATUS and RUNNINGSTATUS are supported.
range	Optional	string	Search scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
DEVICEID	Optional	string	Remote device ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
LINKUSAGE	Optional	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no **Note:**Used for replication remote device or cloud device.
ARRAYTYPE	Optional	enum	Device Type. **The value is described as follows:** 2: heterogeneity device 3: unknown device **Note:**Used for heterogeneous remote device.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 243: iSCSI link
ID	Mandatory	string	Link ID.
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
IP	Mandatory	string	Remote IP.
PORT	Mandatory	string(uint32)	Remote port.
RECOVERY_POLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual

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Parameter	Mandatory/ Conditional	Type	Description
DEVICEID	Mandatory	string	Remote device ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: fault
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: disabled 101: connecting
REMOTECONTROLID	Mandatory	string	Remote controller ID.
REMOTEPORTID	Mandatory	string	Remote port ID.
TARGETNAME	Mandatory	string	iSCSI target name.
BANDWIDTHLIMITS-WITCH	Mandatory	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open
BANDWIDTHLIMITSIZE	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is open.
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is open.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is open.
ARRAYTYPE	Mandatory	string(enum)	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneity device 3: unknown device 4: cloud device
INITIATORNAME	Mandatory	string	iSCSI initiator name.
LINKUSAGE	Mandatory	string(bool)	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
ENABLECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: yes false: no
VENDOR	Mandatory	string	Vendor.
DEVICEMODEL	Mandatory	string	Remote device type.
DEVICENAME	Mandatory	string	Remote device name.
LOCALIP	Mandatory	string	Local IP.
LOCALISID	Mandatory	string	Initiator session ID.
REMOTESN	Mandatory	string	Remote Device SN.
REMOTETGPT	Mandatory	string	Target session identifying handle.
REMOTEWWN	Mandatory	string	Remote device WWN.

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Parameter	Mandatory/ Conditional	Type	Description
CHAPUSER	Conditional	string	CHAP name. **Note:**This field is returned for heterogeneous remote device.
LUNNUM	Conditional	string(uint32)	Number of lun on the link. **Note:**This field is returned for heterogeneous remote device.
REMOTELOGINTYPE	Conditional	string	Remote array login type. **Note:**This field is returned for heterogeneous remote device.
REMOTEUSERNAME	Conditional	string	Remote array username. **Note:**This field is returned for heterogeneous remote device.
FASTWRITEENABLED	Conditional	string(bool)	Enable immediate data or not. **The value is described as follows:** true : enable false : disable **Note:**This field is returned for replication remote device or cloud device.

Example

- Batch querying iSCSI link information.

```
Request: GET /deviceManager/rest/2102350FJF10F7000013/iscsi_link?
DEVICEID=1&LINKUSAGE=true&filter=ID: 65792&range=[0-100]

Response:
{
   "data": [
      {
         "ARRAYTYPE": "1",
```

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```
            "BANDWIDTHLIMITSIZE": "1000000",
            "BANDWIDTHLIMITSWITCH": "1",
            "BANDWIDTHLIMITUNIT": "1",
            "BANDWIDTHLIMITUTILIZATION": "1",
            "DEVICEID": "0",
            "DEVICEMODEL": "--",
            "DEVICENAME": "Huawei.Storage",
            "ENABLECHAP": "false",
            "FASTWRITEENABLED": "false",
            "HEALTHSTATUS": "1",
            "ID": "0",
            "INITIATORNAME": "iqn.2006-08.com.huawei:oceanstor:2100ff34c3ac1023::0",
            "IP": "8.47.17.92",
            "LINKUSAGE": "true",
            "LOCALCONTROLID": "0A",
            "LOCALIP": "8.47.17.90",
            "LOCALISID": "--",
            "LOCALPORTID": "131072",
            "PORT": "3260",
            "RECOVERY_POLICY": "1",
            "REMOTECONTROLID": "0A",
            "REMOTEPORTID": "CTE0.A.IOM0.P0",
            "REMOTESN": "21023598251008987654",
            "REMOTETGPT": "--",
            "REMOTEWWN": "2100a1b2c3f4d5e6",
            "RUNNINGSTATUS": "10",
            "TARGETNAME": "iqn.2006-08.com.huawei:oceanstor:2100a1b2c3f4d5e6::20000:8.47.17.92",
            "TYPE": 243,
            "VENDOR": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.4.4 Interface for Batch Querying Remote Device Information

Function

This interface is used to batch query information about remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_device

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, RUNNINGSTATUS, ARRAYTYPE, and HEALTHSTATUS are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 224: remote device
ID	Mandatory	string	Remote device ID.
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: faulty 14: invalid

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: link up 11: link down 31: disabled 101: connecting
DESCRIPTION	Mandatory	string	Description.
WWN	Mandatory	string	Unique device identifier.
SN	Mandatory	string	Device serial number.
ARRAYTYPE	Mandatory	string(enum)	Identifies the type of the remote device. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device 4: cloud replication device
SERVICETYPE	Mandatory	string(enum)	Identifies the service type. **The value is described as follows:** 0: all 1: LUN copy 2: remote replication **Note:**Used for replication devices.
LINKNUM	Mandatory	string(uint32)	Number of links to the remote device.
DEVICEMODEL	Mandatory	string	Remote device model.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEENCRYPT	Mandatory	string(bool)	Whether data transmission encryption is enabled. **The value is described as follows:** true: yes false: no
CONSULTSTATUS	Mandatory	string(enum)	Negotiation status of data transmission. **The value is described as follows:** 0: key negotiation failed 1: key negotiation succeeded 2: encryption transmission not supported
COMPRESSSTATUS	Mandatory	string(bool)	Status of data compression transmission. **The value is described as follows:** false: not supported true: supported
VENDOR	Mandatory	string	Vendor.
FCLINKNUM	Mandatory	string(uint32)	Number of Fibre Channel links.
ISCSILINKNUM	Mandatory	string(uint32)	Number of iSCSI links.
COMPRESSALGORITHM	Mandatory	string(enum)	Compression algorithm used between storage arrays. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSJUDGE	Mandatory	string(bool)	Whether compression prejudging for data transmission is enabled between storage arrays. **The value is described as follows:** true: enabled false: disabled
COMPRESSALGVALID	Mandatory	string(bool)	Whether compression calculation takes effect. **The value is described as follows:** true: yes false: no
remoteUsername	Mandatory	string	Remote storage array user name.
IPLINKNUM	Mandatory	string(uint32)	Number of links to the remote device.
REMOTE_REP_PORT_GROUP_ID	Conditional	string(uint32)	ID of the remote port group.
LOCAL_REP_PORT_GROUP_ID	Conditional	string(uint32)	ID of the local port group.

Example

- Batch querying information about remote devices.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_device?range=[0-100]

Response:
{
   "data": [
      {
         "ARRAYTYPE": "1",
         "COMPRESSALGORITHM": "0",
         "COMPRESSALGVALID": "false",
         "COMPRESSJUDGE": "true",
         "COMPRESSSTATUS": "false",
         "CONSULTSTATUS": "0",
         "DESCRIPTION": "",
         "DEVICEMODEL": "--",
         "ENABLEENCRYPT": "false",
         "FCLINKNUM": "0",
         "HEALTHSTATUS": "2",
         "ID": "0",
         "ISCSILINKNUM": "1",
         "LINKNUM": "1",
         "IPLINKNUM",
```

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```
            "NAME": "Huawei.Storage",
            "RUNNINGSTATUS": "11",
            "SERVICETYPE": "0",
            "SN": "2102350DJV10EC000001",
            "TYPE": 224,
            "VENDOR": "--",
            "WWN": "2100643e8c453ffa",
            "REMOTEUSERNAME": "huawei"
        },
        {
            "ARRAYTYPE": "1",
            "COMPRESSALGORITHM": "0",
            "COMPRESSALGVALID": "false",
            "COMPRESSJUDGE": "true",
            "COMPRESSSTATUS": "false",
            "CONSULTSTATUS": "0",
            "DESCRIPTION": "",
            "DEVICEMODEL": "--",
            "ENABLEENCRYPT": "false",
            "FCLINKNUM": "1",
            "HEALTHSTATUS": "14",
            "ID": "1",
            "ISCSILINKNUM": "0",
            "LINKNUM": "1",
            "IPLINKNUM",
            "NAME": "Huawei.Storage",
            "RUNNINGSTATUS": "31",
            "SERVICETYPE": "0",
            "SN": "456247AD4AD45235C481",
            "TYPE": 224,
            "VENDOR": "--",
            "WWN": "2100111545326912",
            "REMOTEUSERNAME": "huawei"
        },
        {
            "ARRAYTYPE": "2",
            "COMPRESSALGORITHM": "0",
            "COMPRESSALGVALID": "false",
            "COMPRESSJUDGE": "false",
            "COMPRESSSTATUS": "false",
            "CONSULTSTATUS": "0",
            "DESCRIPTION": "",
            "DEVICEMODEL": "XSG1             ",
            "ENABLEENCRYPT": "false",
            "FCLINKNUM": "0",
            "HEALTHSTATUS": "2",
            "ID": "513",
            "ISCSILINKNUM": "0",
            "LINKNUM": "0",
            "IPLINKNUM",
            "NAME": "HUAWEI_XSG1_513",
            "RUNNINGSTATUS": "11",
            "SERVICETYPE": "0",
            "SN": "65789AB65C7136CC98B5",
            "TYPE": 224,
            "VENDOR": "HUAWEI  ",
            "WWN": "--",
            "REMOTEUSERNAME": "huawei"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


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2.9.4.4.5 Interface for Querying a Single iSCSI Link Information

Function

This interface is used to query a iSCSI link information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_link/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Link ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 243: iSCSI link
ID	Mandatory	string	Link ID.
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
IP	Mandatory	string	Remote IP.
PORT	Mandatory	string(uint32)	Remote port.
RECOVERY_POLICY	Mandatory	string(enum)	Recovery policy.
DEVICEID	Mandatory	string	Remote device ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: fault

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: disabled 101: connecting
REMOTECONTROLID	Mandatory	string	Remote controller ID.
REMOTEPORTID	Mandatory	string	Remote port ID.
TARGETNAME	Mandatory	string	iSCSI target name.
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if Restricted bandwidth switch is open.
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is open.
ARRAYTYPE	Mandatory	string(enum)	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneity device 3: unknown device 4: cloud device
BANDWIDTHLIMITSIZ E	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if Restricted bandwidth switch is open.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITS-WITCH	Mandatory	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open
INITIATORNAME	Mandatory	string	iSCSI initiator name.
LINKUSAGE	Mandatory	string(bool)	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
ENABLECHAP	Mandatory	string(bool)	CHAP enabled or not. **The value is described as follows:** true: yes false: no
VENDOR	Mandatory	string	Vendor.
DEVICEMODEL	Mandatory	string	Remote device type.
DEVICENAME	Mandatory	string	Remote device name.
LOCALIP	Mandatory	string	Local IP.
LOCALISID	Mandatory	string	Initiator session ID.
REMOTESN	Mandatory	string	Remote Device SN.
REMOTETGPT	Mandatory	string	Target session identifying handle.
REMOTEWWN	Mandatory	string	Remote device WWN.
CHAPUSER	Conditional	string	CHAP name. **Note:**This field is returned for heterogeneous remote device.

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Parameter	Mandatory/ Conditional	Type	Description
LUNNUM	Conditional	string(uint32)	Number of lun on the link. **Note:**This field is returned for heterogeneous remote device.
REMOTELOGINTYPE	Conditional	string	Remote array login type. **Note:**This field is returned for heterogeneous remote device.
REMOTEUSERNAME	Conditional	string	Remote array username. **Note:**This field is returned for heterogeneous remote device.
FASTWRITEENABLED	Conditional	string(bool)	Enable immediate data or not. **The value is described as follows:** true : enable false : disable **Note:**This field is returned for replication remote device or cloud device.

Example

- Querying a iSCSI link information.

```
Request: GET /deviceManager/rest/2102350FJF10F7000013/iscsi_link/65792

Response:
{
 "data": {
  "ARRAYTYPE": "1",
  "BANDWIDTHLIMITSIZE": "101000",
  "BANDWIDTHLIMITSWITCH": "1",
  "BANDWIDTHLIMITUNIT": "1",
  "BANDWIDTHLIMITUTILIZATION": "35",
  "DEVICEID": "1",
  "ENABLECHAP": "false",
  "FASTWRITEENABLED": "false",
  "HEALTHSTATUS": "2",
  "ID": "65792",
  "INITIATORNAME": "iqn.2006-08.com.huawei:oceanstor:2100e4c2d1eaf02c::1",
```

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```
 "IP": "10.10.10.143",
 "LINKUSAGE": "true",
 "LOCALCONTROLID": "0B",
 "LOCALPORTID": "549772722432",
 "PORT": "3260",
 "RECOVERY_POLICY": "1",
 "REMOTECONTROLID": "0A",
 "REMOTEPORTID": "CTE0.A.IOM0.P1",
 "RUNNINGSTATUS": "11",
 "TARGETNAME": "iqn.2006-08.com.huawei:oceanstor:21004846fb8ca15d::20001:10.10.10.11",
 "TYPE": 243
},
"error": {
 "code": 0,
 "description": "0"
 }
}
```


2.9.4.4.6 Interface for Querying FC Link Information

Function

Query FC link information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_link/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	FC link ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ARRAYTYPE	Mandatory	enum	Device type. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device
DEVICEID	Mandatory	string	Remote device ID.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTESN	Conditional	string	Remote device SN. **Note:**This field is returned for heterogeneous remote devices.
VENDOR	Conditional	string	Manufacturer. **Note:**This field is returned for heterogeneous remote devices.
DEVICEMODEL	Conditional	string	Remote device type. **Note:**This field is returned for heterogeneous remote devices.
DEVICENAME	Mandatory	string	Remote device name.
DEVICEWWN	Mandatory	string	Remote device WWN.
FCLINKLOCALPORTWWPN	Mandatory	string	Local port WWPN of the FC link.
FCLINKREMOTEPORTWWPN	Mandatory	string	Remote port WWPN of the FC link.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: normal 2: faulty 14: invalid
ID	Mandatory	string	Link ID.
LINKUSAGE	Mandatory	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
REMOTECONTROLID	Mandatory	string	Remote controller ID.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEPORTID	Mandatory	string	Remote port ID.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 225: FC link
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: Disabled 101: Connecting
BANDWIDTHLIMITS-WITCH	Mandatory	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open
BANDWIDTHLIMITSIZE	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if the restricted bandwidth switch is open.
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if the restricted bandwidth switch is open.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Unit:**% **Note:**This field must be returned if the restricted bandwidth switch is open.
LUNNUM	Conditional	string(uint32)	Number of LUNs on the link. **Note:**This field is returned for heterogeneous remote devices.
REMOTELOGINTYPE	Conditional	string	Remote array login type. **Note:**This field is returned for heterogeneous remote devices.
REMOTEUSERNAME	Conditional	string	Remote array username. **Note:**This field is returned for heterogeneous remote devices.
localPortLocation	Mandatory	string	Location of the local port.

Example

- Query FC link information.

```
Request: GET /deviceManager/rest/1016964156/fc_link/0

Response: {
   "data": {
      "ARRAYTYPE": "1",
      "BANDWIDTHLIMITSWITCH": "0",
      "DEVICEID": "0",
      "DEVICENAME": "Huawei.Storage",
      "DEVICEWWN": "21001051720c8a61",
      "FCLINKLOCALPORTWWPN": "201030d17eb4f761",
      "FCLINKREMOTEPORTWWPN": "20081051720c8a61",
      "HEALTHSTATUS": "1",
      "ID": "0",
      "LINKUSAGE": "true",
      "LOCALCONTROLID": "0B",
      "LOCALPORTID": "549773705216",
      "REMOTECONTROLID": "0A",
      "REMOTEPORTID": "CTE0.A.IOM1.P0",
```

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```
        "RUNNINGSTATUS": "10",
        "TYPE": 225,
        "localPortLocation": "CTE0.A.IOM3.P0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.4.7 Interface for Querying Information About an IP Link

Function

This interface is used to query information about an IP link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ip_link/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	Link ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 20486: IP link
ID	Mandatory	string	Link ID.
LOCALCONTROLID	Mandatory	string	Local controller ID.
LOCALPORTID	Mandatory	string	Local port ID.
IP	Mandatory	string	Remote IP address.
RECOVERY_POLICY	Mandatory	string(enum)	Recovery policy.
DEVICEID	Mandatory	string	Remote device ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down 31: Disabled 101: Connecting
REMOTECONTROLID	Mandatory	string	Remote controller ID.
REMOTEPORTID	Mandatory	string	Remote port ID.
BANDWIDTHLIMITU-NIT	Conditional	string(uint32)	Restricted bandwidth unit. **The value is described as follows:** 0: Mbit/s 1: Kbit/s 2: Gbit/s **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is enabled.
BANDWIDTHLIMITU-TILIZATION	Conditional	string(uint32)	Bandwidth usage. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is enabled.
ARRAYTYPE	Mandatory	string(enum)	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device 4: cloud device

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHLIMITSIZE	Conditional	string(uint64)	Restricted bandwidth size. **Note:**This field must be returned if BANDWIDTHLIMITS-WITCH is enabled.
BANDWIDTHLIMITS-WITCH	Mandatory	string(uint32)	Restricted bandwidth switch. **The value is described as follows:** 0: close 1: open
LINKUSAGE	Mandatory	string(bool)	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no
VENDOR	Mandatory	string	Vendor.
DEVICEMODEL	Mandatory	string	Remote device type.
DEVICENAME	Mandatory	string	Remote device name.
LOCALIP	Mandatory	string	Local IP address.
REMOTESN	Mandatory	string	Remote device SN.
REMOTEWWN	Mandatory	string	Remote device WWN.
FASTWRITEENABLED	Conditional	string(bool)	Whether to enable FastWrite. **The value is described as follows:** true: enable false: disable **Note:**This field is returned for replication remote devices.

Example

- Querying information about an IP link.

```
Request: GET/deviceManager/rest/2102350FJF10F7000013/ip_link/65792Response: {
  "data": {
```

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```
        "ARRAYTYPE": "1",
        "BANDWIDTHLIMITSIZE": "101000",
        "BANDWIDTHLIMITSWITCH": "1",
        "BANDWIDTHLIMITUNIT": "1",
        "BANDWIDTHLIMITUTILIZATION": "35",
        "DEVICEID": "1",
        "ENABLECHAP": "false",
        "FASTWRITEENABLED": "false",
        "HEALTHSTATUS": "2",
        "ID": "65792",
        "INITIATORNAME": "iqn.2006-08.com.huawei:oceanstor:2100e4c2d1eaf02c::1",
        "IP": "10.10.10.143",
        "LINKUSAGE": "true",
        "LOCALCONTROLID": "0B",
        "LOCALPORTID": "549772722432",
        "PORT": "3260",
        "RECOVERY_POLICY": "1",
        "REMOTECONTROLID": "0A",
        "REMOTEPORTID": "CTE0.A.IOM0.P1",
        "RUNNINGSTATUS": "11",
        "TARGETNAME": "iqn.2006-08.com.huawei:oceanstor:21004846fb8ca15d::20001:10.10.10.11",
        "TYPE": 20486
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.4.8 Interface for Querying Remote Device Information

Function

This interface is used to query information about remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_device/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Remote device ID.

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 224: remote device
ID	Mandatory	string	Remote device ID.
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 14: Invalid
ARRAYTYPE	Mandatory	string(enum)	Identifies the type of the remote device. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device 4: cloud replication device
COMPRESSALGORITHM	Mandatory	string(enum)	Compression algorithm used between storage arrays. **The value is described as follows:** 0: rapid compression 1: deep compression
COMPRESSALGVALID	Mandatory	string(bool)	Whether compression calculation takes effect. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
COMPRESSJUDGE	Mandatory	string(bool)	Whether compression prejudging for data transmission is enabled between storage arrays. **The value is described as follows:** true: enabled false: disabled
CONSULTSTATUS	Conditional	string(enum)	Negotiation status of data transmission. **The value is described as follows:** 0: key negotiation failed 1: key negotiation succeeded 2: encryption transmission not supported **Note:**This field is returned for heterogeneous devices.
COMPRESSSTATUS	Conditional	string(bool)	Status of data compression transmission. **The value is described as follows:** false: not supported true: supported **Note:**This field is returned for heterogeneous devices.
DESCRIPTION	Mandatory	string	Description.
DEVICEMODEL	Conditional	string	Remote device model. **Note:**This field is returned for heterogeneous devices.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEENCRYPT	Conditional	string(bool)	Whether data transmission encryption is enabled. **The value is described as follows:** true: yes false: no **Note:**This field is returned for heterogeneous devices.
FCLINKNUM	Mandatory	string(uint32)	Number of Fibre Channel links.
ISCSILINKNUM	Mandatory	string(uint32)	Number of iSCSI links.
IPLINKNUM	Mandatory	string(uint32)	Number of IP links.
LINKNUM	Mandatory	string(uint32)	Number of links to the remote device.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: link up 11: link down 31: disabled 101: connecting
SN	Mandatory	string	Device serial number.
SERVICETYPE	Conditional	string(enum)	Identifies the service type. **The value is described as follows:** 0: all 1: LUN copy 2: remote replication **Note:**This field is returned for heterogeneous devices.
VENDOR	Mandatory	string	Vendor.
WWN	Mandatory	string	Unique device identifier.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTE_REP_PORT_GROUP_ID	Mandatory	string(uint32)	ID of the remote replication port group.
LOCAL_REP_PORT_GROUP_ID	Mandatory	string(uint32)	ID of the local replication port group.
REMOTEUSERNAME	Mandatory	string	Remote storage array user name.
DEVICESERIES	Mandatory	enum	Remote device series. **The value is described as follows:** 0: same series; 1: compatible series
NET_ISOLATION	Mandatory	string(enum)	Specifies whether to enable the remote device alarm isolation function. **The value is described as follows:** The options are as follows: 1:"ON": enables alarm isolation. 0:"OFF": disables alarm isolation. **Note:**The default value is 0, indicating that the function is disabled.
SUPPORTMC		enum	Indicates whether the remote device supports the message channel. **The value is described as follows:** 0: The message channel is not supported. 1: The message channel is supported.

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Parameter	Mandatory/ Conditional	Type	Description
BANDWIDTHSWITCH	Mandatory	string(enum)	Flow control bandwidth switch of a remote device. When this function is enabled, the total bandwidth occupied by background I/Os sent by the local storage array is controlled. **The value is described as follows:** The options are as follows: 1:"ON": enables bandwidth control. 0:"OFF": disables bandwidth control.
BANDWIDTHVALUE	Mandatory	uint32	Link bandwidth. **The value is described as follows:** 1024..104857600 **Note:**When bandwidth_switch is set to ON, this parameter is valid. When bandwidth_switch is set to OFF, this parameter is invalid.

Example

- Querying information about remote devices.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_device/0

Response: {
   "data": {
      "ARRAYTYPE": "1",
      "BANDWIDTHSWITCH": "false",
      "BANDWIDTHVALUE": "0",
      "COMPRESSALGORITHM": "1",
      "COMPRESSALGVALID": "true",
      "COMPRESSJUDGE": "false",
      "DEVICESERIES": "0",
      "DESCRIPTION": "",
      "FCLINKNUM": "4",
      "HEALTHSTATUS": "1",
      "ID": "0",
      "IPLINKNUM": "0",
```

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```
        "ISCSILINKNUM": "0",
        "LINKNUM": "4",
        "LOCAL_REP_PORT_GROUP_ID": "0",
        "NAME": "B",
        "NET_ISOLATION": "0",
        "REMOTEUSERNAME": "huawei",
        "REMOTE_REP_PORT_GROUP_ID": "0",
        "RUNNINGSTATUS": "10",
        "SN": "12334648111987654311",
        "SUPPORTMC": "1",
        "TYPE": 224,
        "VENDOR": "Huawei",
        "WWN": "21001233234e556d"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.4.4.9 Interface for Querying Replication Port Groups in Batches

Function

This interface is used to query replication port groups in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/repportgroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter for query. **The value is described as follows:** Parameters NAME and ID are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of a replication port group.
NAME	Mandatory	string	Specifies the name of a replication port group.

Example

- Querying replication port groups in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/repportgroup?range=[0-100]

Response: {
    data: {
        "ID: "",
        "NAME: "new_port_group",
    },
    error: {
        code: 0,
        description: "0"
    }
}
```

2.9.4.4.10 Interface for Querying the Number of FC Links

Function

Interface for querying the number of FC links.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fc_link/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, RUNNINGSTATUS and HEALTHSTATUS are supported.
DEVICEID	Optional	string	Remote device ID.
LINKUSAGE	Optional	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no **Note:**Used for replication remote device.
ARRAYTYPE	Optional	enum	Device Type. **The value is described as follows:** 2: heterogeneity device 3: unknown device **Note:**Used for heterogeneous remote device.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried FC links.

Example

- Querying the number of FC links.

```
Request: GET /deviceManager/rest/1016964156/fc_link/count?LINKUSAGE=true&filter=ID:0

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.4.4.11 Interface for Querying the Number of iSCSI Links

Function

This interface is used to query the number of iSCSI links.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/iscsi_link/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, HEALTHSTATUS and RUNNINGSTATUS are supported.
DEVICEID	Optional	string	Remote device ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
LINKUSAGE	Optional	bool	Identifies whether a link is added in the remote device. **The value is described as follows:** true: yes false: no **Note:**Used for replication remote device or cloud device.
ARRAYTYPE	Optional	enum	Remote device type. **The value is described as follows:** 2: heterogeneity device 3: unknown device **Note:**Used for heterogeneous remote device.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	string(int)	Number of queried iSCSI links.

Example

- Querying the number of iSCSI links.

```
Request: GET /deviceManager/rest/2102350FJF10F7000013/iscsi_link/count?
DEVICEID=1&LINKUSAGE=true&filter=HEALTHSTATUS: 2

Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.4.4.12 Interface for Querying the Number of Remote Devices

Function

This interface is used to query the number of remote devices.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_device/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, NAME, RUNNINGSTATUS, and HEALTHSTATUS are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried remote devices.

Example

- Querying the number of remote devices.

```
Request: GET /deviceManager/rest/1016964156/remote_device/count

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.4.5 Others

2.9.4.5.1 Interface for Checking Array Ability

Function

This interface is used to check array ability.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/check_array_ability/check_array_ability?ID=1

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	LUN ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
expandType	Mandatory	uint8	Capacity expansion type. **The value is described as follows:** 1: Capacity expansion is not allowed. 2: Single-end capacity expansion is supported. 3. Capacity expansion can be performed after remote replication and HyperMetro relationships are paused. 4: Capacity expansion can be performed without pausing remote replication and HyperMetro relationships.
supBatchOperate	Mandatory	uint8	Whether batch operations are supported. **The value is described as follows:** 0: Batch operations are not supported. 1: Batch operations are supported.

Example

- Checking array ability.

```
Request: GET deviceManager/rest/ST000000000000000012/check_array_ability/check_array_ability?ID=0
{
  "data": [
    {
      "expandType": "4",
      "supBatchOperate": "1"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
```

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```
 }
}
```

2.9.4.5.2 Interface for LUN Capacity Expansion Preparatory Checking

Function

This interface is used to perform capacity expansion pre-check for the LUN configured with remote replication and/or HyperMetro.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/LUN/lun_capacity_expansion_precheck?ID=1&onlyCheckExpandLocal=false

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	LUN ID. **The value is described as follows:** 0 to 65535.
remoteDeviceId	Optional	uint32	Remote device ID. **The value is described as follows:** 0 to 63.
onlyCheckExpandLocal	Mandatory	bool	Whether to perform pre-check in the CLI. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
expandType	Optional	uint8	Capacity expansion type. **The value is described as follows:** 1: Capacity expansion is not allowed. 2: Single-end capacity expansion is supported. 3. Capacity expansion can be performed after remote replication and HyperMetro relationships are paused. 4: Capacity expansion can be performed without pausing remote replication and HyperMetro relationships.
capacity	Optional	uint64	Expanded capacity.

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Result

Parameter	Mandatory/ Conditional	Type	Description
expandRemote	Mandatory	json	Multi-end capacity expansion check result. **The value is described as follows:** "supported": Whether the function is supported. 1: yes 0: no "needStopService": Whether remote replication and HyperMetro relationships are paused. 1: yes 0: no "stopMetroSide": Which end of the HyperMetro relationship is paused. 1: preferred site 0: non-preferred site "reason": reason why the function is not supported. 1: The version is incompatible. 2: The remote replication or HyperMetro feature of the LUN is in the invalid state. 3: The link is disconnected. 4: The replication feature of the LUN supports LUN migration. 5: The local or remote device is being upgraded and capacity

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Parameter	Mandatory/ Conditional	Type	Description
			expansion is allowed for a single end.
expandLocal	Mandatory	json	Single-end capacity expansion check result. **The value is described as follows:** "supported": Whether the function is supported. 1: yes 0: no "needStopService": Whether remote replication and HyperMetro relationships are paused. 1: yes 0: no "stopMetroSide": Which end of the HyperMetro relationship is paused. 1: preferred site 0: non-preferred site "reason": reason why the function is not supported. 1: The version is incompatible. 2: The remote replication or HyperMetro feature of the LUN is in the invalid state. 3: The link is disconnected.

Example

- Performing capacity expansion pre-check for the LUN.

```
Request: GET /deviceManager/rest/ST000000000000000012/LUN/lun_capacity_expansion_precheck?
ID=0&onlyCheckExpandLocal=false
```

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```
{
  "data": [
    {
      "expandLocal": "{\"supported\":\"1\", \"reason\":\"0\", \"needStopService\":\"0\", \"stopMetroSide
\":\"0\"}",
      "expandRemote": "{\"supported\":\"1\", \"reason\":\"0\", \"needStopService\":\"0\",
\"stopMetroSide\":\"0\"}"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.9.5 remote_resource

2.9.5.1 Add

2.9.5.2 Delete

2.9.5.3 Modify

2.9.5.4 Query

2.9.5.4.1 Interface for Batch Querying Remote LUN Information

Function

This interface is used to batch query remote LUNs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_lun

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Conditional	string	Query criteria. **The value is described as follows:** Parameters HEALTHSTATUS and CAPACITYBYTE are supported. **Note:**Either filter or range must be delivered.
range	Conditional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned. Either filter or range must be delivered.
RSSTYPE	Optional	enum	The LUN can be used as a remote LUN for remote replication or HyperMetro. **The value is described as follows:** 13: REP_SECONDARYLUN 26: REPHC_SECONDARY_LUN 37: REP_STANDBY_SECONDARYLUN
DEVICEID	Mandatory	string	Remote device ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ARRAYTYPE	Mandatory	enum	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device 4: cloud replication device **Note:**For this parameter in Dorado V300R001C00 and V300R001C01, only value "1" is supported, and values "2" and "3" will be supported in later versions.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 250: remote LUN
ID	Mandatory	string	Object ID. **The value is described as follows:** Format: "ArrayID;LUNID;WWN;WWPN;HOSTLUN_ID".
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
LUNID	Mandatory	string	Remote LUN ID.

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Parameter	Mandatory/ Conditional	Type	Description
LUNWWN	Mandatory	string	Unique identifier of the remote LUN.
DEVICEID	Mandatory	string	Remote device ID.
DEVICESN	Mandatory	string	Device serial number.
CAPACITY	Mandatory	string(uint32)	Capacity.
CAPACITYBYTE	Mandatory	string(uint64)	Capacity.
ARRAYTYPE	Mandatory	string(enum)	Type of a remote device, which can be heterogeneous or replication. **The value is described as follows:** 1: replication device 2: heterogeneous device 3: unknown device

Example

- Batch querying remote LUNs.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_lun?
RSSTYPE=13&DEVICEID=0&ARRAYTYPE=1&filter=HEALTHSTATUS::1 and
CAPACITYBYTE::1073741824&range=[0-100]

Response:
{
   "data": [
      {
         "ARRAYTYPE": "1",
         "CAPACITY": "1048576",
         "CAPACITYBYTE": "1073741824",
         "DEVICEID": "0",
         "DEVICESN": "210235982510G2000016",
         "HEALTHSTATUS": "1",
         "ID": "0;2;INVALID;INVALID;INVALID",
         "LUNID": "2",
         "LUNWWN": "694dbda1003ddda504f1605a00000002",
         "NAME": "LUN0010002",
         "TYPE": 250
      },
      {
         "ARRAYTYPE": "1",
         "CAPACITY": "1048576",
         "CAPACITYBYTE": "1073741824",
         "DEVICEID": "0",
         "DEVICESN": "210235982510G2000016",
         "HEALTHSTATUS": "1",
         "ID": "0;3;INVALID;INVALID;INVALID",
         "LUNID": "3",
         "LUNWWN": "694dbda1003ddda504f160be00000003",
         "NAME": "LUN0010003",
         "TYPE": 250
```

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```
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.5.4.2 Interface for Implementing Associated Query of Remote LUN Information

Function

This interface is used to associated query of remote LUN information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceSN}/remote_lun/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ARRAYTYPE	Mandatory	enum	Identifies the type of the remote device. **The value is described as follows:** 2: heterogeneity device 3: unknown device
ASSOCIATEOBJTYPE	Optional	enum	Associated object type. **The value is described as follows:** 224: remote device
ASSOCIATEOBJID	Conditional	string	Associated object ID. **The value is described as follows:** The value of ASSOCIATEOBJID is equal or larger than 512. **Note:**This field must be delivered when field ASSOCIATEOBJTYPE delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Search scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 250: Remote LUN
ID	Mandatory	string	Object ID. **The value is described as follows:** Format: "ArrayID;LUNID;WWN;WWPN;HOSTLUN_ID".
NAME	Mandatory	string	Name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal 2: fault 15: write protect
LUNID	Mandatory	string	Remote LUN ID.
DEVICEID	Mandatory	string	Remote device ID.
DEVICESN	Mandatory	string	Device serial number.

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Parameter	Mandatory/ Conditional	Type	Description
USED	Mandatory	string(bool)	Indicates whether the device is used by replication. The remote LUN of a private array does not use this parameter. Use this parameter to filter the external LUN used by the created eDevLUN. **The value is described as follows:** true: yes false: no
CAPACITY	Mandatory	string(uint32)	Capacity.
LUNWWN	Mandatory	string	Unique identifier of the remote LUN.
ARRAYTYPE	Mandatory	string(enum)	Identifies the type of the remote device, a heterogeneity device or a replication device. **The value is described as follows:** 2: heterogeneity device 3: unknown device
VENDOR	Mandatory	string	Vendor name, which is a field for the third-party LUN.
MODEL	Mandatory	string	LUN device model, which is a field for the third-party LUN.
SECTORSIZE	Mandatory	string(uint32)	Block size (the sector size presented to the host). The current block size is 512 bytes.
HOSTLUNID	Mandatory	string	ID of a host LUN.

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Parameter	Mandatory/ Conditional	Type	Description
ISTHINLUN	Mandatory	string(bool)	Indicates whether it is a thin LUN. **The value is described as follows:** true: yes false: no
DEVICEWWN	Mandatory	string	Unique device identifier.
DEVICENAME	Mandatory	string	Device name.
CAPACITYBYTE	Mandatory	string(uint64)	Capacity.
LOGICPATHNUM	Mandatory	string(uint32)	Number of logical paths.

Example

- Implementing associated query of remote LUN information.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_lun/associate?
ARRAYTYPE=2&ASSOCIATEOBJTYPE=224&TYPE=250&ASSOCIATEOBJID=513&range=[0-100]

Response:
{
   "data": [
      {
         "ARRAYTYPE": "2",
         "CAPACITY": "1048576",
         "CAPACITYBYTE": "1073741824",
         "DEVICEID": "513",
         "DEVICENAME": "HUA_XSG1_513",
         "DEVICESN": "65789AB65C7136CC98B5",
         "DEVICEWWN": "--",
         "HEALTHSTATUS": "1",
         "HOSTLUNID": "--",
         "ID": "INVALID;INVALID;64:84:6f:b1:00:8c:a1:5c:04:a1:f3:51:00:00:00:cf;INVALID;INVALID",
         "ISTHINLUN": "false",
         "LOGICPATHNUM": "1",
         "LUNID": "--",
         "LUNWWN": "64:84:6f:b1:00:8c:a1:5c:04:a1:f3:51:00:00:00:cf",
         "MODEL": "XSG1            ",
         "NAME": "--",
         "SECTORSIZE": "512",
         "TYPE": 250,
         "USED": "false",
         "VENDOR": "HUA "
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.5.4.3 Interface for Querying Remote File System Information in Batches

Function

Query remote file systems in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem_for_replication

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
RSSType	Optional	enum	It can be used as the remote file system of remote replication or HyperMetro. **The value is described as follows:** 23: queries the RSSTYPE value of the local available file system. 24: queries the RSSTYPE value of the remote available file system. **Note:**Used for remote replication devices.
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: HEALTHSTATUS and CAPACITYBYTE.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10,000 records can be returned.
rmtDeviceId	Conditional	enum	Remote device ID. **Note:**This parameter is mandatory when RSSType is set to 24.

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory	string	Indicates the name.
ID	Mandatory	string	File system ID.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
rmtDeviceId	Mandatory	int32	Remote device ID.
vstoreName		string	Tenant name.
vstoreId	Mandatory	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
capacity	Mandatory	uint64	Capacity.

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Example

- Query local file systems in batches.

```
Request: GET /deviceManager/rest/2102359825TK24587263/filesystem_for_replication?
TYPE=114&RSSType=23&range=[0-100]&t=1640248668614&filter=HEALTHSTATUS:1

Response: {
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "1",
         "NAME": "pq",
         "capacity": "20971520",
         "rmtDeviceId": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "HEALTHSTATUS": "1",
         "ID": "30",
         "NAME": "xxx",
         "capacity": "20971520",
         "rmtDeviceId": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query remote file systems in batches.

```
Request: GET /deviceManager/rest/2102359825TK24587263/filesystem_for_replication?
TYPE=114&RSSType=24&rmtDeviceId=0&range=[0-100]&t=1640248668614&filter=HEALTHSTATUS:1

Response: {
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "30",
         "NAME": "fs001",
         "capacity": "268435456",
         "rmtDeviceId": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "HEALTHSTATUS": "1",
         "ID": "31",
         "NAME": "fs002",
         "capacity": "268435456",
         "rmtDeviceId": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.5.4.4 Interface for Querying the Number of Remote File Systems

Function

Query the number of remote file systems.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem_for_replication/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
RSSType		enum	Type of the remote file system. **The value is described as follows:** 23: queries the RSSTYPE value of the local available file system. 24: queries the RSSTYPE value of the remote available file system. **Note:**Used for remote replication devices.
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: HEALTHSTATUS and CAPACITYBYTE.
rmtDeviceId	Conditional		Remote device ID. **Note:**This parameter is mandatory when RSSType is set to 24.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	uint32	Number of queried remote file systems.

Example

- Query the number of local file systems.

```
Request: GET /deviceManager/rest/2102359825TK24587263/filesystem_for_replication/count?
TYPE=114&RSSType=23&t=1640248668614&filter=HEALTHSTATUS:1

Response: {
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the number of remote file systems.

```
Request: GET /deviceManager/rest/2102359825TK24587263/filesystem_for_replication/count?
TYPE=114&RSSType=24&rmtDeviceId=0&t=1640248668614&filter=HEALTHSTATUS:1

Response: {
   "data": {
      "COUNT": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.5.4.5 Interface for Querying the Number of Remote LUN

Function

Interface for querying the number of remote LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_lun/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters HEALTHSTATUS and CAPACITYBYTE are supported.
ARRAYTYPE	Mandatory	enum	Remote device type. **The value is described as follows:** 1: replication device 2: heterogeneity device 3: unknown device 4：cloude replication device
RSSTYPE	Optional	enum	Type of remote LUN. **The value is described as follows:** 13: REP_SECONDARYLUN 26: REPHC_SECONDARY_LUN 37: REP_STANDBY_SECONDARYLUN **Note:**Used for replication remote device.
DEVICEID	Conditional	string	Remote device ID. **Note:**This field must be delivered when the value of ARRAYTYPE is 1.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Optional	enum	Associated object type. **The value is described as follows:** 224: remote device **Note:**Used for heterogeneous remote device.
ASSOCIATEOBJID	Conditional	string	Associated object ID. **The value is described as follows:** The value of ASSOCIATEOBJID should be greater than or equal to 512. **Note:**This field must be delivered when field ASSOCIATEOBJTYPE delivered.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried remote LUN.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 250:remote lun

Example

- Querying the number of remote LUN.

```
Request: GET /deviceManager/rest/1016964156/remote_lun/count?
RSSTYPE=13&DEVICEID=0&ARRAYTYPE=1&filter=HEALTHSTATUS::1 and CAPACITYBYTE::1073741824

Response:
{
    "data": {
        "COUNT": "1",
        "TYPE": 250
    },
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.9.5.5 Others

2.9.5.5.1 Interface for Scanning for a Remote LUN

Function

This interface is used to scan remote LUN.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/remote_lun/scan_remote_lun

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Optional	enum	Associated object type. **The value is described as follows:** 224: remote device 243: iSCSI link

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Optional	string	ID of the associated remote device or iSCSI link. **The value is described as follows:** Remote device ID or iSCSI link ID. **Note:** ASSOCIATEOBJID indicates the ID of the specified object selected in ASSOCIATEOBJTYPE. The start ID of the remote device ID is 512. Therefore, the value of ASSOCIATEOBJID is greater than or equal to 512.

Result

N/A

Example

- Scanning remote LUN.

```
Request: GET /deviceManager/rest/210235843910E6000009/remote_lun/scan_remote_lun?
ASSOCIATEOBJTYPE=224&ASSOCIATEOBJID=513

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.6 snapshot

2.9.6.1 Add

2.9.6.2 Delete

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2.9.6.3 Modify

2.9.6.4 Query

2.9.6.5 Others

2.9.6.5.1 Interface for Generating Couple UUIDs in Batches

Function

Generate couple UUIDs in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT/batch_generate_coupleuuid

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SNAPSHOTLIST	Mandatory	string	Snapshot IDs. **The value is described as follows:** 1-64k **Length:**64k

Result

Parameter	Mandatory/Conditional	Type	Description
SNAPSHOTUUIDSARRAY	Mandatory	string	Specifies the snapshot UUID list.

Application Scope

For internal use by R&D engineers.

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Example

- Generate couple UUIDs in batches.

```
Request: POST /deviceManager/rest/2102353QQR10L4000001/snapshot/batch_generate_coupleuuid
{
  "SNAPSHOTLIST":[1,2,3]
}

Response: {
    "data": {
        "SNAPSHOTUUIDSARRAY": "[
          {\"id\":\"1\",\"uuid\":\"0100e0084b037006ec7f5e85c37c0021\"},
          {\"id\":\"2\",\"uuid\":\"0200e0084b038006ec7f5e85c37c0021\"},
          {\"id\":\"3\",\"uuid\":\"0300e0084b039006ec7f5e85c37c0021\"}
      ]"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.7 fs_snapshot

2.9.7.1 Add

2.9.7.1.1 Interface for Adding a File System to a HyperCDP Schedule

Function

This interface is used to add a file system to a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/create_associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -

Parameter	Mandatory/Optional/Conditional	Type	Description
TIMINGSNAPSHOTSCHEDULEID	Conditional	string	HyperCDP schedule ID. **The value is described as follows:** - **Note:**Either TIMINGSNAPSHOTSCHEDULEID or scheduleName must be delivered.
scheduleName	Conditional	string	Name of a HyperCDP schedule. **The value is described as follows:** - **Note:**Either TIMINGSNAPSHOTSCHEDULEID or scheduleName must be delivered.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** -

Result

N/A

Example

- Adding a file system to a HyperCDP schedule.

```
Request: POST/deviceManager/rest/210235843910E6000009/filesystem/create_associate{
    "ID": "1",
    "TIMINGSNAPSHOTSCHEDULEID": "1",
    "vstoreId": "0",
}Response: {
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.7.1.2 Interface for Creating File System Snapshot Information

Function

This interface is used to create a file system snapshot.

HighRisk

You are about to create a secure snapshot. After this operation, the secure snapshot cannot be deleted during the protection period.

Suggestion: Ensure that you want to perform this operation.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Snapshot name. **The value is described as follows:** The value consists of 1 to 255 ASCII characters including letters, numbers, underscores (_), and hyphens (-). **Length:**1~255
PARENTTYPE	Mandatory	enum	Owning parent object type. **The value is described as follows:** 40: file system
PARENTID	Conditional	string	ID of the owning file system. **Note:**File system ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTNAME	Conditional	string	File system name. **The value is described as follows:** The value contains only letters, digits, and underscores (_). **Note:**File system name.
description	Optional	string	Description. **The value is described as follows:** The value contains 0 to 1023 characters. **Length:**0~1023
snapType	Optional	enum	Snapshot type. **The value is described as follows:** 1: user snapshot 2: HyperCDP 4: private snapshot
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
snapTag	Optional	string	Specifies the snapshot tag. **The value is described as follows:** The value consists of 1 to 32 letters, digits, underscores (_), periods (.), and hyphens (-) and must start with a letter or digit. **Length:**32
isSecuritySnap	Optional	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isAutoDelete	Optional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.
expiredTime	Optional	uint32	Expiration time of a secure snapshot. **The value is described as follows:** 1..7300
expiredTimeUnit		enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type number of the file system snapshot. **The value is described as follows:** 48: file system snapshot
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
CONSUMEDCAPACITY	Mandatory	stirng(uint64)	Capacity exclusively occupied by snapshots. **Note:**Not supported yet.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Object type number of the source file system. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	Source file system ID.
PARENTNAME	Mandatory	string	Source file system name.
description	Mandatory	string	Description.
TIMESTAMP	Mandatory	stirng(uint64)	Snapshot point in time (UTC).
USERCAPACITY	Mandatory	stirng(uint64)	Snapshot capacity. **Note:**Not supported yet.
utcTimeStamp	Mandatory	stirng(uint64)	Snapshot point in time (UTC).
dtreeId	Mandatory	uint64	Dtree ID.
snapTag	Mandatory	string	Specifies the snapshot tag.
dtreePath	Mandatory	string	Dtree path.
vstoreId	Mandatory	uint64	vStore ID.

Example

- Creating a file system snapshot.

```
Request: POST /deviceManager/rest/210235843910E6000009/FSSNAPSHOT
{
   "NAME": "test",
   "PARENTID": "5",
   "PARENTTYPE": 40,
   "description": "test",
   "snapTag": "tag1",
 }

Response:
{
   "data": {
      "ID":"1@test",
      "NAME":"test",
      "PARENTID":"1",
      "PARENTNAME":"fs0000",
      "HEALTHSTATUS":"1",
      "description":"test",
      "TIMESTAMP":"1594990822",
      "utcTimeStamp":"1594990822",
      "dtreeId":"0",
```

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```
        "dtreePath":"",
        "vstoreId":"0",
        "TYPE":48,
        "PARENTTYPE":"40",
        "snapTag": "tag1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.7.2 Delete

2.9.7.2.1 Interface for Deleting File System Snapshot Information

Function

This interface is used to delete a file system snapshot.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID.
forceDelete	Optional	enum	Whether to forcibly delete a snapshot. **The value is described as follows:** 0: Do not use the forcible deletion mode. 1: Forcibly delete a private snapshot in the normal state. 2: Clear the snapshots that fail to be created or deleted. **Default:**0

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/2102358439l0E6000009/FSSNAPSHOT/5@dddd111111

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.2.2 Interface for Deleting File System Snapshot Information by ID

Function

This interface is used to delete a file system snapshot by ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID. **Note:**File system snapshot ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/5@dddd111111

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/5@dddd111111?
vstoreId=2

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.7.2.3 Interface for Deleting File System Snapshot Information by Name

Function

This interface is used to delete a file system snapshot by name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Snapshot name. **Note:**Snapshot name.
vstoreId	Optional	uint32	vStore ID. **Note:**vStore ID.
PARENTID	Conditional	int32	Owning parent object ID. **Note:**Owning parent object ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.

Result

N/A

Example

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FSSNAPSHOT?
NAME=snaptest&PARENTID=1&vstoreId=0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FSSNAPSHOT?
NAME=snaptest&PARENTNAME=fstest&vstoreId=0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.2.4 Interface for Deleting FileSystem Snapshot Information

Function

This interface is used to delete a file system snapshot.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a file system snapshot.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/5@dddd111111

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.7.2.5 Interface for Removing a File System from a HyperCDP Schedule

Function

This interface is used to remove a file system from a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/remove_associate

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -
TIMINGSNAPSHOTSCHEDULEID	Conditional	string	HyperCDP schedule ID. **The value is described as follows:** - **Note:**Either TIMINGSNAPSHOTSCHEDULEID or scheduleName must be delivered.
scheduleName	Conditional	string	Name of a HyperCDP schedule. **The value is described as follows:** - **Note:**Either TIMINGSNAPSHOTSCHEDULEID or scheduleName must be delivered.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** -

Result

N/A

Example

- Removing a file system from a HyperCDP schedule.

```
Request: POST/deviceManager/210235843910E6000009/filesystem/remove_associate{
    "ID": "1",
    "TIMINGSNAPSHOTSCHEDULEID": "1",
    "vstoreId": "0",
}Response: {
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.7.3 Modify

2.9.7.3.1 Interface for Modifying File System Snapshot Information

Function

This interface is used to modify a file system snapshot.

HighRisk

You are about to modify security properties of file system secure snapshot ({0}). After this operation, the protection time of the secure snapshot will change, or the automatic deletion function will change.

Suggestion: Before performing this operation, ensure that the correct file system snapshot is selected.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
newName	Conditional	string	New name of the snapshot. **Note:**New name of the snapshot.
NAME	Conditional	string	Snapshot name. **Note:**You can change the snapshot name by delivering NAME. Either NAME or ID can be used.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	File system snapshot ID. **Note:**You can change the snapshot name by delivering the ID. Either this parameter or NAME is used.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
isSecuritySnap	Optional	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.
expiredTime	Optional	uint32	Protection period of a secure snapshot. **The value is described as follows:** 1..7300
expiredTimeUnit		enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year
isAutoDelete	Optional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.

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Result

Parameter	Mandatory/ Conditional	Type	Description
newName	Conditional	string	New name of the snapshot. **Note:**New name of the snapshot.
PARENTID	Mandatory	string	Source file system ID. **Note:**Source file system ID.
dtreeId	Mandatory	string	Dtree ID. **Note:**Dtree ID.
NAME	Mandatory	string	Snapshot name. **Note:**Snapshot name.

Example

- Modifying a file system snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/1@test001
{
   "newName": "test123"
}

Response:
{
   "data": {
      "NAME":"test001",
      "PARENTID":"1",
      "dtreeId":"0",
      "newName":"test123"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Modifying a file system snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/1@test001
{
   "NAME": "test002"
}

Response:
{
   "data": {
      "NAME":"test001",
      "PARENTID":"1",
      "dtreeId":"0",
      "newName":"test002"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.9.7.3.2 Interface for Modifying File System Snapshot Information by ID

Function

This interface is used to modify a file system snapshot by ID.

HighRisk

You are about to modify security properties of file system secure snapshot ({0}). After this operation, the protection time of the secure snapshot will change, or the automatic deletion function will change.

Suggestion: Before performing this operation, ensure that the correct file system snapshot is selected.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID. **Note:**File system snapshot ID.
newName	Conditional	string	New name of the snapshot. **Note:**New name of the snapshot.
description	Conditional	string	Description. **The value is described as follows:** The value contains 0 to 1023 characters. **Length:**0~1023 **Note:**Description.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string(uint64)	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
isSecuritySnap	Optional	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.
expiredTime	Optional	uint32	Protection period of a secure snapshot. **The value is described as follows:** 1..7300
expiredTimeUnit		enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year
isAutoDelete	Optional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.

Result

Parameter	Mandatory/Conditional	Type	Description
newName	Conditional	string	New name of the snapshot. **Note:**New name of the snapshot.
PARENTID	Mandatory	string	Source file system ID. **Note:**Source file system ID.

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Parameter	Mandatory/ Conditional	Type	Description
dtreeId	Mandatory	string	Dtree ID. **Note:**Dtree ID.
NAME	Mandatory	string	Snapshot name. **Note:**Snapshot name.
description	Mandatory	string	Description. **Note:**Description.

Example

- Modifying a file system snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/1@snap
{
   "newName": "snaptest",
   "description": "test",
   "vstoreId": "0"
}

Response:
{
   "data": {
      "Name":"snap"
      "newName":"snaptest",
      "PARENTID":"1",
      "dtreeId":"0",
      "description": "test"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.3.3 Interface for Modifying File System Snapshot Information by Name

Function

This interface is used to modify a file system snapshot by name.

HighRisk

You are about to modify security properties of file system secure snapshot ({0}). After this operation, the protection time of the secure snapshot will change, or the automatic deletion function will change.

Suggestion: Before performing this operation, ensure that the correct file system snapshot is selected.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
NAME	Mandatory	string	Name. **The value is described as follows:** The value contains letters, digits, and underscores (_). **Length:**1~255
PARENTID	Conditional	int32	File system ID. **Note:**File system ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.
description	Conditional	string	Description. **The value is described as follows:** The value contains 0 to 1023 characters. **Length:**0~1023 **Note:**Description.
newName	Conditional	string	New name of the file system snapshot. **Note:**New name of the file system snapshot.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapTag	Optional	string	Specifies the snapshot tag. **The value is described as follows:** The value consists of 1 to 32 letters, digits, underscores (_), periods (.), and hyphens (-) and must start with a letter or digit. **Length:**32
isSecuritySnap	Optional	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.
expiredTime	Optional	uint32	Protection period of a secure snapshot. **The value is described as follows:** 1..7300
expiredTimeUnit		enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year
isAutoDelete	Optional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.

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Result

Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Snapshot name. **Note:**Snapshot name.
PARENTID	Mandatory	string	Source file system ID. **Note:**Source file system ID.
dtreeId	Mandatory	string	Dtree ID. **Note:**Dtree ID.
newName	Mandatory	string	New name of the file system snapshot. **Note:**New name of the file system snapshot.

Example

- Modifying a file system snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fssnapshot
{
   "PARENTID": "1",
   "NAME": "test123",
   "newName": "test321",
   "description": "test321",
   "vstoreId": "0",
   "snapTag":"tag1"
}

Response:
{
   "data": {
      "NAME":"test123",
      "PARENTID":"1",
      "dtreeId":"0",
      "newName":"test321"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Modifying a file system snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fssnapshot
{
   "PARENTNAME": "fstest",
   "NAME": "test123",
   "newName": "test321",
   "description": "test321",
   "vstoreId": "0",
   "snapTag":"tag1"
}

Response:
```

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```
{
   "data": {
      "NAME":"test123",
      "PARENTID":"1",
      "dtreeId":"0",
      "newName":"test321"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.4 Query

2.9.7.4.1 Interface for Batch Querying File System Snapshot Information

Function

This interface is used to batch query basic information about file system snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	File system ID.
sortby	Optional	string	Sorting fields. TIMESTAMP is supported. **The value is described as follows:** TIMESTAMP,d represents descending while TIMESTAMP,a represents ascending. **Note:**Sorting fields. TIMESTAMP is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
snapType	Optional	enum	Snapshot type. **The value is described as follows:** 1: user snapshot 2: HyperCDP 4: private snapshot
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME and ID are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**Query range.
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios (not supported yet).
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Note:**Not supported yet.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type number of the file system snapshot. **The value is described as follows:** 48: file system snapshot
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
CONSUMEDCAPACITY	Conditional	stirng(uint64)	Capacity exclusively occupied by snapshots. **Unit:**sectors **Note:**Not supported yet.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty
PARENTTYPE	Mandatory	enum	Source file system type. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	Source file system ID.
PARENTNAME	Mandatory	string	Source file system name.
TIMESTAMP	Mandatory	stirng(uint64)	Snapshot point in time. **Unit:**seconds
USERCAPACITY	Conditional	stirng(uint64)	Snapshot capacity. **Unit:**sectors **Note:**Not supported yet.

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Parameter	Mandatory/ Conditional	Type	Description
CONSUMEDSSDCAPACITY	Conditional	string(uint64)	SSD capacity exclusively occupied by snapshots. **Unit:**sectors **Note:**Not supported yet.
SNAPTYPE	Conditional	string(enum)	Snapshot type of the file system. **The value is described as follows:** 1: manual snapshot 2: periodic snapshot 4: internal snapshot 8: private snapshot 16: snapshot copy 32: initial snapshot **Note:**Not supported yet.
utcTimeStamp	Mandatory	uint64	UTC time when a snapshot is created. **Unit:**seconds
rollbackStarttime	Mandatory		Rollback start time. **Unit:**uint64
rollbackEndtime	Mandatory		Rollback end time. **Unit:**uint64
rollbackRate	Mandatory	uint32	Rollback progress. **The value is described as follows:** 0..100 **Unit:**%
rollbackStatus	Mandatory	enum	Rollback status of the file system.
description	Mandatory	string	Snapshot description.
dtreeId	Mandatory	uint64	Dtree ID.
dtreePath	Mandatory	string	Dtree path.
rollbackSpeed	Mandatory	uint64	Rollback speed.
vstoreId	Mandatory	uint64	vStore ID.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Mandatory	string	vStore name.
snapTag	Mandatory	string	Specifies the snapshot tag.
isScheduleCdp	Mandatory	string	Indicates whether the HyperCDP schedule is used.
isSecuritySnap	Mandatory	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.
expiredTime	Conditional	uint32	Protection period of a secure snapshot.
expiredTimeUnit	Conditional	enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year
isAutoDelete	Conditional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.
secureSnapClockTime	Conditional	uint64	Secure snapshot clock. **Note:**Constraints: This parameter is for internal use only and is not displayed externally.
isInProtectionPeriod	Conditional	bool	Whether it is within the protection period. **The value is described as follows:** true: yes; false: no.

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Parameter	Mandatory/ Conditional	Type	Description
leftDays	Mandatory	uint32	Number of remaining days for protecting secure snapshots. **The value is described as follows:** 0..7300
leftHours	Conditional	uint32	Indicates the remaining protection hours. **The value is described as follows:** 0..175200

Example

- Batch querying basic information about file system snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/FSSNAPSHOT?
PARENTID=5&sortby=TIMESTAMP,
d&range=[
    0-100
]

Response: {
    "data": [
        {
            "ID": "1@snaptest",
            "NAME": "snaptest",
            "PARENTID": "1",
            "PARENTNAME": "fs0000",
            "HEALTHSTATUS": "1",
            "description": "test",
            "TIMESTAMP": "1594979482",
            "utcTimeStamp": "1594979482",
            "dtreeId": "0",
            "dtreePath": "",
            "rollbackStarttime": "0",
            "rollbackEndtime": "0",
            "rollbackSpeed": "255",
            "rollbackRate": "0",
            "rollbackStatus": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore",
            "TYPE": 48,
            "PARENTTYPE": 40,
            "snapTag": "tag1",
            "snapType": "1",
            "isScheduleCdp": "1",
            "expiredTime": "1",
            "expiredTimeUnit": "46",
            "isAutoDelete": "false",
            "isSecuritySnap": "true",
            "secureSnapClockTime": "1650074077",
            "isInProtectionPeriod": "true",
            "leftDays": "1",
            "leftHours": "24"
        }
    ],
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.9.7.4.2 Interface for Querying File System Snapshot Information by ID

Function

This interface is used to query basic information about the snapshots of a file system by ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID. **Note:**File system snapshot ID.
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Note:**Not supported yet.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type number of the file system snapshot. **The value is described as follows:** 48: file system snapshot
USERCAPACITY	Conditional	stirng(uint64)	Snapshot capacity. **Unit:**sectors **Note:**Not supported yet.
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
PARENTID	Mandatory	string	Source file system ID.
PARENTNAME	Mandatory	string	Source file system name.
CONSUMEDCAPACITY	Conditional	stirng(uint64)	Space exclusively occupied by the snapshot. **Unit:**sectors **Note:**Not supported yet.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty
description	Mandatory	string	Snapshot description.
TIMESTAMP	Mandatory	stirng(uint64)	Snapshot point in time. **Unit:**seconds
utcTimeStamp	Mandatory	uint64	UTC time when a snapshot is created. **Unit:**seconds
dtreeId	Mandatory	uint32	Dtree ID.
dtreePath	Mandatory	string	Dtree path.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Object type number of the source file system. **The value is described as follows:** 40: file system
consumedSSDCapacity	Conditional	string(uint64)	SSD capacity consumed by snapshots. **Unit:**sectors **Note:**Not supported yet.
USERCAPACITY	Conditional	stirng(uint64)	Snapshot capacity. **Unit:**sectors **Note:**Not supported yet.
rollbackRate	Mandatory	uint32	Rollback progress. **The value is described as follows:** 0..100 **Unit:**%
rollbackStarttime	Mandatory	uint64	Rollback start time.
rollbackEndtime	Mandatory	uint64	Rollback end time.
rollbackSpeed	Mandatory	string	Rollback speed. **Note:**Rollback speed.
rollbackStatus	Mandatory	string	Rollback status. **Note:**Rollback status.
vstoreId	Mandatory	uint64	vStore ID. **Note:**vStore ID.
vstoreName	Mandatory	string	vStore name. **Note:**vStore name.
isScheduleCdp	Mandatory	enum	HyperCDP object type. **The value is described as follows:** 1: HyperCDP object manually created by a user 2: HyperCDP object created by a schedule

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Parameter	Mandatory/ Conditional	Type	Description
snapType	Mandatory	enum	Snapshot type. **The value is described as follows:** 1: user snapshot 2: HyperCDP 4: private snapshot **Note:**To be compatible with converged storage versions, the SNAPTYPE field is returned.
snapTag	Mandatory	string	Specifies the snapshot tag. **The value is described as follows:** The value consists of 1 to 32 letters, digits, underscores (_), periods (.), and hyphens (-) and must start with a letter or digit.

Example

- Querying basic information about the snapshots of a file system.

```
Request: GET /deviceManager/rest/210235843910E6000009/fssnapshot/1@snaptest

Response: {
   "data": {
      "description": "",
      "ID": "1@snaptest",
      "NAME": "snaptest",
      "TYPE": 48,
      "PARENTTYPE": 40,
      "PARENTID": "1",
      "PARENTNAME": "fs",
      "dtreeId": "0",
      "dtreePath": "",
      "rollbackStatus": "0",
      "rollbackRate": "0",
      "rollbackStarttime": "0",
      "rollbackEndtime": "0",
      "TIMESTAMP": "1646035536",
      "utcTimeStamp": "1646035536",
      "HEALTHSTATUS": "1",
      "rollbackSpeed": "255",
      "vstoreId": "0",
      "snapType": "2",
      "SNAPTYPE": "2",
      "isScheduleCdp": "0",
```

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```
        "snapTag": "",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.7.4.3 Interface for Querying File System Snapshot Information by Name

Function

This interface is used to query basic information about the snapshots of a file system by name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	int32	File system ID. **Note:**Owning parent object ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.
dtreeId	Mandatory	int32	Dtree ID. **Note:**Dtree ID.
NAME	Mandatory	string	Snapshot name. **Note:**Snapshot name.
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
PARENTID	Mandatory	string	Source file system ID.
PARENTNAME	Mandatory	string	Source file system name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty
description	Mandatory	string	Snapshot description.
TIMESTAMP	Mandatory	uint64	UTC time when a snapshot is created. **Note:**UTC time when a snapshot is created.
utcTimeStamp	Mandatory	uint64	UTC time when a snapshot is created. **Unit:**seconds
dtreeId	Mandatory	uint32	Dtree ID.
dtreePath	Mandatory	string	Dtree path.
rollbackStarttime	Mandatory	uint64	Rollback start time.
rollbackRate	Mandatory	uint32	File system rollback progress. **The value is described as follows:** 0..100 **Unit:**%
rollbackEndtime	Mandatory	uint64	End time of file system rollback.
rollbackSpeed	Mandatory	string	Rollback speed of a file system snapshot.
rollbackStatus	Mandatory	string	Rollback status.
vstoreId	Mandatory	uint64	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	uint64	Managed object type number of the file system snapshot. **The value is described as follows:** 48: file system snapshot.
PARENTTYPE	Mandatory	uint64	Object type number of the source file system. **The value is described as follows:** 40: file system.
isScheduleCdp	Mandatory	enum	HyperCDP object type. **The value is described as follows:** 1: HyperCDP object manually created by a user 2: HyperCDP object created by a schedule
snapType	Mandatory	enum	Snapshot type. **The value is described as follows:** 1: user snapshot 2: HyperCDP 4: private snapshot
snapTag	Mandatory	string	Specifies the snapshot tag. **The value is described as follows:** The value consists of 1 to 32 letters, digits, underscores (_), periods (.), and hyphens (-) and must start with a letter or digit.

Example

- Querying basic information about the snapshots of a file system.

```
Request: GET /deviceManager/rest/210235843910E6000009/fssnapshot?
NAME=snaptest&PARENTID=1&dtreeId=0
```

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```
Response:
{
   "data": {
      "ID":"1@snaptest",
      "NAME":"snaptest",
      "PARENTID":"1",
      "PARENTNAME":"fs0000",
      "HEALTHSTATUS":"1",
      "description":"test",
      "TIMESTAMP":"1594979482",
      "utcTimeStamp":"1594979482",
      "dtreeId":"0",
      "dtreePath":"",
      "rollbackStarttime":"0",
      "rollbackEndtime":"0",
      "rollbackSpeed":"255",
      "rollbackRate":"0",
      "rollbackStatus":"0",
      "vstoreId":"0",
      "vstoreName":"System_vStore",
      "TYPE":48,
      "PARENTTYPE":40,
      "snapType":"2",
      "isScheduleCdp":"0",
      "snapTag":"tag1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying basic information about the snapshots of a file system.

```
Request: GET /deviceManager/rest/210235843910E6000009/fssnapshot?
NAME=snaptest&PARENTNAME=fstest&dtreeId=0

Response:
{
   "data": {
      "ID":"1@snaptest",
      "NAME":"snaptest",
      "PARENTID":"1",
      "PARENTNAME":"fs0000",
      "HEALTHSTATUS":"1",
      "description":"test",
      "TIMESTAMP":"1594979482",
      "utcTimeStamp":"1594979482",
      "dtreeId":"0",
      "dtreePath":"",
      "rollbackStarttime":"0",
      "rollbackEndtime":"0",
      "rollbackSpeed":"255",
      "rollbackRate":"0",
      "rollbackStatus":"0",
      "vstoreId":"0",
      "vstoreName":"System_vStore",
      "TYPE":48,
      "PARENTTYPE":40,
      "snapType":"2",
      "isScheduleCdp":"0",
      "snapTag":"tag1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.7.4.4 Interface for Querying File System Snapshot Rollback Information

Function

This interface is used to query file system snapshot rollback information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FSSNAPSHOT/query_fs_snapshot_rollback

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	File system ID. **Note:**File system ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
PARENTID	Mandatory	string	File system ID. **The value is described as follows:** 1..65536
PARENTNAME	Mandatory	string	File system name. **The value is described as follows:** The value is a character string.
rollbackStarttime	Mandatory	uint64	Start time of file system rollback.

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Parameter	Mandatory/ Conditional	Type	Description
rollbackEndtime	Mandatory	uint64	End time of file system rollback.
rollbackRate	Mandatory	uint32	File system rollback progress. **The value is described as follows:** 0..100
rollbackTargetObjID	Mandatory	string	ID of the target snapshot used for file system rollback. **The value is described as follows:** The value is a character string.
rollbackTargetObj-Name	Mandatory	string	Name of the target snapshot used for file system rollback. **The value is described as follows:** The value is a character string.
rollbackStatus	Mandatory	enum	Rollback status of the file system. **The value is described as follows:** 0: idle 1: running 2: paused 3: completed 4: terminated
rollbackSpeed	Mandatory	uint64	Rollback speed.
vstoreId	Mandatory	uint64	vStore ID.
vstoreName	Mandatory	string	vStore name.

Application Scope

For internal use by R&D engineers.

Example

- Query the current snapshot rollback information of a file system.

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```
Request: GET /deviceManager/rest/2102350RMG10H2000064/FSSNAPSHOT/
query_fs_snapshot_rollback?PARENTNAME=fs&&vstoreId=0

Response:
{
   "data": {
      "PARENTID": "1",
      "PARENTNAME": "fs",
      "rollbackStarttime": "1626164617",
      "rollbackEndtime": "18446744073709551615",
      "rollbackSpeed": "2",
      "rollbackRate": "50",
      "rollbackTargetObjID": "1@snap",
      "rollbackTargetObjName": "snap",
      "rollbackStatus": "1",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query the current snapshot rollback information of a file system.

```
Request: GET /deviceManager/rest/2102350RMG10H2000064/FSSNAPSHOT/
query_fs_snapshot_rollback?PARENTID=1

Response:
{
   "data": {
      "PARENTID": "1",
      "PARENTNAME": "fs",
      "rollbackStarttime": "1626164617",
      "rollbackEndtime": "18446744073709551615",
      "rollbackSpeed": "2",
      "rollbackRate": "50",
      "rollbackTargetObjID": "1@snap",
      "rollbackTargetObjName": "snap",
      "rollbackStatus": "1",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.4.5 Interface for Querying FileSystem Snapshot Information

Function

This interface is used to query basic information about the snapshots of a file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type number of the file system snapshot. **The value is described as follows:** 48: file system snapshot
ID	Mandatory	string	Snapshot ID.
NAME	Mandatory	string	Snapshot name.
CONSUMEDCAPACITY	Conditional	stirng(uint64)	Space exclusively occupied by the snapshot. **Unit:**sectors
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Object type number of the source file system. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	Source file system ID.
PARENTNAME	Mandatory	string	Source file system name.
TIMESTAMP	Mandatory	stirng(uint64)	Snapshot point in time. **Unit:**seconds
USERCAPACITY	Conditional	stirng(uint64)	Snapshot capacity. **Unit:**sectors
consumedSSDCapacity	Conditional	string(uint64)	SSD capacity exclusively occupied by snapshots. **Unit:**sectors
utcTimeStamp	Mandatory	uint64	UTC time when a snapshot is created. **Unit:**seconds
snapTag	Mandatory	string	Specifies the snapshot tag.
isSecuritySnap	Mandatory	bool	Whether it is a secure snapshot. **The value is described as follows:** true: yes; false: no.
expiredTime	Conditional	uint32	Protection period of a secure snapshot.
expiredTimeUnit	Conditional	enum	Unit of the secure snapshot expiration time. **The value is described as follows:** 46: day; 47: month; 48: year

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Parameter	Mandatory/ Conditional	Type	Description
isAutoDelete	Conditional	bool	Whether to enable the automatic deletion function. **The value is described as follows:** yes: enabled; no: disabled.
leftDays	Conditional	uint32	Number of remaining days for protecting secure snapshots.
secureSnapClockTime	Conditional	uint64	Secure snapshot clock. **Note:**Constraints: This parameter is for internal use only and is not displayed externally.
isInProtectionPeriod	Conditional	bool	Whether it is within the protection period. **The value is described as follows:** true: yes; false: no.
leftHours	Conditional	uint32	Indicates the remaining protection hours. **The value is described as follows:** 0..175200

Example

- Querying basic information about the snapshots of a file system.

```
Request: GET /deviceManager/rest/210235843910E6000009/fssnapshot/5@dddd111111

Response: {
   "data": {
      "TYPE": 48,
      "ID": "1@snap1",
      "NAME": "snap1",
      "PARENTTYPE": 40,
      "PARENTID": "1",
      "PARENTNAME": "FileSystem001",
      "HEALTHSTATUS": "1",
      "description": "",
      "TIMESTAMP": "1623052696",
      "snapType": "1",
      "utcTimeStamp": "1623052696",
      "dtreeId": "0",
      "dtreePath": "",
      "rollbackStarttime": "0",
```

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```
        "rollbackEndtime": "0",
        "rollbackSpeed": "255",
        "rollbackRate": "0",
        "rollbackStatus": "0",
        "isScheduleCdp": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "snapTag": "tag1",
        "expiredTime": "1",
        "expiredTimeUnit": "46",
        "isAutoDelete": "false",
        "isSecuritySnap": "true",
        "secureSnapClockTime": "1650074077",
        "isInProtectionPeriod": "true",
        "leftDays": "1",
        "leftHours": "24"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.7.4.6 Interface for Querying the Differences of a Single File Between File System Snapshots

Function

Query the differences of a single file among file system snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FSSNAPSHOT/query_file_diff_between_fs_snapshot

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	File system ID.

Parameter	Mandatory/Optional/Conditional	Type	Description
fileDiffStartSnapshotName	Mandatory	string	Name of the file system snapshot where the query starts. **The value is described as follows:** The value is a string of 1 to 255 ASCII characters, including letters, digits, underscores (_), and hyphens (-). **Length:**1~255
fileDiffEndSnapshotName	Mandatory	string	Name of the file system snapshot where the query ends. **The value is described as follows:** The value is a string of 1 to 255 ASCII characters, including letters, digits, underscores (_), and hyphens (-). **Length:**1~255
filePath	Mandatory	string	File path.
fileDiffQueryOffset	Mandatory	uint64	File difference query offset.
fileDiffSessionId	Mandatory	string	Session ID. **The value is described as follows:** The value is a string of 64 characters, consisting of digits and underscores (_). **Length:**64 **Note:**This field is left empty for the first query.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fileDiffObjId	Mandatory	uint64	File object ID. **The value is described as follows:** 0-18446744073709551615. **Note:**You can specify any value within the value range for the first query.

Result

Parameter	Mandatory/Conditional	Type	Description
PARENTID	Mandatory	string	File system ID.
dtreeId	Mandatory	uint64	Dtree ID.
volumeId	Mandatory	uint32	Volume ID.
fileDiffOffset	Mandatory	uint64	File difference offset.
fileDiffLen	Mandatory	uint64	File difference length.
fileDiffObjId	Mandatory	uint64	File object ID.
fileDiffQueryFinish	Mandatory	enum	End flag of difference query. **The value is described as follows:** 0: The file difference query is not complete. 1: The file difference query ends.
fileDiffQueryOffset	Mandatory	uint64	File difference query offset.

Example

- Query the differences of a single file between snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/
query_file_diff_between_fs_snapshot
{
   "PARENTID": "1",
   "fileDiffStartSnapshotName":  "snapnew33",
   "fileDiffEndSnapshotName":  "snapnew44",
   "filePath":  "/filenew33",
```

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```
    "fileDiffSessionId": "",
    "fileDiffObjId":"0",
    "fileDiffQueryOffset":  "0"
}

Response:
{
    "data": [
        {
            "PARENTID": "1",
            "dtreeId": "0",
            "fileDiffQueryOffset": "314572800",
            "volumeId": "65",
            "fileDiffOffset": "0",
            "fileDiffLen": "16384",
            "fileDiffQueryFinish": "1",
            "fileDiffObjId": "3452009114379644964",
            "fileDiffSessionId": "73_74_41917917"
        },
        {
            "PARENTID": "1",
            "dtreeId": "0",
            "fileDiffQueryOffset": "314572800",
            "volumeId": "65",
            "fileDiffOffset": "314572800",
            "fileDiffLen": "2097152",
            "fileDiffQueryFinish": "1",
            "fileDiffObjId": "3452009114379644964",
            "fileDiffSessionId": "73_74_41917917"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.7.4.7 Interface for Querying the Number of File System Snapshot Information

Function

This interface is used to query the number of file system snapshots.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	Parent object ID. **Note:**File system ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.
filter	Conditional	string	Search criteria. **Note:**Search criteria.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Object statistics quantity.
TYPE	Mandatory	enum	Type number of the object. **The value is described as follows:** 48: file system snapshot

Example

- Querying the number of file system snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/count?
vstoreId=0&PARENTID=1

Response:
{
   "data": {
      "COUNT": "4",
      "TYPE": "48"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying the number of file system snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/count?
vstoreId=0&PARENTNAME=fstest

Response:
{
   "data": {
      "COUNT": "4",
      "TYPE": "48"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying the number of file system snapshots.

```
Request: GET /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/count?
vstoreId=0&filter=PARENTID%3A%3A1

Response:
{
    "data": {
        "COUNT": "4",
        "TYPE": "48"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.7.5 Others

2.9.7.5.1 Interface for Change File System Snapshot Rolling Back Speed

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FSSNAPSHOT/rollback_fs_snapshot

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	Source file system ID. **Note:**Source file system ID.
rollbackSpeed	Mandatory	enum	Rollback speed. **The value is described as follows:** 1:Low;2:Middle;3:High;4:Highest

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Parameter	Mandatory/Optional/Conditional	Type	Description
userActionType	Mandatory	enum	User action type. **The value is described as follows:** 2:USER_ACTION_TYPE_MODIFY
vstoreId	Optional	uint64	Vstore ID. **Note:**store ID.

Result

Parameter	Mandatory/Conditional	Type	Description
PARENTID	Mandatory	string	Source file system ID. **Note:**Source file system ID.
PARENTNAME	Mandatory	string	Source file system name. **Note:**Source file system name.
rollbackStarttime	Mandatory	uint64	Rollback start time. **Note:**Rollback start time.
rollbackEndtime	Mandatory	uint64	Rollback end time. **Note:**Rollback end time.
rollbackRate	Mandatory	uint64	Rollback progress. **The value is described as follows:** 0 to 100. **Note:**Rollback progress.
rollbackTargetObjID	Mandatory	string	ID of the target snapshot used for rollback. **Note:**ID of the target snapshot used for rollback.

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Parameter	Mandatory/ Conditional	Type	Description
rollbackTargetObj-Name	Mandatory	string	Name of the target snapshot used for rollback. **Note:**Name of the target snapshot used for rollback.
rollbackStatus	Mandatory	uint64	Rollback status. **Note:**Rollback status.

Application Scope

For internal use by R&D engineers.

Example

- .

```
Request: PUT /deviceManager/rest/210235843910E6000009//fssnapshot/rollback_fssnapshot
{
   "PARENTID" : "1",
   "rollbackSpeed": “2”,
   "userActionType": “2”,
   "vstoreId": "0"
}

Response:
{
   "data": {
      "PARENTID":"1",
      "PARENTNAME":"fs1",
      "rollbackStarttime":"0",
      "rollbackEndtime":"0",
      "rollbackRate":"0",
      "rollbackTargetObjID":"--",
      "rollbackTargetObjName":"--",
      "rollbackStatus":"0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.5.2 Interface for Rolling Back a Filesystem Snapshot

Function

This interface is used to restore the source file system data to the target snapshot data.

HighRisk

You are about to roll back data using a read-only file system snapshot. Data in the corresponding file system will be rolled back to the state preserved by the

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specified snapshot, all the read-only snapshots generated after the specified read-only snapshot will be deleted, and all data generated after the specified snapshot will be lost. If you access file system data during the rollback, the data may have been lost due to the rollback, which will cause logical errors or even service interruptions. This operation will cause failure of NDMP/NDMPCOPY tasks that are in progress.

Suggestions: Before performing this operation:

1. Stop services of the file system to avoid accessing data that has been lost due to the rollback.

2. Ensure that the correct file system snapshot is selected.

3. Check whether any NDMP/NDMPCOPY tasks are in progress. Perform this operation after the NDMP/NDMPCOPY tasks are complete.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/rollback_fssnapshot

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system snapshot ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Restoring the source file system data to the target snapshot data.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FSSNAPSHOT/ROLLBACK_FSSNAPSHOT
{
    "ID": "5@test123"
}

Response:
{
    "data": {},
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.9.7.5.3 Interface for Rolling Back File System Data Using a Snapshot by ID

Function

This interface is used to roll back file system data using a snapshot by ID.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/rollback_fssnapshot

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Conditional	string	ID of the target snapshot used for rollback. **The value is described as follows:** The value is a character string. **Note:**ID of the target snapshot used for rollback.
rollbackTargetObjID	Conditional	string	ID of the target snapshot used for rollback. **The value is described as follows:** The value is a character string. **Length:**1-275 **Note:**ID of the target snapshot used for rollback.
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
rollbackSpeed	Optional	string(uint64)	Rollback speed. **Note:**Rollback speed.

Result

Parameter	Mandatory/Conditional	Type	Description
PARENTID	Mandatory	uint64	File system ID. **Note:**File system ID.
PARENTNAME	Mandatory	string	File system name. **Note:**File system name.
rollbackStarttime	Mandatory	uint64	Rollback start time. **Note:**Rollback start time.
rollbackEndtime	Mandatory	uint64	Rollback end time. **Note:**Rollback end time.
rollbackRate	Mandatory	uint64	Rollback progress. **Note:**Rollback progress.
rollbackTargetObjID	Mandatory	string	Object ID. **Note:**Object ID.
rollbackTargetObj-Name	Mandatory	string	Snapshot name. **Note:**Snapshot name.
rollbackStatus	Mandatory	uint64	Rollback status. **Note:**Rollback status.

Application Scope

For internal use by R&D engineers.

Example

- Roll back file system data using a snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fssnapshot/rollback_fssnapshot
{
   "rollbackTargetObjID": "1@snap1",
   "vstoreId" : "0",
```

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```
   "rollbackSpeed" : "1",
}

Response: {
   "data": {
      "PARENTID": "1",
      "PARENTNAME": "fs0000",
      "rollbackStarttime": "0",
      "rollbackEndtime": "0",
      "rollbackRate": "0",
      "rollbackTargetObjID": "1@snap1",
      "rollbackTargetObjName": "snap1",
      "rollbackStatus": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Roll back file system data using a snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009/fssnapshot/rollback_fssnapshot
{
   "ID": "1@snap1",
   "vstoreId" : "0",
   "rollbackSpeed" : "1",
}

Response: {
   "data": {
      "PARENTID": "1",
      "PARENTNAME": "fs0000",
      "rollbackStarttime": "0",
      "rollbackEndtime": "0",
      "rollbackRate": "0",
      "rollbackTargetObjID": "1@snap1",
      "rollbackTargetObjName": "snap1",
      "rollbackStatus": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.7.5.4 Interface for Rolling Back File System Data Using a Snapshot by Name

Function

This interface is used to roll back file system data using a snapshot by name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/fssnapshot/rollback_fssnapshot

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	File system ID. **Note:**File system ID.
PARENTNAME	Conditional	string	File system name. **Note:**File system name.
rollbackTargetObj-Name	Mandatory	string	Name of the target snapshot used for rollback. **The value is described as follows:** The value is a character string. **Length:**1-255 **Note:**Name of the target snapshot used for rollback.
vstoreId	Optional	string(uint64)	vStore ID. **Note:**vStore ID.
rollbackSpeed	Optional	string(uint64)	Rollback speed. **Note:**Rollback speed.

Result

Parameter	Mandatory/Conditional	Type	Description
PARENTID	Mandatory	uint64	File system ID. **Note:**File system ID.
PARENTNAME	Mandatory	string	File system name. **Note:**File system name.
rollbackStarttime	Mandatory	uint64	Rollback start time. **Note:**Rollback start time.
rollbackEndtime	Mandatory	uint64	Rollback end time. **Note:**Rollback end time.

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Parameter	Mandatory/ Conditional	Type	Description
rollbackRate	Mandatory	uint64	Rollback progress. **Note:**Rollback progress.
rollbackTargetObjID	Mandatory	string	Object ID. **Note:**Object ID.
rollbackTargetObj-Name	Mandatory	string	Snapshot name. **Note:**Snapshot name.
rollbackStatus	Mandatory	uint64	Rollback status. **Note:**Rollback status.

Application Scope

For internal use by R&D engineers.

Example

- Roll back file system data using a snapshot.

```
Request: PUT /deviceManager/rest/210235843910E6000009//fssnapshot/rollback_fssnapshot
{
   "PARENTID" : "1",
   "rollbackTargetObjName" : "snap1",
   "vstoreId" : "0",
   "rollbackSpeed" : "1"
}

Response: {
   "data": {
      "PARENTID": "1",
      "PARENTNAME": "fs0000",
      "rollbackStarttime": "0",
      "rollbackEndtime": "0",
      "rollbackRate": "0",
      "rollbackTargetObjID": "1@snap1",
      "rollbackTargetObjName": "snap1",
      "rollbackStatus": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.8 hyper_metro_pair

2.9.8.1 Add

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2.9.8.1.1 Interface for Batch Creating HyperMetro Pairs

Function

This interface is used to batch create HyperMetro pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DOMAINID	Mandatory	string	HyperMetro domain ID.
HCRESOURCETYPE	Mandatory	enum	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN 2: file system
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
ISFIRSTSYNC	Optional	bool	Whether initial synchronization is performed. **The value is described as follows:** false: no initial synchronization true: initial synchronization **Default:**false: no initial synchronization

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Parameter	Mandatory/Optional/Conditional	Type	Description
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic
SPEED	Optional	enum	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
writeIOLatencyDifference	Optional	uint32	Difference between the local and remote write latencies. **The value is described as follows:** 10 ms to 30s **Unit:**ms **Note:**New
vstoreId		string	vStore ID. **Note:**New
vstorePairId		string	ID of a vStore pair. **Note:**New. The sequence number is changed to 501.
writeSecondaryTimeout	Optional	uint32	Timeout interval of write I/Os delivered to the secondary end. **The value is described as follows:** The value ranges from 15 to 30. **Default:**30 **Unit:**seconds **Note:**New

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Parameter	Mandatory/Optional/Conditional	Type	Description
bandwidth		uint64	Bandwidth. **Unit:**MB/s **Note:**New
autoPauseHyperMetroPair	Optional	enum	Whether to enable the function of automatically disconnecting the HyperMetro pair when the write latency of the local end is inconsistent with that of the remote end. **The value is described as follows:** 0: disabled 1: enabled This function is disabled by default. **Note:**New

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15361: HyperMetro pair
resourceRole	Conditional	enum	Resource role. **The value is described as follows:** 0:NON-PREFERRED;1:PREFERRED **Note:**New
vstorePairId	Mandatory	string	**Note:**New
ID	Mandatory	string	HyperMetro pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 100: To be synchronized 23: Synchronizing 0: Unknown 1: Normal 41: Paused 94: Faulty 93: Force started 35: Invalid **Note:**If initial synchronization is not performed when a HyperMetro pair is created, the running status is "Paused" after the creation is complete and it changes to "Normal" in an asynchronous task. There is a transition of running status from "Paused" to "Normal".
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected

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Parameter	Mandatory/ Conditional	Type	Description
HCRESOURCETYPE	Mandatory	string(enum)	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
LOCALOBJNAME	Mandatory	string	Local object name.
REMOTEOBJNAME	Mandatory	string	Remote object name.
ISPRIMARY	Mandatory	string(bool)	Whether it is the primary end. **The value is described as follows:** true: yes false: no **Note:** A/P indicates the primary end, and A/A indicates the preferential quorum end.
RESOURCEWWN	Mandatory	string	Resource WWN (applicable to SAN only).
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
LOCALDATASTATE	Mandatory	string(enum)	Local resource data status. **The value is described as follows:** 1: complete 2: incomplete

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEDATASTATE	Mandatory	string(enum)	Remote resource data status. **The value is described as follows:** 1: complete 2: incomplete
LOCALHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the local resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
REMOTEHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the remote resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
SYNCPROGRESS	Mandatory	string(uint32)	Synchronization progress. **Note:**This parameter is returned when the HyperMetro pair running status is Synchronizing. If the HyperMetro pair running status is not Synchronizing, -1 is returned.
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 1: from local to remote 2: from remote to local

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
STARTTIME	Mandatory	string(uint64)	Start time of the last synchronization. **Note:**This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ENDTIME	Mandatory	string(uint64)	End time of the last synchronization. **Note:**This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ISINCG	Mandatory	string(bool)	Whether a HyperMetro pair is in a consistency group. **The value is described as follows:** true: yes false: no
CGID	Mandatory	string	Consistency group ID. **Note:**This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.

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Parameter	Mandatory/ Conditional	Type	Description
CGNAME	Mandatory	string	Consistency group name. **Note:**This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CAPACITYBYTE	Mandatory	string(uint64)	Available host capacity of a HyperMetro pair resource, in bytes. **Unit:**bytes
SYNCLEFTTIME	Mandatory	string(uint32)	Time remaining for synchronization. **Unit:**seconds **Note:**"-1" indicates an invalid value.
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: enabled false: disabled
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000. **Unit:**ms
HDRINGID	Mandatory	string	DR Star trio ID.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30. **Unit:**seconds

Example

- Batch creating HyperMetro pairs.

```
Request: POST /deviceManager/rest/210235843910E6000009/HyperMetroPair/batch
[
```

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```
  {
        "DOMAINID": "e4c2d1eaf02c0100",
        "HCRESOURCETYPE": 1,
        "ISFIRSTSYNC": true,
        "RECOVERYPOLICY": "1",
        "SPEED": "2",
        "LOCALOBJID": "216",
        "REMOTEOBJID": "514"
  },
  {
        "DOMAINID": "e4c2d1eaf02c0100",
        "HCRESOURCETYPE": 1,
        "ISFIRSTSYNC": true,
        "RECOVERYPOLICY": "1",
        "SPEED": "2",
        "LOCALOBJID": "217",
        "REMOTEOBJID": "515"
  }
]

Response:
{
  "data": [{
        "CAPACITYBYTE": "10737418240",
        "CGID": "",
        "CGNAME": "",
        "DOMAINID": "e4c2d1eaf02c0100",
        "DOMAINNAME": "shuanyu",
        "ENDTIME": "1",
        "HCRESOURCETYPE": "1",
        "HEALTHSTATUS": "1",
        "HDRINGID": "--",
        "ID": "e4c2d1eaf02c0001",
        "ISINCG": "false",
        "ISPRIMARY": "true",
         "ISISOLATION":"true",
         "ISISOLATIONTHRESHOLDTIME":"1000",
        "LINKSTATUS": "1",
        "LOCALDATASTATE": "1",
        "LOCALHOSTACCESSSTATE": "3",
        "LOCALOBJID": "216",
        "LOCALOBJNAME": "lsm94_LUN2170000",
        "RECOVERYPOLICY": "1",
        "REMOTEDATASTATE": "2",
        "REMOTEHOSTACCESSSTATE": "1",
        "REMOTEOBJID": "514",
        "REMOTEOBJNAME": "LSM_LUN5150000",
        "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
        "RUNNINGSTATUS": "41",
        "SPEED": "2",
        "STARTTIME": "-1",
        "SYNCDIRECTION": "1",
        "SYNCLEFTTIME": "-1",
        "SYNCPROGRESS": "1",
        "TYPE": 15361,
        "WRITESECONDARYTIMEOUT": "30",
        "vstorePairId": "--"
        "error": {
            "code": 0,
            "description": "0"
        }
    },
    {
        "CAPACITYBYTE": "10737418240",
        "CGID": "",
        "CGNAME": "",
        "DOMAINID": "e4c2d1eaf02c0100",
        "DOMAINNAME": "shuanyu",
        "ENDTIME": "1",
```

```
            "HCRESOURCETYPE": "1",
            "HEALTHSTATUS": "1",
            "HDRINGID": "--",
            "ID": "e4c2d1eaf02c0002",
            "ISINCG": "false",
            "ISPRIMARY": "true",
             "ISISOLATION":"true",
             "ISISOLATIONTHRESHOLDTIME":"1000",
            "LINKSTATUS": "1",
            "LOCALDATASTATE": "1",
            "LOCALHOSTACCESSSTATE": "3",
            "LOCALOBJID": "216",
            "LOCALOBJNAME": "lsm94_LUN2170001",
            "RECOVERYPOLICY": "1",
            "REMOTEDATASTATE": "2",
            "REMOTEHOSTACCESSSTATE": "1",
            "REMOTEOBJID": "514",
            "REMOTEOBJNAME": "LSM_LUN5150001",
            "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d1",
            "RUNNINGSTATUS": "41",
            "SPEED": "2",
            "STARTTIME": "-1",
            "SYNCDIRECTION": "1",
            "SYNCLEFTTIME": "-1",
            "SYNCPROGRESS": "1",
            "TYPE": 15361,
            "WRITESECONDARYTIMEOUT": "30",
            "vstorePairId": "--"
            "error": {
                "code": 0,
                "description": "0"
            }
        },
    ]
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.8.1.2 Interface for Creating HyperMetro Pair Information

Function

This interface is used to create a HyperMetro pair.

HighRisk

You are about to create a HyperMetro pair. This operation will cause the data on the local resource to overwrite that on the remote resource. If you perform synchronization at the "Highest" speed, check the performance of remote devices and whether the link bandwidth between local and remote arrays is sufficient. If you select the "Highest" synchronization speed, the host latency may increase, and HyperMetro pairs will be disconnected during synchronization. You are advised to select the "Highest" synchronization speed only during off-peak hours. If the host type is Windows, enable automatic LUN SN synchronization on both storage systems before configuring HyperMetro. Otherwise, one HyperMetro LUN may be identified as two disks on the host application side. For details, see "What Can I Do If the Host Identifies One HyperMetro LUN as Two Disks?" in the "HyperMetro Feature Guide for Block" of the desired product model.

Suggestion: Before performing this operation, ensure that the parameters are correct to prevent data overwriting.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DOMAINID	Mandatory	string	HyperMetro domain ID.
HCRESOURCETYPE	Mandatory	enum	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
ISFIRSTSYNC	Optional	bool	Indicates whether initial synchronization is performed. **The value is described as follows:** false: no initial synchronization true: initial synchronization **Default:**false: no initial synchronization
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPEED	Optional	enum	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
isIsolation	Optional	bool	Whether to enable the HyperMetro pair isolation function. **The value is described as follows:** false: disabled true: enabled **Default:**false: disabled
isolationThreshold-Time	Optional	uint32	Isolation threshold of a HyperMetro pair. **The value is described as follows:** The minimum value is 10 ms, and the maximum value is 30000 ms. **Default:**200 ms

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15361: HyperMetro pair
ID	Mandatory	string	HyperMetro pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 100: To be synchronized 23: Synchronizing 0: Unknown 1: Normal 41: Paused 94: Faulty 93: Force started 35: Invalid **Note:**If initial synchronization is not performed when a HyperMetro pair is created, the running status is "Paused" after the creation is complete and it changes to "Normal" in an asynchronous task. There is a transition of running status from "Paused" to "Normal".
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected

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Parameter	Mandatory/ Conditional	Type	Description
HCRESOURCETYPE	Mandatory	string(enum)	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
LOCALOBJNAME	Mandatory	string	Local object name.
REMOTEOBJNAME	Mandatory	string	Remote object name.
RESOURCEWWN	Mandatory	string	Resource WWN (applicable to SAN only).
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is primary end. **The value is described as follows:** true: primary false: not primary **Note:**A/P indicates the primary end, and A/A indicates the preferential quorum end.
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
LOCALDATASTATE	Mandatory	string(enum)	Local resource data status. **The value is described as follows:** 1: consistent 2: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEDATASTATE	Mandatory	string(enum)	Remote resource data status. **The value is described as follows:** 1: consistent 2: inconsistent
LOCALHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the local resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
REMOTEHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the remote resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
SYNCPROGRESS	Mandatory	string(uint32)	Synchronization progress. **Note:** This field is returned when the HyperMetro pair running status is synchronizing. If the HyperMetro pair has not been synchronized, -1 is returned.
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 1: from local to remote 2: from remote to local

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Mandatory	string(enum)	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
STARTTIME	Mandatory	string(uint64)	Start time of the last synchronization. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ENDTIME	Mandatory	string(uint64)	End time of the last synchronization. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ISINCG	Mandatory	string(bool)	Indicates whether a HyperMetro pair is in a consistency group. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
CGID	Mandatory	string	Consistency group ID. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CGNAME	Mandatory	string	Consistency group name. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CAPACITYBYTE	Mandatory	string(uint64)	Capacity available to the host of the HyperMetro pair resource (byte).
SYNCLEFTTIME	Mandatory	string(uint32)	Time remaining for synchronization. **Note:**"-1" indicates an invalid value.
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: enabled false: disabled
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000.
HDRINGID	Mandatory	string	DR Star trio ID.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.

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Parameter	Mandatory/ Conditional	Type	Description
amoutDateCopy	Conditional	uint64	Amount of data to be copied.
VSTOREPAIRID	Mandatory	string	ID of a vStore pair.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
CONFIGSTATUS	Mandatory	string(enum)	Configuration status.
RMTVSTOREID	Mandatory	string	Remote vStore ID.
preferredSitePolicyFor-Arbitration	Conditional	enum	Modify the preferred site policy. **The value is described as follows:** 1: user-defined 2: based on service I/Os

Example

- Creating a HyperMetro pair.

```
Request: POST /deviceManager/rest/210235843910E6000009/HyperMetroPair
{
        "DOMAINID": "c4ff1febf5a10100",
        "HCRESOURCETYPE": 1,
        "ISFIRSTSYNC": true,
        "RECOVERYPOLICY": "1",
        "SPEED": "2",
        "LOCALOBJID": "10",
        "REMOTEOBJID": "15"
}

Response: {
    "data": {
        "CAPACITYBYTE": "107374182400",
        "CGID": "",
        "CGNAME": "",
        "CONFIGSTATUS": "255",
        "DOMAINID": "c4ff1febf5a10100",
        "DOMAINNAME": "qocrUApw",
        "ENDTIME": "-1",
        "HCRESOURCETYPE": "1",
        "HDRINGID": "--",
        "HEALTHSTATUS": "1",
        "ID": "2100c4ff1febf5a10000000000000005",
        "ISINCG": "false",
        "ISISOLATION": "false",
        "ISISOLATIONTHRESHOLDTIME": "200",
        "ISPRIMARY": "true",
        "LINKSTATUS": "1",
        "LOCALDATASTATE": "1",
        "LOCALHOSTACCESSSTATE": "3",
        "LOCALOBJID": "10",
        "LOCALOBJNAME": "LUN011",
        "RECOVERYPOLICY": "1",
```

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```
        "REMOTEDATASTATE": "2",
        "REMOTEHOSTACCESSSTATE": "1",
        "REMOTEOBJID": "15",
        "REMOTEOBJNAME": "LUN011",
        "RESOURCEWWN": "6c4ff1f100ebf5a103b3d73e0000000a",
        "RMTVSTOREID": "0",
        "RUNNINGSTATUS": "41",
        "SPEED": "2",
        "STARTTIME": "-1",
        "SYNCDIRECTION": "1",
        "SYNCLEFTTIME": "-1",
        "SYNCPROGRESS": "-1",
        "TYPE": 15361,
        "VSTOREPAIRID": "--",
        "WRITESECONDARYTIMEOUT": "30",
        "amoutDateCopy": "--",
        "preferredSitePolicyForArbitration": "1",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.8.2 Delete

2.9.8.2.1 Interface for Deleting a HyperMetro Pair

Function

This interface is used to delete a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISLOCALDELETE	Optional	bool	Whether a HyperMetro task can be locally deleted. **The value is described as follows:** true: yes false: no **Default:**false: no **Note:**Only the configuration information about the local device is deleted when the HyperMetro pair fails or the remote device is disconnected.
ISREFRESHWWN	Optional	bool	Whether the device LUN WWNs can be refreshed. **The value is described as follows:** true: yes false: no **Default:**true: yes **Note:**After the HyperMetro pair is deleted, you are advised to refresh the LUN WWN to ensure that the LUN WWN is unique and avoid LUN WWN conflicts between two devices when local deletion is performed on the device that does not provide services.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isOnlineDeleting	Optional	bool	Indicates whether to delete a pair online. **The value is described as follows:** 0: offline deletion 1: online deletion **Default:**1: online deletion **Note:**This parameter is valid only for NAS HyperMetro pairs.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Deleting a HyperMetro pair.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/HyperMetroPair/1?
ISLOCALDELETE=false&ISREFRESHWWN=true

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.2.2 Interface for Deleting a vStore Pair

Function

This interface is used to delete a vStore pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore_pair/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	vStore pair ID.
isLocalDelete	Optional	bool	Whether to delete the vStore pair locally. **The value is described as follows:** true: yes false: no **Default:**false: no **Note:**Configurations of the local device are deleted when the vStore pair fails or the remote device is disconnected.

Result

N/A

Example

- Deleting a vStore pair.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/vstore_pair/1?
ISLOCALDELETEDONLY=false

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.3 Modify

2.9.8.3.1 Interface for Changing the IP Working Mode of a HyperMetro vStore Pair

Function

Change the IP working mode of a HyperMetro vStore pair.

HighRisk

You are about to change the IP working mode of the NAS HyperMetro vStore pair. This operation can change the IP working mode of the vStore pair to the preferred

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mode before the NAS HyperMetro pair is deleted online or change the IP working mode of the vStore pair to the balancing mode after the NAS HyperMetro pair is deleted online. After this operation, services of non-HyperMetro file systems at the non-preferred end may be interrupted.

Suggestion: Before changing the IP working mode to the preferred mode, check whether the NAS HyperMetro pair is being deleted online and ensure that services of non-HyperMetro file systems at the non-preferred end are stopped.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/change_ip_work_mode

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	vStore pair ID. **The value is described as follows:** string **Length:**128
isLocalPrefer	Conditional	enum	IP working mode of the local site in a HyperMetro vStore pair. **The value is described as follows:** The value can be 1 (non-preferred) or 2 (preferred). **Note:**This parameter is mandatory when "ipWorkMode" is set to the preferred working mode.

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Parameter	Mandatory/Optional/Conditional	Type	Description
isLocalChange	Optional	bool	Whether to change the IP working mode of a HyperMetro vStore pair at one site. **The value is described as follows:** false: dual-site change true: single-site change **Default:**false
ipWorkMode	Mandatory	enum	IP working mode of a HyperMetro vStore pair. **The value is described as follows:** 1: load balancing working mode 2: preferred working mode

Result

N/A

Usage Guidelines

None.

Example

- Change the IP working mode of a HyperMetro vStore pair.

```
Request: PUT /deviceManager/rest/ST000000000000000049/VSTORE_PAIR/change_ip_work_mode
{
   "ID":"2100630000040506000000600000004",
   "ipWorkMode":"2",
   "isLocalPrefer":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.8.3.2 Interface for Modifying a HyperMetro Pair

Function

This interface is used to modify a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
SPEED	Optional	enum	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
ISISOLATION	Optional	bool	Isolation switch. **The value is described as follows:** true: open false: closed
ISISOLATIONTHRE-SHOLDTIME	Optional	uint32	Isolation threshold. **The value is described as follows:** 10 to 30000.

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Parameter	Mandatory/Optional/Conditional	Type	Description
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** The value is from 1 to 1024, expressed in MB/s.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Modifying a HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/1
{
   "RECOVERYPOLICY": "2",
   "SPEED":"2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.8.3.3 Interface for Modifying the Preferred Site Policy for Arbitration of a HyperMetro Pair

Function

Modify the policy for specifying a preferred site.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/MODIFY_PREFERRED_POLICY

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
preferredSitePolicyFor-Arbitration	Mandatory	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined; 2: determined based on service I/Os

Result

N/A

Example

- Modify the preferred site policy of the HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/
MODIFY_PREFERRED_POLICY
{
    "ID": "13",
    "preferredSitePolicyForArbitration": 2
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.4 Query

2.9.8.4.1 Interface for Batch Querying HyperMetro Pair Information

Function

This interface is used to batch query HyperMetro pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: LOCALOBJNAME, ID, LOCALOBJID, REMOTEOBJID, HEALTHSTATUS, RUNNINGSTATUS, ISPRIMARY, HDRINGID and ISINCG.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15361: HyperMetro pair
ID	Mandatory	string	HyperMetro pair ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Force started 100: To be synchronized 119: Creating
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected

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Parameter	Mandatory/ Conditional	Type	Description
HCRESOURCETYPE	Mandatory	string(enum)	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN 2: file system
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
LOCALOBJNAME	Mandatory	string	Local object name.
REMOTEOBJNAME	Mandatory	string	Remote object name.
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is the primary end. **The value is described as follows:** true: primary false: secondary **Note:**A/P indicates the primary end, and A/A indicates the preferential quorum end.
RESOURCEWWN	Mandatory	string	Resource WWN (applicable to SAN only).
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic (returned only in SAN HyperMetro scenarios) 2: manual (returned only in SAN HyperMetro scenarios) 255: The recovery policy of the HyperMetro domain prevails. The value is returned only in NAS HyperMetro scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
LOCALDATASTATE	Mandatory	string(enum)	Local resource data status. **The value is described as follows:** 1: consistent 2: inconsistent
REMOTEDATASTATE	Mandatory	string(enum)	Remote resource data status. **The value is described as follows:** 1: consistent 2: inconsistent
LOCALHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the local resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
REMOTEHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the remote resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
SYNCPROGRESS	Mandatory	string(uint32)	Synchronization progress. **Note:** This parameter is returned when the HyperMetro pair running status is synchronizing. If the HyperMetro pair has not been synchronized, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 0: no data synchronization 1: from local to remote 2: from remote to local
SPEED	Conditional	string(enum)	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**This field is mutually exclusive with the bandwidth field.
STARTTIME	Mandatory	string(uint64)	Start time of the last synchronization. The local time is returned by default. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
ENDTIME	Mandatory	string(uint64)	End time of the last synchronization. The local time is returned by default. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ISINCG	Mandatory	string(bool)	Indicates whether a HyperMetro pair is in a consistency group. **The value is described as follows:** true: belongs to the consistency group. false: does not belong to the consistency group.
CGID	Mandatory	string	ID of the owning consistency group. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CGNAME	Mandatory	string	Name of the owning consistency group. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITYBYTE	Mandatory	string(uint64)	Capacity available to the host of the HyperMetro pair resource (byte).
SYNCLEFTTIME	Mandatory	string(uint32)	Time remaining for synchronization. **Note:**"-1" indicates an invalid value.
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: open false: closed
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000.
HDRINGID	Mandatory	string	DR Star trio ID.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.
bandwidth	Conditional	uint64	Bandwidth. **Note:**This field is mutually exclusive with the SPEED field.
CONFIGSTATUS	Conditional	string(enum)	Configuration status. **The value is described as follows:** 0: Normal 1: Synchronizing 2: To be synchronized **Note:**This field is returned for NAS HyperMetro.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID. **Note:**This field is returned for NAS HyperMetro.
amoutDateCopy	Mandatory	string(uint64)	Amount of data to be copied. **Note:**This field is returned for NAS HyperMetro.
vstoreName	Mandatory	string	vStore name. **Note:**This field is returned for NAS HyperMetro.
preferredSitePolicyFor-Arbitration	Conditional	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined 2: based on service I/Os **Note:**This field is returned for SAN HyperMetro.
vstorePairId	Conditional	string	ID of the vStore pair. **Note:**This field is returned for NAS HyperMetro.
RMTVSTOREID	Mandatory	string	Remote vStore ID.

Example

- Batch querying HyperMetro pairs.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroPair?range=[0-100]

Response: {
   "data": [
      {
         "CAPACITYBYTE": "10737418240",
         "CGID": "",
         "CGNAME": "",
         "CONFIGSTATUS": "0",
         "DOMAINID": "e4c2d1eaf02c0100",
         "DOMAINNAME": "shuanyu",
         "ENDTIME": "1",
         "HCRESOURCETYPE": "1",
         "HEALTHSTATUS": "1",
```

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```
            "HDRINGID": "--",
            "ID": "e4c2d1eaf02c0001",
            "ISINCG": "false",
            "ISISOLATION": "false",
            "ISISOLATIONTHRESHOLDTIME": "1000",
            "ISPRIMARY": "true",
            "LINKSTATUS": "1",
            "LOCALDATASTATE": "1",
            "LOCALHOSTACCESSSTATE": "3",
            "LOCALOBJID": "216",
            "LOCALOBJNAME": "lsm94_LUN2170000",
            "RECOVERYPOLICY": "1",
            "REMOTEDATASTATE": "2",
            "REMOTEHOSTACCESSSTATE": "1",
            "REMOTEOBJID": "514",
            "REMOTEOBJNAME": "LSM_LUN5150000",
            "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
            "RMTVSTOREID": "0",
            "RUNNINGSTATUS": "41",
            "SPEED": "2",
            "STARTTIME": "-1",
            "SYNCDIRECTION": "1",
            "SYNCLEFTTIME": "-1",
            "SYNCPROGRESS": "1",
            "TYPE": 15361,
            "VSTOREPAIRID": "--",
            "WRITESECONDARYTIMEOUT": "30",
            "amoutDateCopy": "--",
            "preferredSitePolicyForArbitration": "2",
            "vstoreId": "--",
            "vstoreName": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Batch querying HyperMetro pairs. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroPair?range=[0-100]?
timeConversion=0

Response: {
    "data": [
        {
            "CAPACITYBYTE": "10737418240",
            "CGID": "",
            "CGNAME": "",
            "CONFIGSTATUS": "0",
            "DOMAINID": "e4c2d1eaf02c0100",
            "DOMAINNAME": "shuanyu",
            "ENDTIME": "1",
            "HCRESOURCETYPE": "1",
            "HEALTHSTATUS": "1",
            "HDRINGID": "--",
            "ID": "e4c2d1eaf02c0001",
            "ISINCG": "false",
            "ISISOLATION": "false",
            "ISISOLATIONTHRESHOLDTIME": "1000",
            "ISPRIMARY": "true",
            "LINKSTATUS": "1",
            "LOCALDATASTATE": "1",
            "LOCALHOSTACCESSSTATE": "3",
            "LOCALOBJID": "216",
            "LOCALOBJNAME": "lsm94_LUN2170000",
            "RECOVERYPOLICY": "1",
            "REMOTEDATASTATE": "2",
            "REMOTEHOSTACCESSSTATE": "1",
            "REMOTEOBJID": "514",
```

```
            "REMOTEOBJNAME": "LSM_LUN5150000",
            "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
            "RMTVSTOREID": "0",
            "RUNNINGSTATUS": "41",
            "SPEED": "2",
            "STARTTIME": "-1",
            "SYNCDIRECTION": "1",
            "SYNCLEFTTIME": "-1",
            "SYNCPROGRESS": "1",
            "TYPE": 15361,
            "VSTOREPAIRID": "--",
            "WRITESECONDARYTIMEOUT": "30",
            "amoutDateCopy": "--",
            "preferredSitePolicyForArbitration": "2",
            "vstoreId": "--",
            "vstoreName": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.8.4.2 Interface for Querying Associated HyperMetro Pair Information

Function

Query HyperMetro pairs related to LUNs or file systems.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type of the associated object (LUN/file system). **The value is described as follows:** 11: LUN 40: file system
ASSOCIATEOBJID	Mandatory	string	Associated object ID (LUN/file system ID).

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15361: HyperMetro pair
ID	Mandatory	string	HyperMetro pair ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Force started 100: To be synchronized 119: Creating
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected
HCRESOURCETYPE	Mandatory	string(enum)	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
LOCALOBJNAME	Mandatory	string	Local object name.
REMOTEOBJNAME	Mandatory	string	Remote object name.

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Parameter	Mandatory/ Conditional	Type	Description
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is the primary end. **The value is described as follows:** true: primary false: secondary **Note:**A/P indicates the primary end and A/A indicates the preferred end in arbitration.
RESOURCEWWN	Mandatory	string	Resource WWN (applicable to SAN only).
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic (returned only in SAN HyperMetro scenarios) 2: manual (returned only in SAN HyperMetro scenarios) 255: The recovery policy of the HyperMetro domain prevails. The value is returned only in NAS HyperMetro scenarios.
LOCALDATASTATE	Mandatory	string(enum)	Local resource data status. **The value is described as follows:** 1: consistent 2: inconsistent
REMOTEDATASTATE	Mandatory	string(enum)	Remote resource data status. **The value is described as follows:** 1: consistent 2: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
LOCALHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the local resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
REMOTEHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the remote resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
SYNCPROGRESS	Mandatory	string(uint32)	Synchronization progress.
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 0: no data synchronization 1: from local to remote 2: from remote to local
SPEED	Conditional	string(enum)	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**This field is mutually exclusive with the bandwidth field.

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Parameter	Mandatory/ Conditional	Type	Description
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.
STARTTIME	Mandatory	string(uint64)	Start time of the last synchronization. The local time is returned by default. **Note:** This parameter is returned when the HyperMetro pair running status is synchronizing. If the HyperMetro pair has not been synchronized, -1 is returned.
ENDTIME	Mandatory	string(uint64)	End time of the last synchronization. The local time is returned by default. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ISINCG	Mandatory	string(bool)	Indicates whether a HyperMetro pair is in a consistency group. **The value is described as follows:** true: belongs to the consistency group. false: does not belong to the consistency group.

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Parameter	Mandatory/ Conditional	Type	Description
CGID	Mandatory	string	Consistency group ID. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CGNAME	Mandatory	string	Consistency group name. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CAPACITYBYTE	Mandatory	string(uint64)	Capacity available to the host of the HyperMetro pair resource (byte).
SYNCLEFTTIME	Mandatory	string(uint32)	Time remaining for synchronization. **Note:**"-1" indicates an invalid value.
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: open false: close
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000.
HDRINGID	Mandatory	string	DR Star trio ID.
bandwidth	Conditional	uint64	Bandwidth. **Note:**This field is mutually exclusive with the SPEED field.
amoutDateCopy	Conditional	string(uint64)	Amount of data to be copied.

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Parameter	Mandatory/ Conditional	Type	Description
VSTOREPAIRID	Mandatory	string	ID of a vStore pair.
VSTOREID	Mandatory	string	vStore ID.
VSTORENAME	Mandatory	string	vStore name.
CONFIGSTATUS	Conditional	string(enum)	Configuration status.
preferredSitePolicyFor-Arbitration	Conditional	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined 2: based on service I/Os **Note:**This field is returned for SAN HyperMetro.

Example

- Querying HyperMetro pairs associated with LUNs.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroPair/associate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=216

Response: {
   "data": [
      {
         "CAPACITYBYTE": "10737418240",
         "CGID": "",
         "CGNAME": "",
         "CONFIGSTATUS": "255",
         "DOMAINID": "e4c2d1eaf02c0100",
         "DOMAINNAME": "shuanyu",
         "ENDTIME": "1",
         "HCRESOURCETYPE": "1",
         "HEALTHSTATUS": "1",
         "HDRINGID": "--",
         "ID": "e4c2d1eaf02c0001",
         "ISINCG": "false",
         "ISPRIMARY": "true",
         "ISISOLATION": "true",
         "ISISOLATIONTHRESHOLDTIME": "1000",
         "LINKSTATUS": "1",
         "LOCALDATASTATE": "1",
         "LOCALHOSTACCESSSTATE": "3",
         "LOCALOBJID": "216",
         "LOCALOBJNAME": "lsm94_LUN2170000",
         "RECOVERYPOLICY": "1",
         "REMOTEDATASTATE": "2",
         "REMOTEHOSTACCESSSTATE": "1",
         "REMOTEOBJID": "514",
         "REMOTEOBJNAME": "LSM_LUN5150000",
         "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
         "RUNNINGSTATUS": "41",
         "SPEED": "2",
         "STARTTIME": "-1",
```

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```
            "SYNCDIRECTION": "1",
            "SYNCLEFTTIME": "-1",
            "SYNCPROGRESS": "1",
            "TYPE": 15361,
            "VSTOREPAIRID": "2100250000040506000000600000000",
            "WRITESECONDARYTIMEOUT": "30",
            "amoutDateCopy": "--",
            "preferredSitePolicyForArbitration": "2",
            "VSTOREID": "0",
            "VSTORENAME": "vst1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying HyperMetro pairs associated with LUNs. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroPair/associate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=216&timeConversion=0

Response: {
    "data": [
        {
            "CAPACITYBYTE": "10737418240",
            "CGID": "",
            "CGNAME": "",
            "CONFIGSTATUS": "255",
            "DOMAINID": "e4c2d1eaf02c0100",
            "DOMAINNAME": "shuanyu",
            "ENDTIME": "1",
            "HCRESOURCETYPE": "1",
            "HEALTHSTATUS": "1",
            "HDRINGID": "--",
            "ID": "e4c2d1eaf02c0001",
            "ISINCG": "false",
            "ISPRIMARY": "true",
            "ISISOLATION": "true",
            "ISISOLATIONTHRESHOLDTIME": "1000",
            "LINKSTATUS": "1",
            "LOCALDATASTATE": "1",
            "LOCALHOSTACCESSSTATE": "3",
            "LOCALOBJID": "216",
            "LOCALOBJNAME": "lsm94_LUN2170000",
            "RECOVERYPOLICY": "1",
            "REMOTEDATASTATE": "2",
            "REMOTEHOSTACCESSSTATE": "1",
            "REMOTEOBJID": "514",
            "REMOTEOBJNAME": "LSM_LUN5150000",
            "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
            "RUNNINGSTATUS": "41",
            "SPEED": "2",
            "STARTTIME": "-1",
            "SYNCDIRECTION": "1",
            "SYNCLEFTTIME": "-1",
            "SYNCPROGRESS": "1",
            "TYPE": 15361,
            "VSTOREPAIRID": "2100250000040506000000600000000",
            "WRITESECONDARYTIMEOUT": "30",
            "amoutDateCopy": "--",
            "preferredSitePolicyForArbitration": "2",
            "VSTOREID": "0",
            "VSTORENAME": "vst1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
```

```
  }
}
```

2.9.8.4.3 Interface for Querying HyperMetro Pair Information

Function

This interface is used to query a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1
vstoreId	Optional	string	vStore ID. **Length:**256 **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15361: HyperMetro pair
ID	Mandatory	string	HyperMetro pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Force started 100: To be synchronized 119: Creating
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected
HCRESOURCETYPE	Mandatory	string(enum)	Primary resource type of the HyperMetro pair. **The value is described as follows:** 1: LUN
LOCALOBJID	Mandatory	string	Local object ID.
REMOTEOBJID	Mandatory	string	Remote object ID.
LOCALOBJNAME	Mandatory	string	Local object name.
REMOTEOBJNAME	Mandatory	string	Remote object name.

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Parameter	Mandatory/ Conditional	Type	Description
ISPRIMARY	Mandatory	string(bool)	Indicates whether it is the primary end. **The value is described as follows:** true: primary false: secondary **Note:**A/P indicates the primary end, and A/A indicates the preferential quorum end.
RESOURCEWWN	Mandatory	string	Resource WWN (applicable to SAN only).
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. **The value is described as follows:** 1: automatic (returned only in SAN HyperMetro scenarios) 2: manual (returned only in SAN HyperMetro scenarios) 255: The recovery policy of the HyperMetro domain prevails. The value is returned only in NAS HyperMetro scenarios.
LOCALDATASTATE	Mandatory	string(enum)	Local resource data status. **The value is described as follows:** 1: consistent 2: inconsistent
REMOTEDATASTATE	Mandatory	string(enum)	Remote resource data status. **The value is described as follows:** 1: consistent 2: inconsistent

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Parameter	Mandatory/ Conditional	Type	Description
LOCALHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the local resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
REMOTEHOSTACCESS-STATE	Mandatory	string(enum)	Access state of the remote resource host. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
SYNCPROGRESS	Mandatory	string(uint32)	Synchronization progress. **Note:** This parameter is returned when the HyperMetro pair running status is synchronizing. If the HyperMetro pair has not been synchronized, -1 is returned.
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 0: no data synchronization 1: from local to remote 2: from remote to local

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Parameter	Mandatory/ Conditional	Type	Description
SPEED	Conditional	string(enum)	Synchronization rate of the HyperMetro pair. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**This field is mutually exclusive with the bandwidth field.
STARTTIME	Mandatory	string(uint64)	Start time of the last synchronization. The local time is returned by default. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.
ENDTIME	Mandatory	string(uint64)	End time of the last synchronization. The local time is returned by default. **Note:** This field is returned if the HyperMetro pair has been synchronized. If the HyperMetro pair has not been synchronized, -1 is returned.

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Parameter	Mandatory/ Conditional	Type	Description
ISINCG	Mandatory	string(bool)	Indicates whether a HyperMetro pair is in a consistency group. **The value is described as follows:** true: belongs to the consistency group. false: does not belong to the consistency group.
CGID	Mandatory	string	Consistency group ID. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CGNAME	Mandatory	string	Consistency group name. **Note:** This field is returned if the HyperMetro pair is in a consistency group. If the HyperMetro pair is not in a consistency group, "" is returned.
CAPACITYBYTE	Mandatory	string(uint64)	Capacity available to the host of the HyperMetro pair resource (byte).
SYNCLEFTTIME	Conditional	string(uint32)	Time remaining for synchronization. **Note:** "-1" indicates an invalid value. This parameter is returned when the pair is in the synchronizing state.

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Parameter	Mandatory/ Conditional	Type	Description
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: open false: closed
HDRINGID	Mandatory	string	DR Star trio ID.
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.
bandwidth	Conditional	uint64	Bandwidth. **Note:**This field is mutually exclusive with the SPEED field.
amoutDateCopy	Conditional	uint64	Amount of data to be copied.
VSTOREPAIRID	Mandatory	string	vStore pair ID.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
CONFIGSTATUS	Conditional	string(enum)	Configuration status. **The value is described as follows:** 0: Normal 1: Synchronizing 2: To be synchronized **Note:**This field is returned for NAS HyperMetro.

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Parameter	Mandatory/ Conditional	Type	Description
preferredSitePolicyFor-Arbitration	Conditional	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined 2: based on service I/Os **Note:**This field is returned for SAN HyperMetro.
RMTVSTOREID	Conditional		Remote vStore ID.

Example

- Querying a HyperMetro pair.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroPair/e4c2d1eaf02c0001

Response: {
   "data": {
      "CAPACITYBYTE": "10737418240",
      "CGID": "",
      "CGNAME": "",
      "CONFIGSTATUS": "0",
      "DOMAINID": "e4c2d1eaf02c0100",
      "DOMAINNAME": "shuanyu",
      "ENDTIME": "1",
      "HCRESOURCETYPE": "1",
      "HEALTHSTATUS": "1",
      "HDRINGID": "--",
      "ID": "e4c2d1eaf02c0001",
      "ISINCG": "false",
      "ISPRIMARY": "true",
      "ISISOLATION": "true",
      "ISISOLATIONTHRESHOLDTIME": "1000",
      "LINKSTATUS": "1",
      "LOCALDATASTATE": "1",
      "LOCALHOSTACCESSSTATE": "3",
      "LOCALOBJID": "216",
      "LOCALOBJNAME": "lsm94_LUN2170000",
      "RECOVERYPOLICY": "1",
      "REMOTEDATASTATE": "2",
      "REMOTEHOSTACCESSSTATE": "1",
      "REMOTEOBJID": "514",
      "REMOTEOBJNAME": "LSM_LUN5150000",
      "RESOURCEWWN": "6e4c2d1100eaf02c04fa5287000000d8",
      "RMTVSTOREID": "2",
      "RUNNINGSTATUS": "41",
      "SPEED": "2",
      "STARTTIME": "-1",
      "SYNCDIRECTION": "1",
      "SYNCLEFTTIME": "-1",
      "SYNCPROGRESS": "1",
      "TYPE": 15361,
      "VSTOREPAIRID": "2100250000040506000000600000000",
      "WRITESECONDARYTIMEOUT": "30",
      "amoutDateCopy": "--",
      "vstoreId": "0",
```

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```
        "vstoreName": "vst1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.8.4.4 Interface for Querying the Number of HyperMetro Pair Information

Function

Interface for querying the number of HyperMetro pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters LOCALOBJNAME, ID, LOCALOBJID, REMOTEOBJID, HEALTHSTATUS, RUNNINGSTATUS, ISPRIMARY, HCRESOURCETYPE, HDRINGID, and ISINCG are supported
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried HyperMetro pairs.

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Example

- Querying the number of HyperMetro pairs.

```
Request: GET /deviceManager/rest/1016964156/HyperMetroPair/count?filter=LOCALOBJNAME:test

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.8.5 Others

2.9.8.5.1 Interface for Batch Suspending HyperMetro Pairs

Function

This interface is used to batch suspend HyperMetro pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/disable_hcpair/batch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
ISPRIMARY	Optional	bool	Whether the site is preferred. **The value is described as follows:** true: preferred false: non-preferred **Default:**false: non-preferred
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.

Example

- Suspending HyperMetro pairs in batches.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/disable_hcpair/batch
[
    {
        "ID": "13",
        "ISPRIMARY":false
    },
    {
        "ID": "14",
        "ISPRIMARY":false
    }
]
Response:
{
    "data": [{"ID": "13","error": {
        "code": 0,
        "description": "0",
        "suggestion": ""
    }},{"ID": "14","error": {
        "code": 0,
        "description": "0",
        "suggestion": ""
    }}],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.5.2 Interface for Batch Synchronizing HyperMetro Pairs

Function

This interface is used to batch synchronize HyperMetro pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/synchronize_hcpair/batch

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Synchronizing HyperMetro pairs in batches.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/synchronize_hcpair/batch
[
    {
        "ID": "13"
    },
    {
        "ID": "14"
    }
]

Response:
{
    "data": [{"error": {
        "code": 0,
        "description": "0"
    }},{"error": {
        "code": 0,
        "description": "0"
    }}],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.5.3 Interface for Forcibly Starting a HyperMetro Pair

Function

This interface is used to forcibly start a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/startup_node

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Forcibly starting a HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/startup_node
{
    "ID": "13"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.5.4 Interface for Suspending a HyperMetro Pair

Function

This interface is used to suspend a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/disable_hcpair

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISPRIMARY	Optional	bool	Whether the site is preferred. **The value is described as follows:** true: Preferred false: Non-preferred **Default:**false: Non-preferred
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Suspending a HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/disable_hcpair
{
    "ID": "13",
    "ISPRIMARY":false
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.5.5 Interface for Switching the Priorities of the HyperMetro Pair

Function

This interface is used to switch the priorities of the HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/SWAP_HCPAIR

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Switching the priorities of the HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/SWAP_HCPAIR
{
    "ID": "13",
    "HCRESOURCETYPE": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.8.5.6 Interface for Synchronizing a HyperMetro Pair

Function

This interface is used to synchronize a HyperMetro pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroPair/synchronize_hcpair

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro pair ID.
vstoreId	Optional	string	vStore ID.

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Result

N/A

Example

- Synchronizing a HyperMetro pair.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroPair/synchronize_hcpair
{
    "ID": "13"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.9 quorum_server

2.9.9.1 Add

2.9.9.1.1 Interface for Creating a Quorum Server

Function

This interface is used to create a quorum server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Quorum server name. **The value is described as follows:** Contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **The value is described as follows:** A string of 0 to 127 characters. **Length:**0~127
SERVERIPA	Mandatory	string	Primary IP address of the quorum server.
SERVERPORTA	Optional	string	Port for the primary IP address of the quorum server. **The value is described as follows:** 1 to 65535. **Default:**30002
SERVERIPB	Optional	string	Secondary IP address of the quorum server.
SERVERPORTB	Optional	string	Port for the secondary IP address of the quorum server. **The value is described as follows:** 1 to 65535. **Note:**The port is not modified if the value delivered is null.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15363: quorum server
ID	Mandatory	string	Quorum server ID.
NAME	Mandatory	string	Quorum server name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: online 28: offline
DESCRIPTION	Mandatory	string	Description.
SERVERIPA	Mandatory	string	Primary IP address of the quorum server.
SERVERPORTA	Mandatory	string	Port for the primary IP address of the quorum server.
SERVERIPB	Mandatory	string	Secondary IP address of the quorum server.
SERVERPORTB	Mandatory	string	Port for the secondary IP address of the quorum server.
DEVICESN	Mandatory	string	SN of the physical server.

Example

- Creating a quorum server.

```
Request: POST /deviceManager/rest/210235843910E6000009/QuorumServer
{
   "NAME": "112test",
   "SERVERIPA": "3.3.3.6",
   "SERVERPORTA": 30002
}
Response: {
   "data": {
      "DESCRIPTION": "",
      "DEVICESN": "ffffffffffffffff",
      "ID": "0",
      "NAME": "112test",
      "RUNNINGSTATUS": "28",
      "SERVERIPA": "3.3.3.6",
      "SERVERIPB": "",
      "SERVERPORTA": "30002",
      "SERVERPORTB": "",
      "TYPE": 15363
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.9.1.2 Interface for Creating a Quorum Server Link

Function

This interface is used to add a quorum server link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServerLink

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Type number of the managed object (quorum server). **The value is described as follows:** 15363: quorum server **Note:**This field is not used temporarily.
PARENTID	Mandatory	string	Quorum server ID.
LOCALCONTROLLERID	Optional	string	Identifier of the local controller.
LOCALPORTID	Optional	string	Physical port ID of the local controller. **Note:**The ID needs to be obtained through other interfaces, you can refer to: Interface for Batch Querying Ethernet Port Information. The LIF port is recommended.
QUORUMSERVERIP	Mandatory	string	IP address of the quorum server to be connected.

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Parameter	Mandatory/Optional/Conditional	Type	Description
lifPortName	Optional	string	Name or ID of a LIF port. **Note:**Either this parameter or LOCALPORTID must be set.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15365: quorum server link

Example

- Adding a quorum server link.

```
Request: POST /deviceManager/rest/210235843910E6000009/QuorumServerLink
{
   "PARENTTYPE": 15363,
   "PARENTID": "0",
   "LOCALCONTROLLERID": "0A",
   "LOCALPORTID": "1200024099",
   "QUORUMSERVERIP": "3.3.3.3"
}

Response:
{
   "data": {
      "TYPE": 15365
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.9.2 Delete

2.9.9.2.1 Interface for Deleting a Quorum Server

Function

This interface is used to delete a quorum server.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quorum server ID.

Result

N/A

Example

- Deleting a Quorum Server.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/QuorumServer/0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.9.2.2 Interface for Deleting a Quorum Server Link

Function

Delete a quorum server link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServerLink/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the quorum server link.

Result

N/A

Example

- Delete a quorum server link.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/QuorumServerLink/1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.9.3 Modify

2.9.9.3.1 Interface for Modifying a Quorum Server Information

Function

This interface is used to modify a quorum server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer/${id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value cannot be empty, and contains only 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~127
SERVERIPA	Optional	string	Primary IP address of the quorum server.
SERVERPORTA	Optional	string	Port for the primary IP address of the quorum server. **The value is described as follows:** 1 to 65535. **Note:**The port is not modified if the value delivered is null.
SERVERIPB	Optional	string	Secondary IP address of the quorum server.
SERVERPORTB	Optional	string	Port for the secondary IP address of the quorum server. **The value is described as follows:** 1 to 65535. **Note:**The port is not modified if the value delivered is null.
ID	Mandatory	string	Quorum server ID.

Result

N/A

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Example

- Modify a quorum server.

```
Request: PUT /deviceManager/rest/210235843910E6000009/QuorumServer/0
{
    "NAME": "QuorumServer_002",
    "SERVERIPA": "3.3.3.3",
    "SERVERPORTA": 30002
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.9.4 Query

2.9.9.4.1 Interface for Batch Querying Quorum Server Information

Function

This interface is used to batch query basic information about quorum servers.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15363: quorum server
ID	Mandatory	string	Quorum server ID.
USERNAME	Mandatory	string	User name.
NAME	Mandatory	string	Quorum server name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: online 28: offline
DESCRIPTION	Mandatory	string	Description.
SERVERIPA	Mandatory	string	Primary IP address of the quorum server.
SERVERPORTA	Mandatory	string	Port for the primary IP address of the quorum server.

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Parameter	Mandatory/ Conditional	Type	Description
SERVERIPB	Mandatory	string	Secondary IP address of the quorum server.
SERVERPORTB	Mandatory	string	Port for the secondary IP address of the quorum server.
DEVICESN	Mandatory	string	SN of the physical server.

Example

- Batch querying basic information about quorum servers.

```
Request: GET /deviceManager/rest/210235843910E6000009/QuorumServer?range=[0-100]

Response:
{
   "data": [
      {
         "DESCRIPTION": "",
         "DEVICESN": "ffffffffffffffff",
         "ID": "0",
         "NAME": "112test",
         "RUNNINGSTATUS": "28",
         "SERVERIPA": "3.3.3.6",
         "SERVERIPB": "",
         "SERVERPORTA": "30002",
         "SERVERPORTB": "",
         "TYPE": 15363,
         "USERNAME": ""
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.9.4.2 Interface for Batch Querying Quorum Server Link Information

Function

This interface is used to batch query basic information about quorum server links.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServerLink

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID and PARENTID are supported. **Note:**PARENTID::0 indicates the quorum server whose ID is 0.
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15365: quorum server link
ID	Mandatory	string	ID of the quorum server link.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type of the parent object: quorum server type. **The value is described as follows:** 15363: quorum server **Note:**The value is 0. Currently, the field is not used and the value is invalid.
PARENTID	Mandatory	string	ID of the parent object: quorum server ID.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down
LOCALCONTROLLERID	Mandatory	string	Identifier of the local controller.
LOCALPORTID	Mandatory	string	Physical port ID of the local controller.
LOCALCONTROLLER-NAME	Mandatory	string	Name of the local controller.
LOCALPORTNAME	Mandatory	string	Physical port name of the local controller.
QUORUMSERVERIP	Mandatory	string	IP address of the quorum server to be connected.
lifPortName	Mandatory	string	Logical port name.

Example

- Batch querying basic information about quorum server links.

```
Request: GET /deviceManager/rest/210235843910E6000009/QuorumServerLink

Response:
{
   "data": [
      {
         "ID": "0",
         "LOCALCONTROLLERID": "786432",
         "LOCALCONTROLLERNAME": "0A",
         "LOCALPORTID": "500000001",
```

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```
            "LOCALPORTNAME": "CTE0.B1.P1",
            "PARENTID": "0",
            "PARENTTYPE": 15363,
            "QUORUMSERVERIP": "3.3.3.3",
            "RUNNINGSTATUS": "10",
            "TYPE": 15365,
            "lifPortName":"CTE0.B1.P1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.9.4.3 Interface for Querying a Quorum Server Information

Function

This interface is used to query basic information about the quorum server.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quorum server ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15363: quorum server
ID	Mandatory	string	Quorum server ID.
USERNAME	Mandatory	string	User name.
NAME	Mandatory	string	Quorum server name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: online 28: offline
DESCRIPTION	Mandatory	string	Description.
SERVERIPA	Mandatory	string	Primary IP address of the quorum server.
SERVERPORTA	Mandatory	string	Port for the primary IP address of the quorum server.
SERVERIPB	Mandatory	string	Secondary IP address of the quorum server.
SERVERPORTB	Mandatory	string	Port for the secondary IP address of the quorum server.
DEVICESN	Mandatory	string	SN of the physical server.

Example

- Query basic information about the quorum server.

```
Request: GET /deviceManager/rest/210235843910E6000009/QuorumServer/0

Response:
{
   "data": {
      "DESCRIPTION": "",
      "DEVICESN": "ffffffffffffffff",
      "ID": "0",
      "NAME": "112test",
      "RUNNINGSTATUS": "28",
      "SERVERIPA": "3.3.3.6",
      "SERVERIPB": "",
      "SERVERPORTA": "30002",
      "SERVERPORTB": "",
      "TYPE": 15363,
      "USERNAME": ""
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.9.4.4 Interface for Querying a Quorum Server Link Information

Function

This interface is used to query basic information about the quorum server link.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServerLink/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quorum server link ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15365: quorum server link
ID	Mandatory	string	ID of the quorum server link.
PARENTTYPE	Mandatory	enum	Type of the parent object: quorum server type. **The value is described as follows:** 15363: quorum server **Note:**The value is 0. Currently, the field is not used and the value is invalid.
PARENTID	Mandatory	string	ID of the parent object: quorum server ID.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 10: Link up 11: Link down
LOCALCONTROLLERID	Mandatory	string	Identifier of the local controller.
LOCALPORTID	Mandatory	string	Physical port ID of the local controller.
LOCALCONTROLLER-NAME	Mandatory	string	Name of the local controller.
LOCALPORTNAME	Mandatory	string	Physical port name of the local controller.
QUORUMSERVERIP	Mandatory	string	IP address of the quorum server to be connected.
lifPortName	Mandatory	string	Logical port name.

Example

- Querying quorum server link information.

```
Request: GET /deviceManager/rest/210235843910E6000009/QuorumServerLink/0

Response:
{
   "data": {
      "ID": "0",
      "LOCALCONTROLLERID": "0B",
      "LOCALCONTROLLERNAME": "CTE0.B",
      "LOCALPORTID": "500000001",
      "LOCALPORTNAME": "CTE0.B1.P1",
      "PARENTID": "0",
      "PARENTTYPE": 15363,
      "QUORUMSERVERIP": "3.3.3.3",
      "RUNNINGSTATUS": "10",
      "TYPE": 15365,
      "lifPortName":"CTE0.B1.P1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.9.4.5 Interface for Querying the Number of Quorum Server Links

Function

Interface for querying the number of quorum server links.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServerLink/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: ID, PARENTID, RUNNINGSTATUS, LOCALCONTROLLER-ID, LOCALPORTID, LOCALCONTROLLER-NAME, LOCALPORTNAME, and QUORUMSERVERIP.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of quorum server links queried based on specified conditions.

Example

- Querying the number of quorum server links.

```
Request: GET /deviceManager/rest/1016964156/QuorumServerLink/count

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
    }
}
```

2.9.9.4.6 Interface for Querying the Number of Quorum Servers

Function

This interface is used to query the number of quorum servers.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QuorumServer/count

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of quorum servers queried based on specified conditions.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15363: quorum server

Example

- Querying the number of quorum servers.

```
Request: GET /deviceManager/rest/1016964156/QuorumServer/count

Response:
{
   "data": {
      "COUNT": "1",
      "TYPE": 15363
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.9.5 Others

2.9.10 hyper_metro_domain

2.9.10.1 Add

2.9.10.1.1 Interface for Adding a Quorum Server into a HyperMetro Domain

Function

Add a quorum server into a HyperMetro domain.

HighRisk

You are about to add the quorum server to the HyperMetro domain.

This operation will change the HyperMetro arbitration mode.

Suggestion: Before performing this operation, ensure that the parameters are configured correctly to prevent service exceptions.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ASSOCIATEOBJID	Mandatory	string	ID of the associated object: ID of the quorum server.

Result

N/A

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Example

- Add a quorum server into a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/HyperMetroDomain/CREATE_ASSOCIATE
{
   "ID": "2",
   "ASSOCIATEOBJID": "0"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.1.2 Interface for Adding a Quorum Server to a File System-based HyperMetro Domain

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain/CREATE_ASSOCIATE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ASSOCIATEOBJID	Mandatory	string	ID of the associated object: ID of the quorum server.

Result

N/A

Example

- Adding a quorum server into a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain/
CREATE_ASSOCIATE
{
```

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```
    "ID": "2",
    "ASSOCIATEOBJID": "0"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.1.3 Interface for Creating a HyperMetro Domain

Function

This interface is used to create a HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value cannot be empty, and contains only 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description, which contains 0 to 127 characters. **Length:**0~127

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Parameter	Mandatory/Optional/Conditional	Type	Description
DOMAINTYPE	Optional	enum	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Default:**1: AA mode **Note:**Currently, only the AA mode is supported.
REMOTEDEVICES	Mandatory	array	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15362: HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 33: To be recovered 35: Invalid
DESCRIPTION	Mandatory	string	Description.
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:**Currently, only the AA mode is supported.
REMOTEDEVICES	Mandatory	string(array)	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 2: quorum disk 3: none

Example

- Creating a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/HyperMetroDomain
{
   "NAME": "HyperMetroDomain_002",
```

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```
    "DESCRIPTION": "",
    "DOMAINTYPE": 1,
    "REMOTEDEVICES": [
        {
            "devId": "testid2",
            "devESN": "210235G6LLZ0B8000002",
            "devName": "5300_V3_10.20.31.09"
        }
    ]
}

Response:
{
    "data": {
        "CPTYPE": "3",
        "DESCRIPTION": "",
        "DOMAINTYPE": "1",
        "ID": "1",
        "NAME": "HyperMetroDomain_002",
        "REMOTEDEVICES": "[{\"devESN\":\"210235G6LLZ0B8000002\",\"devId\":\"testid2\",\"devName
\":\"5300_V3_10.20.31.09\"}]",
        "RUNNINGSTATUS": "1",
        "TYPE": 15362
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.1.4 Interface for Creating a HyperMetro Domain for File

Function

This interface is used to create a file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value cannot be empty, and contains only 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description, which contains 0 to 127 characters. **Length:**0~127
REMOTEDEVICES	Mandatory	array	Remote device list.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 162: HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 33: To be recovered 35: Invalid
REMOTEDEVICES	Mandatory	string(array)	Remote device list. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].

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Parameter	Mandatory/ Conditional	Type	Description
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 3: static priority
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:** Currently, only the AA mode is supported. The sequence number is 64.
CONFIGROLE	Mandatory	string(enum)	Whether the site is the active site. **The value is described as follows:** 0: standby site 1: active site
ROLE	Mandatory	enum	Whether the site is a preferred site. **The value is described as follows:** 0: non-preferred site 1: preferred site
SERVICESTATUS	Mandatory	enum	Service status. **The value is described as follows:** 0: The service is provided. 1: The service is not provided.

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Parameter	Mandatory/ Conditional	Type	Description
logicPortStatus	Mandatory	string(enum)	Working status of the logical port. **The value is described as follows:** 1: enabled; 2: disabled **Note:**This field is used only in synchronous mode.
mscRecoverPolicy	Mandatory	enum	Recovery policy of the HyperMetro domain. **The value is described as follows:** 1: automatic recovery. 2: manual recovery.
workMode	Mandatory	string(enum)	Working mode. **The value is described as follows:** 0: active-active mode; 1: synchronous mode

Example

- Creating a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain
{
   "NAME": "FsHyperMetroDomain_002",
   "DESCRIPTION": "",
   "REMOTEDEVICES": [
      {
         "devId": "testid2",
         "devESN": "210235G6LLZ0B8000002",
         "devName": "5300_V3_10.20.31.09"
      }
   ]
}

Response:
{
   "data": {
      "CONFIGROLE": "1",
      "CPTYPE": "3",
      "DESCRIPTION": "",
      "DOMAINTYPE": "1",
      "ID": "1",
      "NAME": "FsHyperMetroDomain_002",
      "REMOTEDEVICES": "[{\"devESN\":\"210235G6LLZ0B8000002\",\"devId\":\"testid2\",\"devName
\":\"5300_V3_10.20.31.09\"}]",
      "ROLE": "1",
      "RUNNINGSTATUS": "1",
      "SERVICESTATUS": "0",
      "TYPE": 162,
      "logicPortStatus": "255",
```

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```
        "mscRecoverPolicy": "1",
        “workMode”: "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.2 Delete

2.9.10.2.1 Interface for Deleting a File System-based HyperMetro Domain

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ISLOCALDELETE	Optional	bool	Whether to delete a HyperMetro domain from only the local storage system. **The value is described as follows:** true: yes false: no **Default:**false: no
ISFORCEDELETE	Optional	bool	Whether to forcibly delete a HyperMetro domain. **The value is described as follows:** 1: yes 0: no **Default:**0: no

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Result

N/A

Example

- Deleting a HyperMetro domain.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain/1?
ISLOCALDELETE=false

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.2.2 Interface for Deleting a HyperMetro Domain

Function

Delete a HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ISLOCALDELETE	Optional	bool	whether a HyperMetro task can be locally deleted. **The value is described as follows:** true: yes false: no **Default:**false: no

Result

N/A

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Example

- Delete a HyperMetro domain.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/HyperMetroDomain/1?
ISLOCALDELETE=false

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.2.3 Interface for Removing a Quorum Server from a File System-based HyperMetro Domain

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain/REMOVE_ASSOCIATE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ASSOCIATEOBJID	Mandatory	string	ID of the associated object: ID of the quorum server.

Result

N/A

Example

- Removing the quorum server from a HyperMetro domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain/
REMOVE_ASSOCIATE
{
    "ID": "2",
    "ASSOCIATEOBJID": "0"
}
```

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```
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.2.4 Interface for Removing a Quorum Server from a HyperMetro Domain

Function

Remove a quorum server from a HyperMetro domain.

HighRisk

You are about to remove the quorum server from the HyperMetro domain.

This operation will change the HyperMetro arbitration mode.

Suggestion: Before performing this operation, ensure that the parameters are configured correctly to prevent service exceptions.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/REMOVE_ASSOCIATE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
ASSOCIATEOBJID	Mandatory	string	ID of the associated object: ID of the quorum server.

Result

N/A

Example

- Remove a quorum server from a HyperMetro domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroDomain/REMOVE_ASSOCIATE
{
   "ID": "2",
```

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```
    "ASSOCIATEOBJID": "0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3 Modify

2.9.10.3.1 Interface for Changing the Preferred Site of a File System-based HyperMetro Domain

Function

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SetFsHyperMetroDomainPriority

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

Result

N/A

Example

- Modifying the preferred site of the HyperMetro domain.

```
Request: POST /deviceManager/rest/2102350BSB10F1000088/SetFsHyperMetroDomainPriority
{
"ID": "7079903ff8df0101"
}

Response: {
    "data": {

    },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3.2 Interface for Changing the Status of the Local Logical Port of the HyperMetro Domain for File

Function

Change the status of the local logical port in the file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ModifyFsHyperMetroDomainLocalLogicPortStatus/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
logicPortStatus	Mandatory	enum	Status of the logical port. **The value is described as follows:** 1: activated; 2: stopped.

Result

N/A

Example

- Change the status of the local logical port in the file system HyperMetro domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/ModifyFsHyperMetroDomainLocalLogicPortStatus/1
{
    "ID": "1",
    "logicPortStatus":1
}

Response:
{
```

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```
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3.3 Interface for Modifying a File System-based HyperMetro Domain

Function

This interface is used to modify a file system-based HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value is a string of 1 to 31 characters and cannot be left blank. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. **Length:**1~31
DESCRIPTION	Optional	string	Description, which contains 0 to 127 characters. **Length:**0~127
ID	Mandatory	string	HyperMetro domain ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
mscRecoverPolicy	Optional	enum	HyperMetro domain recovery policy. **The value is described as follows:** 1: automatic recovery. 2: manual recovery. **Default:**1

Result

N/A

Example

- Modifying a HyperMetro domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain/1
{
    "NAME": "test21",
    "DESCRIPTION": "111",
    "mscRecoverPolicy":1
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3.4 Interface for Modifying Access Permissions for the Secondary File System of a HyperMetro Domain for File

Function

Modify read and write permissions for the secondary file system of a file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ChangeFsHyperMetroDomainSecondAccess

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
access	Mandatory	enum	Read and write permission. **The value is described as follows:** 1: access forbidden 3: read and write

Result

N/A

Example

- Modify read and write permissions for the secondary file system of a file system HyperMetro domain.

```
Request: POST /deviceManager/rest/2102350RMG10H3000004/
ChangeFsHyperMetroDomainSecondAccess
{
    "ID": "7079903ff8df0101",
    "access":1
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3.5 Interface for Modifying HyperMetro Domain

Function

Modify a HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/${id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Name. **The value is described as follows:** The value cannot be empty, and contains only 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description, which contains 0 to 127 characters. **Length:**0~127
ID	Mandatory	string	HyperMetro domain ID.

Result

N/A

Example

- Modify a HyperMetro domain.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetroDomain/1
{
    "NAME": "test21",
    "DESCRIPTION": "111"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.3.6 Interface for Modifying the Recovery Policy of the HyperMetro Domain for File

Function

Modify the recovery policy of the file system HyperMetro domain.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ModifyHyperMetroFileSystemClusterRecoverPolicy/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.
mscRecoverPolicy	Mandatory	enum	Recovery policy of the HyperMetro domain. **The value is described as follows:** 1: The HyperMetro domain is automatically recovered. 2: The HyperMetro domain is manually recovered.

Result

N/A

Example

- Modify the HyperMetro domain recovery policy.

```
Request: PUT /deviceManager/rest/210235843910E6000009/
ModifyHyperMetroFileSystemClusterRecoverPolicy/1
{
    "ID": "1",
    "mscRecoverPolicy":2
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.4 Query

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2.9.10.4.1 Interface for Batch Querying HyperMetro Domain Information

Function

This interface is used to batch query HyperMetro domain information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15362: HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 33: To be recovered 35: Invalid
DESCRIPTION	Mandatory	string	Description.
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:**Currently, only the AA mode is supported.
REMOTEDEVICES	Mandatory	string(array)	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].
CPSID	Conditional	string	Quorum server ID. **Note:**This field is returned when a quorum server is configured for the HyperMetro domain.
CPSNAME	Conditional	string	Quorum server name. **Note:**This field is returned when a quorum server is configured for the HyperMetro domain.

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Parameter	Mandatory/ Conditional	Type	Description
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 2: quorum disk 3: none
STANDBYCPSID	Conditional	string	Standby quorum server ID. **Note:**This parameter is returned when a standby quorum server is configured in the HyperMetro domain.
STANDBYCPSNAME	Conditional	string	Standby quorum server name. **Note:**This parameter is returned when a standby quorum server is configured in the HyperMetro domain.

Example

- Batch querying HyperMetro domain information.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroDomain?range=[0-100]

Response:
{
   "data": [
      {
         "CPSID": "",
         "CPSNAME": "",
         "CPTYPE": "3",
         "DESCRIPTION": "",
         "STANDBYCPSID": "",
         "STANDBYCPSNAME": "",
         "DOMAINTYPE": "1",
         "ID": "8038bc14bd750100",
         "NAME": "test",
         "REMOTEDEVICES": "[{\"devId\":\"0\",\"devESN\":\"2102350BSE10F3000088\",\"devName
\":\"33aa\"}]",
         "RUNNINGSTATUS": "1",
         "TYPE": 15362
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.10.4.2 Interface for Batch Querying HyperMetro Domains for File

Function

This interface is used to query HyperMetro domains for file in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	HyperMetro domain ID.
ROLE	Optional	enum	Whether it is a preferred site. **The value is described as follows:** 0: Preferred 1: Non-preferred

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 162: HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Normal 1: Recovering 2: Faulty 3: Split 4: Force started 5: Invalid
DESCRIPTION	Mandatory	string	Description.
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:** Currently, only the AA mode is supported. No.: 64
REMOTEDEVICES	Mandatory	string(array)	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].
CPSID	Conditional	string	Quorum server ID.
CPSNAME	Conditional	string	Quorum server name.

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Parameter	Mandatory/ Conditional	Type	Description
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 2: quorum disk 3: none
STANDBYCPSID	Conditional	string	Standby quorum server ID.
STANDBYCPSNAME	Conditional	string	Standby quorum server name.
SERVICESTATUS	Mandatory	enum	Service status. **The value is described as follows:** 0: active 1: passive
ROLE	Mandatory	enum	Whether it is a preferred site. **The value is described as follows:** 0: Non-preferred 1: Preferred
mscRecoverPolicy	Mandatory	enum	HyperMetro domain recovery policy. **The value is described as follows:** 1: automatic recovery. 2: manual recovery.
workMode	Mandatory	string(enum)	Working mode. **The value is described as follows:** 0: active-active mode; 1: synchronous mode
logicPortStatus	Mandatory	string(enum)	Working status of the logical port. **The value is described as follows:** 1: enabled; 2: disabled **Note:**This field is used only in synchronous mode.

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Parameter	Mandatory/ Conditional	Type	Description
CONFIGROLE	Mandatory	string(enum)	Whether the site is the active site. **The value is described as follows:** 0: standby site 1: active site

Example

- Batch querying HyperMetro domain information.

```
Request: GET /deviceManager/rest/2102350RMG10H3000004/FsHyperMetroDomain

Response: {
   "data": [
      {
         "CONFIGROLE": "1",
         "CPTYPE": "3",
         "DESCRIPTION": "",
         "DOMAINTYPE": "1",
         "ID": "7079903ff8df0100",
         "NAME": "FileHyperMetroDomain_000",
         "REMOTEDEVICES": "[{\"devId\":\"0\", \"devESN\":\"2102350BSB10F1000088\", \"devName
\":\"Huawei.Storage\"}]",
         "ROLE": "1",
         "RUNNINGSTATUS": "0",
         "SERVICESTATUS": "0",
         "TYPE": 162,
         "logicPortStatus": "255",
         "mscRecoverPolicy": "1",
         "workMode": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.4.3 Interface for Querying a HyperMetro Domain for File

Function

This interface is used to query a file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FsHyperMetroDomain/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 162: file system HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Normal 2: To be recovered 6: Invalid
DESCRIPTION	Mandatory	string	Description.
REMOTEDEVICES	Mandatory	string(array)	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].
CPSID	Mandatory	string	Quorum server ID.

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Parameter	Mandatory/ Conditional	Type	Description
CPSNAME	Mandatory	string	Quorum server name.
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 2: quorum disk 3: none
STANDBYCPSID	Mandatory	string	Standby quorum server ID.
STANDBYCPSNAME	Mandatory	string	Standby quorum server name.
logicPortStatus	Mandatory	enum	Working status of the logical port. **The value is described as follows:** 1: enabled; 2: disabled. **Note:**"255" indicates an invalid value.
SERVICESTATUS	Mandatory	enum	Service status. **The value is described as follows:** 0: active 1: passive
ROLE	Mandatory	enum	Whether it is a preferred site. **The value is described as follows:** 0: Non-preferred 1: Preferred
mscRecoverPolicy	Mandatory	enum	HyperMetro domain recovery policy. **The value is described as follows:** 1: automatic recovery. 2: manual recovery.
workMode	Mandatory	enum	Working mode. **The value is described as follows:** 0: active-active mode; 1: synchronous mode

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Parameter	Mandatory/ Conditional	Type	Description
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:** Currently, only the AA mode is supported. The sequence number is 64.
CONFIGROLE	Conditional		HyperMetro domain role configuration. **The value is described as follows:** 0: secondary 1: primary
access	Conditional	enum	Read-write permission **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
isNetworkSync	Conditional	bool	Whether network configurations are synchronized. **The value is described as follows:** true: enabled false: disabled
isShareAuthentication-Sync	Conditional	bool	Whether share and authentication information are synchronized. **The value is described as follows:** true: enabled false: disabled

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Example

- Querying HyperMetro domain information.

```
Request: GET /deviceManager/rest/210235843910E6000009/FsHyperMetroDomain/0

Response:
{
   "data": {
      "CPSID": "",
      "CPSNAME": "",
      "CPTYPE": "3",
      "DOAINTYPE": "1",
      "STANDBYCPSID": "",
      "STANDBYCPSNAME": "",
      "DESCRIPTION": "",
      "ID": "0",
      "NAME": "FsHyperMetroDomain_001",
      "REMOTEDEVICES": "[{\\\\"devESN\\\\":\\\\"210235G6LLZ0B8000001\\\\",\\\\"devId\\\\":\\\
\"testid\\\\",\\\\"devName\\\\":\\\\"S5600T_10.20.30.08\\\\"}]",
      "RUNNINGSTATUS": "1",
      "SERVICESTATUS":"1",
      "ROLE":"0",
      "CONFIGROLE":"0",
      "TYPE": 162,
      "mscRecoverPolicy":1
      "logicPortStatus": "255",
      "workMode": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.4.4 Interface for Querying HyperMetro Domain Information

Function

This interface is used to query HyperMetro domain information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15362: HyperMetro domain
ID	Mandatory	string	HyperMetro domain ID.
NAME	Mandatory	string	Name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 33: To be recovered 35: Invalid
DESCRIPTION	Conditional	string	Description. **Note:**This field is returned when the description is not empty.
DOMAINTYPE	Mandatory	string(enum)	HyperMetro domain type. **The value is described as follows:** 1: AA mode 2: AP mode **Note:**Currently, only the AA mode is supported.

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Parameter	Mandatory/ Conditional	Type	Description
REMOTEDEVICES	Mandatory	string(array)	List of remote devices. **The value is described as follows:** Only one device is supported currently, including the JSON object consisting of the name, ID, and SN. [{ "devId":XXX, "devESN":YYY, "devName":ZZZ },...].
CPSID	Mandatory	string	Quorum server ID.
CPSNAME	Mandatory	string	Quorum server name.
CPTYPE	Mandatory	string	Arbitration type. **The value is described as follows:** 1: quorum server 2: quorum disk 3: none
STANDBYCPSID	Mandatory	string	Standby quorum server ID.
STANDBYCPSNAME	Mandatory	string	Standby quorum server name.

Example

- Querying HyperMetro domain information.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetroDomain/0

Response:
{
   "data": {
      "CPSID": "",
      "CPSNAME": "",
      "CPTYPE": "3",
      "STANDBYCPSID": "",
      "STANDBYCPSNAME": "",
      "DESCRIPTION": "",
      "DOMAINTYPE": "1",
      "ID": "0",
      "NAME": "HyperMetroDomain_001",
      "REMOTEDEVICES": "[{\"devESN\":\"210235G6LLZ0B8000001\",\"devId\":\"testid\",\"devName
\":\"S5600T_10.20.30.08\"}]",
      "RUNNINGSTATUS": "1",
```

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```
        "TYPE": 15362
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.4.5 Interface for Querying the Number of HyperMetro Domains

Function

This interface is used to query the number of HyperMetro domains.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetroDomain/count

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried HyperMetro domains.

Example

- Querying the number of HyperMetro domains.

```
Request: GET /deviceManager/rest/1016964156/HyperMetroDomain/count

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.5 Others

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2.9.10.5.1 Interface for Forcibly Starting a File System-based HyperMetro Domain

Function

Forcibly start a file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/StartFsHyperMetroDomain

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

Result

N/A

Example

- Forcibly starting a HyperMetro domain.

```
Request: POST /deviceManager/rest/2102350RMG10H3000004/StartFsHyperMetroDomain
{
"ID": "7079903ff8df0101"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.5.2 Interface for Performing a Primary/Secondary Switchover in a HyperMetro Domain for File

Function

Perform a primary/secondary switchover in a file system HyperMetro domain.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SwapRoleFsHyperMetroDomain

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

Result

N/A

Example

- Perform a primary/secondary switchover in a file system HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/SwapRoleFsHyperMetroDomain
{
    "ID": "6700000405060100"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.10.5.3 Interface for Recovering a HyperMetro Domain for File

Function

This interface is used to recover the file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/JoinFsHyperMetroDomain

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

Result

N/A

Example

- Recovering a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/JoinFsHyperMetroDomain
{
   "ID": "6700000405060100"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.10.5.4 Interface for Splitting a HyperMetro Domain for File

Function

This interface is used to split a file system HyperMetro domain.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SplitFsHyperMetroDomain

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro domain ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
STOPROLE	Optional	enum	Stops the service site. **The value is described as follows:** 0: preferred site 1: non-preferred site

Result

N/A

Example

- Splitting a HyperMetro domain.

```
Request: POST /deviceManager/rest/210235843910E6000009/SplitFsHyperMetroDomain
{
    "ID": "6700000405060100",
    "STOPROLE": "0"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11 hyper_metro_consistency_group

2.9.11.1 Add

2.9.11.1.1 Interface for Adding a HyperMetro Pair to a HyperMetro Consistency Group

Function

This interface is used to add a HyperMetro pair to a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hyperMetro/associate/pair

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Adding a HyperMetro pair to a HyperMetro consistency group.

```
Request: POST /deviceManager/rest/210235843910E6000009/hyperMetro/associate/pair
{
    "ID": "0022A104DEF50003",
    "ASSOCIATEOBJID": "10"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.1.2 Interface for Batch Adding HyperMetro Pairs to a HyperMetro Consistency Group

Function

This interface is used to batch add HyperMetro pairs to a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hyperMetro/associate/pair/batch

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).

Example

- Adding HyperMetro pairs to a HyperMetro consistency group in batches.

```
Request: POST /deviceManager/rest/2102350RMG10H3000004/hyperMetro/associate/pair/batch
[{
    "ID": "21007079903ff8df0000000100000000",
    "ASSOCIATEOBJID": "21007079903ff8df0000000000000000"
},
{
    "ID": "21007079903ff8df0000000100000000",
    "ASSOCIATEOBJID": "21007079903ff8df0000000000000002"
}]

Response: {
    "data": [
        {
            "ID": "21007079903ff8df0000000100000000",
            "ASSOCIATEOBJID": "21007079903ff8df0000000000000000",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ID": "21007079903ff8df0000000100000000",
            "ASSOCIATEOBJID": "21007079903ff8df0000000000000002",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.9.11.1.3 Interface for Creating a Consistency Group of HyperMetro

Function

This interface is used to create a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of the HyperMetro consistency group. **The value is described as follows:** The value can contain only letters, digits, underscores (_), hyphens (-), and periods (.), and cannot start with a symbol or be empty. **Length:**1~31
RMTVSTOREID	Optional	string	Remote vStore ID.
DESCRIPTION	Optional	string	Description. **Length:**0~127
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium

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Parameter	Mandatory/Optional/Conditional	Type	Description
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual **Default:**1: automatic
DOMAINID	Mandatory	string	ID of a HyperMetro domain.
localPgId	Optional	string	Local protection group ID. **The value is described as follows:** 0 to 16383. **Length:**32

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISISOLATION	Optional	bool	Service assurance policy. **The value is described as follows:** true: Service continuity preferred. This policy ensures service continuity preferentially and applies to scenarios where host services require low storage latency. When the average write latency difference between local and remote resources of a HyperMetro pair is greater than the disconnection threshold, the system automatically disconnects the HyperMetro pair and the resource with lower write latency continues providing services. false: Data reliability preferred. This policy ensures service data reliability preferentially and applies to scenarios that have high requirements for data protection. Data on local and remote resources is consistent in real time. **Default:**false: Data reliability is preferred.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISISOLATIONTHRE-SHOLDTIME	Optional	uint32	Disconnection threshold. **The value is described as follows:** 10 to 30000. **Default:**200
remotePgId	Conditional	string	ID of the remote protection group. **The value is described as follows:** 0 to 16383. **Length:**32 **Note:**This parameter must be delivered when "localPgId" is delivered.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15364: HyperMetro consistency group
ID	Mandatory	string	Indicates the HyperMetro consistency group ID.
localPgName	Conditional	string	Name of a local protection group.
localPgId	Conditional	string	ID of the local protection group.
NAME	Mandatory	string	Object name.

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Parameter	Mandatory/ Conditional	Type	Description
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Forcible started 100: To be synchronized
DESCRIPTION	Mandatory	string	Description.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
PRIORITYSTATION-TYPE	Mandatory	string(enum)	Preferred site type. **The value is described as follows:** 0: local end 1: remote end
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. The default value is automatic. **The value is described as follows:** 1: automatic 2: manual
DOMAINID	Mandatory	string	ID of a HyperMetro domain.

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Parameter	Mandatory/ Conditional	Type	Description
DOMAINNAME	Mandatory	string	Name of a HyperMetro domain.
RESOURCETYPE	Mandatory	string(enum)	Resource type. **The value is described as follows:** 11: LUN
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 1: from local to remote 2: from remote to local

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Parameter	Mandatory/ Conditional	Type	Description
ISISOLATION	Mandatory	string(bool)	Service assurance policy **The value is described as follows:** true: Service continuity preferred. This policy ensures service continuity preferentially and applies to scenarios where host services require low storage latency. When the average write latency difference between local and remote resources of a HyperMetro pair is greater than the disconnection threshold, the system automatically disconnects the HyperMetro pair and the resource with lower write latency continues providing services. false: Data reliability preferred. This policy ensures service data reliability preferentially and applies to scenarios that have high requirements for data protection. Data on local and remote resources is consistent in real time.
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000.
HDRINGID	Mandatory	string	DR Star trio ID.

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Parameter	Mandatory/ Conditional	Type	Description
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.
remotePgId	Conditional	string	ID of the remote protection group.
rmtPgName	Conditional	string	Name of a remote protection group.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
RMTVSTOREID	Mandatory	string	Remote vStore ID.

Example

- Creating a HyperMetro consistency group.

```
Request: POST /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup
{
   "NAME": "test",
   "DESCRIPTION": "",
   "RECOVERYPOLICY": "1",
   "SPEED": "2",
   "DOMAINID": "c4ff1febf5a10100"
}

Response: {
   "data": {
      "DESCRIPTION": "",
      "DOMAINID": "c4ff1febf5a10100",
      "DOMAINNAME": "qocrUApw",
      "HDRINGID": "--",
      "HEALTHSTATUS": "1",
      "ID": "2100c4ff1febf5a10000000100000002",
      "ISEMPTY": "true",
      "ISISOLATION": "false",
      "ISISOLATIONTHRESHOLDTIME": "200",
      "NAME": "test",
      "PRIORITYSTATIONTYPE": "0",
      "RECOVERYPOLICY": "1",
      "RESOURCETYPE": "11",
      "RMTVSTOREID": "0",
      "RUNNINGSTATUS": "41",
      "SPEED": "2",
      "SYNCDIRECTION": "1",
      "TYPE": 15364,
      "WRITESECONDARYTIMEOUT": "30",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.9.11.2 Delete

2.9.11.2.1 Interface for Batch Removing HyperMetro Pairs from a HyperMetro Consistency Group

Function

This interface is used to batch remove HyperMetro pairs from a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hyperMetro/associate/pair/batch

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).
isOmTaskRestful	Optional	bool	Whether the RESTful API is used by OMTASK to deliver tasks. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).

Example

- Removing HyperMetro pairs from a HyperMetro consistency group in batches.

```
Request: DELETE /deviceManager/rest/2102358439l0E6000009/hyperMetro/associate/pair/batch
[{
   "ID": "4846fb8ca15c0000",
   "ASSOCIATEOBJID": "4846fb8ca15c0004"
},{
   "ID": "4846fb8ca15c0000",
   "ASSOCIATEOBJID": "4846fb8ca15c0005"
}]

Response:
{
   "data": [{"ID": "4846fb8ca15c0000",
              "ASSOCIATEOBJID": "4846fb8ca15c0004",
             "error": {
                "code": 0,
                "description": "0",
                "suggestion": ""}},
            {"ID": "4846fb8ca15c0000",
             "ASSOCIATEOBJID": "4846fb8ca15c0005",
             "error": {
                "code": 0,
                "description": "0"
                "suggestion": ""}}],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.11.2.2 Interface for Deleting a Consistency Group of HyperMetro

Function

This interface is used to delete a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ISLOCALDELETE	Optional	bool	Indicates whether the HyperMetro consistency group can be locally deleted when the link is disconnected. **The value is described as follows:** true: can be locally deleted. false: cannot be locally deleted. **Default:**false: cannot be locally deleted **Note:**If this parameter is not delivered, the HyperMetro consistency group cannot be locally deleted when the link is disconnected.
ID	Mandatory	string	HyperMetro consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Deleting a HyperMetro consistency group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/1?ISLOCALDELETE=false

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.11.2.3 Interface for Removing a HyperMetro Pair from a Consistency Group of HyperMetro

Function

This interface is used to remove a HyperMetro pair from a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/hyperMetro/associate/pair

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
ASSOCIATEOBJID	Mandatory	string	Associated object ID (HyperMetro pair ID).
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Removing a HyperMetro pair from a HyperMetro consistency group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/hyperMetro/associate/pair?
ID=0022A104DEF50003&ASSOCIATEOBJID=10

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.3 Modify

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2.9.11.3.1 Interface for Modifying a Consistency Group of HyperMetro

Function

This interface is used to modify a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Object name. **The value is described as follows:** The value can contain only letters, digits, underscores (_), hyphens (-), and periods (.). It cannot start with a symbol and cannot be empty. **Length:**1~31
DESCRIPTION	Optional	string	Description. **Length:**0~127
SPEED	Optional	enum	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**Only one of the SPEED and bandwidth parameters can be selected.

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Parameter	Mandatory/Optional/Conditional	Type	Description
RECOVERYPOLICY	Optional	enum	Recovery policy. **The value is described as follows:** 1: automatic 2: manual
ID	Mandatory	string	HyperMetro consistency group ID. **Length:**1~32
ISISOLATION	Optional	bool	Isolation switch. **The value is described as follows:** true: open false: close
ISISOLATIONTHRE-SHOLDTIME	Optional	uint32	Isolation threshold. **The value is described as follows:** 10 to 30000. **Unit:**ms
bandwidth	Optional	uint64	Bandwidth. **The value is described as follows:** The value is from 1 to 1024, expressed in MB/s. **Unit:**M **Note:**Only one of the bandwidth and SPEED parameters can be selected.

Result

N/A

Example

- Modifying a HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/1
{
    "NAME": "test"
}

Response:
{
```

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```
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.3.2 Interface for Modifying the Preferred Site Policy for Arbitration of a HyperMetro Consistency Group

Function

Modify the preferred site policy of a specified HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/modifyPreferredPolicy

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Indicates the HyperMetro consistency group ID.
preferredSitePolicyFor-Arbitration	Mandatory	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined; 2: determined based on service I/Os

Result

N/A

Example

- Modify the preferred site policy of a specified HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/modifyPreferredPolicy
{
    "ID": "0022A104DEF50003"
    "preferredSitePolicyForArbitration":2
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.4 Query

2.9.11.4.1 Interface for Batch Querying a Consistency Group of HyperMetro

Function

This interface is used to batch query HyperMetro consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, RUNNINGSTATUS, PRIORITYSTATION-TYPE, and HDRINGID are supported. **Note:**All ID fields support only exact query and do not support fuzzy query.
vstoreId	Optional	string	vStore ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15364: HyperMetro consistency group
ID	Mandatory	string	ID of a HyperMetro consistency group.
NAME	Mandatory	string	Object name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Forcible started 100: To be synchronized
DESCRIPTION	Mandatory	string	Description.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
PRIORITYSTATION-TYPE	Mandatory	string(enum)	Preferred site type. **The value is described as follows:** 0: local preferred 1: remote preferred
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. The default value is automatic. **The value is described as follows:** 1: automatic 2: manual
DOMAINID	Mandatory	string	ID of a HyperMetro domain.
DOMAINNAME	Mandatory	string	Name of a HyperMetro domain.
RESOURCETYPE	Mandatory	string(enum)	Resource type. **The value is described as follows:** 11: LUN

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Parameter	Mandatory/ Conditional	Type	Description
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 1: from local to remote 2: from remote to local
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: open false: closed
localPgName	Conditional	string	Local protection group name. **The value is described as follows:** The value contains 1 to 63 characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned when the consistency group is created based on a protection group.
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000. **Note:**This parameter is invalid when the isolation switch is off.

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Parameter	Mandatory/ Conditional	Type	Description
rmtPgName	Conditional	string	Remote protection group name. **The value is described as follows:** The value contains 1 to 63 characters including digits, letters, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned when the consistency group is created based on a protection group.
localPgId	Conditional	string	Local protection group ID. **The value is described as follows:** 0 to 8191. **Note:**This field is returned when the consistency group is created based on a protection group.
HDRINGID	Mandatory	string	DR Star trio ID.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** 15 to 180.
remotePgId	Conditional	string	Remote protection group ID. **The value is described as follows:** 0 to 8191. **Note:**This field is returned when the consistency group is created based on a protection group.

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Parameter	Mandatory/ Conditional	Type	Description
preferredSitePolicyFor-Arbitration	Mandatory	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined 2: based on service I/Os
vstoreId	Mandatory	string	vStore ID.
RMTVSTOREID	Mandatory		Remote vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying HyperMetro consistency groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup?
range=[0-100]&filter=NAME:aa

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "DOMAINID": "ef6ddf86a7590101",
         "DOMAINNAME": "domain",
         "HDRINGID": "--",
         "HEALTHSTATUS": "1",
         "ID": "2100ef6ddf86a7590000000100000001",
         "ISEMPTY": "false",
         "ISISOLATION": "false",
         "ISISOLATIONTHRESHOLDTIME": "200",
         "NAME": "cg_metro_Huaage_PG0001907",
         "PRIORITYSTATIONTYPE": "0",
         "RECOVERYPOLICY": "1",
         "RESOURCETYPE": "11",
         "RMTVSTOREID": "0",
         "RUNNINGSTATUS": "1",
         "SPEED": "2",
         "SYNCDIRECTION": "0",
         "TYPE": 15364,
         "WRITESECONDARYTIMEOUT": "30",
         "localPgId": "0",
         "localPgName": "PG0001",
         "preferredSitePolicyForArbitration": "1",
         "remotePgId": "0",
         "rmtPgName": "PG0001",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.11.4.2 Interface for Querying a Consistency Group of HyperMetro

Function

This interface is used to query a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 15364: HyperMetro consistency group
ID	Mandatory	string	Indicates the HyperMetro consistency group ID.
NAME	Mandatory	string	Object name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 23: Synchronizing 35: Invalid 41: Paused 93: Forcible started 100: To be synchronized
DESCRIPTION	Mandatory	string	Description.
SPEED	Mandatory	string(enum)	Rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
PRIORITYSTATION-TYPE	Mandatory	string(enum)	Type of the preferred site. **The value is described as follows:** 0: local preferred 1: remote preferred
RECOVERYPOLICY	Mandatory	string(enum)	Recovery policy. The default value is automatic. **The value is described as follows:** 1: automatic 2: manual
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
RESOURCETYPE	Mandatory	string(enum)	Resource type. **The value is described as follows:** 11: LUN

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Parameter	Mandatory/ Conditional	Type	Description
ISEMPTY	Mandatory	string(bool)	Indicates whether a consistency group is empty. **The value is described as follows:** true: yes false: no
SYNCDIRECTION	Mandatory	string(enum)	Synchronization direction. **The value is described as follows:** 1: from local to remote 2: from remote to local
ISISOLATION	Mandatory	string(bool)	Isolation switch. **The value is described as follows:** true: open false: closed
ISISOLATIONTHRE-SHOLDTIME	Mandatory	string(uint32)	Isolation threshold. **The value is described as follows:** 10 to 30000. **Note:**This parameter is invalid when the isolation switch is off.
HDRINGID	Mandatory	string	DR Star trio ID.
WRITESECONDARYTI-MEOUT	Mandatory	string(uint32)	Mirror write I/O timeout period. **The value is described as follows:** The value ranges from 15 to 30.

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Parameter	Mandatory/ Conditional	Type	Description
localPgId	Conditional	string	Local protection group ID. **The value is described as follows:** 0 to 8191. **Note:**This field is returned when the consistency group is created based on a protection group.
remotePgId	Conditional	string	Remote protection group ID. **The value is described as follows:** 0 to 8191. **Note:**This field is returned when the consistency group is created based on a protection group.
localPgName	Conditional	string	Local protection group name. **The value is described as follows:** The value can contain 1 to 63 characters, including only letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned when the consistency group is created based on a protection group.

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Parameter	Mandatory/ Conditional	Type	Description
rmtPgName	Conditional	string	Remote protection group name. **The value is described as follows:** The value can contain 1 to 63 characters, including only letters, digits, underscores (_), hyphens (-), and periods (.). **Note:**This field is returned when the consistency group is created based on a protection group.
preferredSitePolicyFor-Arbitration	Conditional	enum	Preferred site policy for arbitration. **The value is described as follows:** 1: user-defined 2: based on service I/Os
vstoreName	Mandatory	string	vStore name.
vstoreId	Mandatory	string	vStore ID.
RMTVSTOREID	Mandatory	string	Remote vStore ID.

Example

- Querying a HyperMetro consistency group.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/
2100ef6ddf86a7590000000100000001

Response: {
   "data": {
      "DESCRIPTION": "",
      "DOMAINID": "ef6ddf86a7590101",
      "DOMAINNAME": "domain",
      "HDRINGID": "--",
      "HEALTHSTATUS": "1",
      "ID": "2100ef6ddf86a7590000000100000001",
      "ISEMPTY": "false",
      "ISISOLATION": "false",
      "ISISOLATIONTHRESHOLDTIME": "200",
      "NAME": "cg_metro_Huaage_PG0001907",
      "PRIORITYSTATIONTYPE": "0",
      "RECOVERYPOLICY": "1",
      "RESOURCETYPE": "11",
      "RMTVSTOREID": "0",
      "RUNNINGSTATUS": "1",
```

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```
        "SPEED": "2",
        "SYNCDIRECTION": "0",
        "TYPE": 15364,
        "WRITESECONDARYTIMEOUT": "30",
        "localPgId": "0",
        "localPgName": "PG0001",
        "preferredSitePolicyForArbitration": "1",
        "remotePgId": "0",
        "rmtPgName": "PG0001",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.11.4.3 Interface for Querying the Number of Consistency Groups of HyperMetro

Function

This interface is used to query the number of HyperMetro consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, HEALTHSTATUS, RUNNINGSTATUS, PRIORITYSTATION-TYPE, and HDRINGID are supported.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Object statistics quantity.

Example

- Querying the number of HyperMetro consistency groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/count?
filter=NAME:aa

Response:
{
   "data": {
      "COUNT": "5"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.11.5 Others

2.9.11.5.1 Interface for Forcibly Starting a Consistency Group of HyperMetro

Function

This interface is used to forcibly start a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/
HyperMetro_ConsistentGroup/start

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
vstoreId	Optional	string	vStore ID.

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Result

N/A

Example

- Forcibly starting a HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/start
{
    "ID": "0022A104DEF50003"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.5.2 Interface for Performing a PrimarySecondary_Switchover on a Consistency Group of HyperMetro

Function

This interface is used to perform a primary/secondary switchover on a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/switch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

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Example

- Performing a primary/secondary switchover on a HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/switch
{
    "ID": "0022A104DEF50003"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.5.3 Interface for Suspending a Consistency Group of HyperMetro

Function

This interface is used to suspend a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/stop

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
PRIORITYSTATION-TYPE	Optional	enum	Whether the site is preferred. **The value is described as follows:** 0: Preferred 1: Non-preferred **Default:**1: Non-preferred
vstoreId	Optional	string	vStore ID.

Result

N/A

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Example

- Suspending a HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/stop
{
    "ID": "0022A104DEF50003",
    "PRIORITYSTATIONTYPE": "1"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.11.5.4 Interface for Synchronizing a Consistency Group of HyperMetro

Function

This interface is used to synchronize a HyperMetro consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperMetro_ConsistentGroup/sync

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperMetro consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Synchronizing a HyperMetro consistency group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/HyperMetro_ConsistentGroup/sync
{
    "ID": "0022A104DEF50003"
}
Response:
{
```

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```
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.12 dr_star

2.9.12.1 Add

2.9.12.1.1 Interface for Creating a DR Star Trio

Function

This interface is used to create a DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
disasterRecoveryStrategy	Mandatory	enum	Disaster recovery strategy. **The value is described as follows:** 1: HyperMetro 2: synchronous remote replication
memberType	Mandatory	enum	Member type. **The value is described as follows:** 1: pair 2: consistency group
asynchronousRemoteReplicationID	Mandatory	string	Asynchronous remote replication pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
hyperMetroID	Conditional	string	HyperMetro pair ID. **Note:**When the disaster recovery strategy is HyperMetro, the field must be issued.
swapStrategy	Optional	enum	Switchover strategy. **The value is described as follows:** 1: manual 2: automatic **Default:**2: automatic
swapSilentTime	Optional	uint32	Switchover silence time. **The value is described as follows:** The value ranges from 0 to 1800. **Default:**1800 **Unit:**seconds **Note:**When the switchover strategy is manual, the switchover silence time is not allowed to be issued. When the switchover strategy is automatic and no switchover silence time is delivered, the switchover silence time is the default value.
synchronousRemoteReplicationID	Conditional	string	Synchronous remote replication pair ID. **Note:**When the disaster recovery strategy is synchronous remote replication, this field must be issued.
NAME	Mandatory	string	DR Star trio name. **Length:**1~31

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57508: DR Star
ID	Mandatory	string	DR Star trio ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Enabled 2: Disabled 3: Invalid
disasterRecoveryStrategy	Mandatory	string(enum)	Disaster recovery strategy. **The value is described as follows:** 1: HyperMetro 2: synchronous remote replication
swapStrategy	Mandatory	string(enum)	Switchover strategy. **The value is described as follows:** 1: manual 2: automatic

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Parameter	Mandatory/ Conditional	Type	Description
memberType	Mandatory	string(enum)	Member type. **The value is described as follows:** 1: pair 2: consistency group
swapSilentTime	Mandatory	string(uint32)	Switchover silence time. **The value is described as follows:** The value ranges 0 to 30. **Unit:**minutes **Note:**When the switchover strategy is manual, the switchover silent time is 71582788, indicating an invalid value.
localResource	Mandatory	string	Local resource name.
NAME	Mandatory	string	DR Star trio name.

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Parameter	Mandatory/ Conditional	Type	Description
standbySyncMode	Mandatory	enum	Whether the remote replication is incremental or full synchronization after the DR Star trio switchover. After a DR Star trio is created, the initial synchronization mode of standby remote replication is full. The synchronization mode changes to incremental if asynchronous remote replication starts and completes synchronization when HyperMetro or synchronous remote replication is in the normal state. **The value is described as follows:** 0: full synchronization 1: incremental synchronization

Example

- Creating a DR Star trio.

```
Request: POST /deviceManager/rest/210235843910E6000009/dr_star

{
   "NAME": "dr_start",
   "disasterRecoveryStrategy": "2",
   "memberType": "1",
   "asynchronousRemoteReplicationID": "2100210203040506000000020000000b",
   "synchronousRemoteReplicationID": "2100210203040506000000020000000c",
   "swapStrategy": "2",
   "swapSilentTime": "600"
}

Response:
{
   "data": {
      "HEALTHSTATUS": "1",
      "ID": "2100210203040506000000500000002",
      "NAME": "dr_start",
      "RUNNINGSTATUS": "2",
      "TYPE": 57508,
      "disasterRecoveryStrategy": "2",
      "localResource": "LUN007",
```

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```
        "memberType": "1",
        "standbySyncMode": "0",
        "swapSilentTime": "10",
        "swapStrategy": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.12.2 Delete

2.9.12.2.1 Interface for Deleting a DR Star

Function

Delete a DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star trio ID.
isLocalExecute	Optional	bool	Whether local deletion is executed. **The value is described as follows:** false: no true: yes **Default:**false: no
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Delete a DR Star trio.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/dr_star/4846fb8c15c0001?
isLocalExecute=false
```

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```
Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.12.3 Modify

2.9.12.3.1 Interface for Modifying a DR Star Trio

Function

This interface is used to modify a DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/{id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star trio ID.
swapStrategy	Optional	enum	Switchover strategy. **The value is described as follows:** 1: manual 2: automatic
NAME	Optional	string	DR Star trio name. **Length:**1~32

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Parameter	Mandatory/Optional/Conditional	Type	Description
swapSilentTime	Optional	uint32	Switchover silent time. **The value is described as follows:** The value ranges 0 to 1800. **Default:**1800 **Note:**When the switchover strategy is manual, the switchover silent time is not allowed to be issued. When the switchover strategy is manual and no switchover silent time is delivered, the switchover silent time is the default value.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Modifying a DR Star trio.

```
Request: PUT/deviceManager/rest/210235843910E6000009/dr_star/
2100210203040506000000500000004
{
    "swapStrategy": "2",
    "swapSilentTime": "1800"
}

Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.12.4 Query

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2.9.12.4.1 Interface for Batch Querying DR Star Information

Function

This interface is used to batch query DR Star objects.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: ID, HEALTHSTATUS, RUNNINGSTATUS, memberType, and disasterRecoveryStrategy.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57508: DR Star
ID	Mandatory	string	DR Star trio ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Enabled 2: Disabled 3: Invalid
memberType	Mandatory	string(enum)	Member type. **The value is described as follows:** 1: pair 2: consistency group
disasterRecoveryStrategy	Mandatory	string(enum)	Disaster recovery strategy. **The value is described as follows:** 1: HyperMetro network 2: synchronous remote replication network
swapStrategy	Mandatory	string(enum)	Switchover strategy. **The value is described as follows:** 1: manual 2: automatic

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Parameter	Mandatory/ Conditional	Type	Description
swapSilentTime	Mandatory	string(uint32)	Switchover silence time. **The value is described as follows:** The value ranges 0 to 30. **Unit:**minutes **Note:**When the swap strategy is manual, the swap silent time is 71582788.
localResource	Mandatory	string	Local resource name.
NAME	Mandatory	string	DR Star trio name.
standbySyncMode	Mandatory	enum	Synchronization mode of the standby remote replication. **The value is described as follows:** 0: full synchronization 1: incremental synchronization
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying DR Star objects.

```
Request: GET /deviceManager/rest/210235843910E6000009/dr_star?range=[0-100]

Response: {
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "2100845b12719eb00000000500000000",
         "NAME": "dr_star_CSY0000_497256",
         "RUNNINGSTATUS": "1",
         "TYPE": 57508,
         "disasterRecoveryStrategy": "1",
         "localResource": "CSY0000",
         "memberType": "1",
         "standbySyncMode": "0",
         "swapSilentTime": "30",
         "swapStrategy": "2",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "HEALTHSTATUS": "1",
         "ID": "2100845b12719eb00000000500000001",
```

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```
            "NAME": "dr_star_CSY0001_290005",
            "RUNNINGSTATUS": "1",
            "TYPE": 57508,
            "disasterRecoveryStrategy": "1",
            "localResource": "CSY0001",
            "memberType": "1",
            "standbySyncMode": "0",
            "swapSilentTime": "30",
            "swapStrategy": "2",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.12.4.2 Interface for Implementing Associated Query of DR Star Member Information

Function

This interface is used to implement associated query basic information about DR Star members.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star_member/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 57508: DR Star
ASSOCIATEOBJID	Mandatory	string	ID of the associated DR Star object. **The value is described as follows:** DR Star trio ID.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57523: DR Star member
ID	Mandatory	string	Remote replication ID or HyperMetro ID.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty 14: Invalid
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unknown 1: Normal 23: Synchronizing 26: Split 33: To be recovered 34: Interrupted 35: Invalid 41: Paused 93: Force started 100: To be synchronized 110: Standby
featureType	Mandatory	string(enum)	Feature Type. **The value is described as follows:** 1: HyperMetro 2: synchronous remote replication 3: asynchronous remote replication

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Parameter	Mandatory/ Conditional	Type	Description
localResourceRole	Mandatory	string(enum)	Local resource role. **The value is described as follows:** 1: primary 2: secondary 3: preferred 4: non-preferred 5: invalid **Note:**When the site does not have a member, the member's value of this field is 5, indicating an invalid value.
consistencyGroup	Mandatory	string	Consistency group name.
remoteResource	Mandatory	string	Name of the remote resource.
localResource	Mandatory	string	Name of the local resource.
remoteArrayId	Mandatory	string	ID of the remote storage array at the secondary end.

Example

- Associated querying basic information about DR Star members.

```
Request: GET /deviceManager/rest/210235843910E6000009/dr_star_member/associate?
ASSOCIATEOBJTYPE=57508&ASSOCIATEOBJID=2c9d1e3f8c0b0000

Response:
{
   "data": [
      {
         "HEALTHSTATUS": "1",
         "ID": "8038bc14bd75000f",
         "RUNNINGSTATUS": "1",
         "TYPE": 57523,
         "consistencyGroup": "--",
         "featureType": "1",
         "localResource": "cmq-1540005",
         "localResourceRole": "3",
         "remoteArrayId": "1",
         "remoteResource": "cmq-1560005"
      },
      {
         "HEALTHSTATUS": "1",
         "ID": "8038bc14bd75000a",
         "RUNNINGSTATUS": "110",
```

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```
            "TYPE": 57523,
            "consistencyGroup": "--",
            "featureType": "3",
            "localResource": "cmq-1540005",
            "localResourceRole": "1",
            "remoteArrayId": "1",
            "remoteResource": "cmq-2120005"
        },
        {
            "HEALTHSTATUS": "1",
            "ID": "643e8c453ffa000f",
            "RUNNINGSTATUS": "1",
            "TYPE": 57523,
            "consistencyGroup": "--",
            "featureType": "3",
            "localResource": "--",
            "localResourceRole": "5",
            "remoteArrayId": "1",
            "remoteResource": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.12.4.3 Interface for Querying a DR Star Information

Function

This interface is used to query basic information about the DR Star object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star ID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57508:DR Star
ID	Mandatory	string	DR Star ID.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 0:unknown 1:enabled 2:disabled 3:invalid
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0:unknown 1:normal 2:fault
memberType	Mandatory	string(enum)	Member type. **The value is described as follows:** 1:pair 2:consistencyGroup
disasterRecoveryStrategy	Mandatory	string(enum)	Disaster recovery strategy **The value is described as follows:** 1:hyperMetro 2:syncRemoteReplication
localResource	Mandatory	string	Local resource name.

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Parameter	Mandatory/ Conditional	Type	Description
swapSilentTime	Mandatory	string(uint32)	Swap silent time **The value is described as follows:** The value ranges 0 to 30. **Note:**When the swap strategy is manual, the swap silent time is 71582788.
swapStrategy	Mandatory	string(enum)	Swap strategy. **The value is described as follows:** 1:manual 2:automatic
name	Mandatory	string	DR Star Name.
standbySyncMode	Mandatory	enum	Whether the remote replication is incremental or full synchronization after the DR Star switchover. After a DR Star object is created, the standby remote replication's initial synchronization mode is full synchronization. The standby remote replication's synchronization mode changes to incremental synchronization if the asynchronous remote replication starts and completes synchronization when the HyperMetro or synchronous remote replication is in the normal state. **The value is described as follows:** 0:Full Synchronization 1:Incremental Synchronization

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Example

- Querying basic information about the DR Star object.

```
Request: PUT /deviceManager/rest/210235843910E6000009/dr_star/2c9d1e3f8c0b0000

Response:
{
   "data": {
      "HEALTHSTATUS": "1",
      "ID": "8038bc14bd750001",
      "RUNNINGSTATUS": "2",
      "TYPE": 57508,
      "disasterRecoveryStrategy": "1",
      "localResource": "cmq-1540005",
      "memberType": "1",
      "swapSilentTime": "15",
      "swapStrategy": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.12.5 Others

2.9.12.5.1 Interface for Change a DR Star Third Resource Access

Function

This interface is used to change the read and write permissions of secondary LUNs in remote replication at the DR Star third site.

HighRisk

You are about to modify the read and write permissions on the common secondary LUN of two async remote replication pairs or consistency groups in DR Star trio ({0}).

This operation will change the read and write permissions on the common secondary LUN of two async remote replication pairs or consistency groups in DR Star trio(s).

Suggestion: Ensure that you have selected the correct DR Star trio(s).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/change_dr_third_res_access

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star ID.
thirdResourceAccess	Mandatory	enum	Read and write permissions of secondary LUNs. **The value is described as follows:** 2:read_only 3:read_write
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

1:This operation needs to be performed at the site that has two asynchronous remote replication links.

2:Before you perform this operation, if the remote replication not in the "Standby" state has normal links, ensure that it is in the "Split" state; if it has faulty links, ensure that it is in the disconnected or "Split" state.

3:Before performing this operation, ensure that you have entered the correct DR Star ID.

Example

- Changing the read and write permissions of secondary LUNs in remote replication at the DR Star third site.

```
Request: PUT /deviceManager/rest/210235843910E6000009/dr_star/change_dr_third_res_access
{
"ID": "34a2a2d6a9200000",
"thirdResourceAccess": "2"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.12.5.2 Interface for Disabling a DR Star

Function

Disable a DR Star trio.

HighRisk

You are about to disable DR Star trio ({0}).

After the DR Star trio status changes to disabled, it cannot work properly, and the disaster recovery reliability is reduced. The DR Star trio must be enabled again after the configuration.

Suggestion: Before performing this operation, ensure that you have correctly selected the DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/change_dr_disable

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star trio ID.
isLocalExecute	Optional	bool	Whether the operation is executed at the local end. **The value is described as follows:** false: no true: yes **Default:**false: no
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Disable a DR Star trio.

```
Request: PUT /deviceManager/rest/210235843910E6000009/dr_star/change_dr_disable
{
```

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```
    "ID": "8038bc14bd750000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.12.5.3 Interface for Enabing a DR Star

Function

Enable a DR Star trio.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/change_dr_enable

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star trio ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Enable a DR Star trio.

```
Request: PUT /deviceManager/rest/210235843910E6000009/dr_star/change_dr_enable
{
    "ID": "8038bc14bd750000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.12.5.4 Interface for Swapping a DR Star

Function

This interface is used to swap a DR Star.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/dr_star/swap_dr

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	DR Star ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Swapping a DR_Star.

```
Request: PUT /deviceManager/rest/210235843910E6000009/dr_star/swap_dr
{
    "ID": "8038bc14bd750000"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13 hyper_cdp

2.9.13.1 Add

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2.9.13.1.1 Interface for Creating a HyperCDP Consistency Group

Function

This interface is used to create a HyperCDP consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	ID of a source protection group. **The value is described as follows:** The value is an integer from 0 to 8191.
NAME	Mandatory	string	Name of the HyperCDP consistency group. **The value is described as follows:** The value contains 1 to 31 characters, including letters, digits, hyphens (-), underscores (_), and periods (.).

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Parameter	Mandatory/Optional/Conditional	Type	Description
subType	Optional	uint32	Type of the HyperCDP consistency group. **The value is described as follows:** 0..16383 **Note:** The value 0 indicates a HyperCDP consistency group of a common LUN. The value 1 indicates a HyperCDP consistency group of VVol LUNs. If this field is not delivered, the HyperCDP consistency group of a common LUN is used. Other values are not supported.
SECURESNAPENABLED	Optional	bool	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: no true: yes
PROTECTPERIOD	Conditional	uint64	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIODUNIT	Conditional	enum	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
AUTODELETEENABLED	Optional	bool	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Default:**false: no **Note:**If SECURESNAPENABLED is set to true, automatic deletion is not supported by default.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of the HyperCDP consistency group.

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Parameter	Mandatory/ Conditional	Type	Description
ISSCHEDULEDCDPCG	Mandatory	string	Whether it is a scheduled HyperCDP consistency group object. **The value is described as follows:** 0: no 1: yes
NAME	Mandatory	string	Name of the HyperCDP consistency group.
PARENTID	Mandatory	string	ID of a source protection group.
PARENTNAME	Mandatory	string	Name of a source protection group.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RUNNINGSTATUS	Mandatory	string	Running status of the HyperCDP consistency group. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 112: Rollback failure
TIMESTAMP	Mandatory	string	Time when the HyperCDP consistency group is activated.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57673: HyperCDP consistency group object

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Parameter	Mandatory/ Conditional	Type	Description
SECURESNAPENABLED	Mandatory	string(bool)	Indicates whether the secure function is enabled. **The value is described as follows:** false: no true: yes
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Note:** This parameter must be returned when SECURESNAPENABLED is set to true. Constraints: This parameter is for internal use only and is not displayed externally.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a HyperCDP consistency group.

```
Request: POST /deviceManager/rest/2014060910000000000/cdp_consistency_group
{
    "PARENTID": "1",
    "NAME": "LunCG00_CDPCGroup_1808230757041"
}

Response: {
    "data": {
        "ID": "0",
        "ISSCHEDULEDCDPCG": "0",
        "NAME": "LunCG00_CDPCGroup_1808230757041",
        "PARENTID": "1",
        "PARENTNAME": "LunCG002",
        "RESTORESPEED": "2",
        "RUNNINGSTATUS": "43",
        "TIMESTAMP": "1535005478",
        "TYPE": 57673,
        "SECURESNAPENABLED": "false",
        "vstoreId": "0",
```

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```
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.13.1.2 Interface for Creating a HyperCDP Object

Function

This interface is used to create a HyperCDP object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	ID of a source LUN. **The value is described as follows:** The value is an integer from 0 to 65535.
NAME	Mandatory	string	Name of a HyperCDP object. **The value is described as follows:** The value contains 1 to 31 characters, including letters, digits, hyphens (-), underlines (_), and periods (.).
SECURESNAPENABLED	Optional	bool	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: does not display HDD details. true: yes

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true.
AUTODELETEENABLED	Optional	bool	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57671: HyperCDP object
CONSISTENCYGROUP-NAME	Mandatory	string	Name of the HyperCDP consistency group.
ISSCHEDULEDCDP	Mandatory	string	Whether the HyperCDP object is created by a HyperCDP schedule. **The value is described as follows:** 0: no 1: yes
CONSISTENCYGROU-PID	Mandatory	string	ID of the HyperCDP consistency group to which the HyperCDP object belongs.
NAME	Mandatory	string	Name of the HyperCDP object.
ID	Mandatory	string	ID of a HyperCDP object.
RUNNINGSTATUS	Mandatory	string	Running status of the HyperCDP object. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 112: Rollback failed
PARENTID	Mandatory	string	Source LUN ID of the HyperCDP object.

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Parameter	Mandatory/ Conditional	Type	Description
RESTOREPROGRESS	Mandatory	string	Rollback progress. **The value is described as follows:** The value ranges from 0 to 100. **Note:**"255" is an invalid value.
RESTOREENDTIME	Mandatory	string	Time when the rollback is complete. **Note:**"-1" is an invalid value.
PARENTNAME	Mandatory	string	Source LUN name of the HyperCDP object.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RESTORESTARTTIME	Mandatory	string	Time when the rollback starts. **Note:**"-1" is an invalid value.
TIMESTAMP	Mandatory	string	Time when the HyperCDP object is activated.
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: does not display HDD details. true: yes

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Parameter	Mandatory/ Conditional	Type	Description
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year).
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Unit:**seconds **Note:**Constraints: This parameter is for internal use only and is not displayed externally.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a HyperCDP object.

```
Request: POST /deviceManager/rest/201406091000000000000/cdp
{
    "PARENTID": "0",
    "NAME": "LUN00100_HyperCDP_1808230844091"
}

Response: {
    "data": {
```

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```
        "CONSISTENCYGROUPID": "-1",
        "CONSISTENCYGROUPNAME": "--",
        "ID": "1",
        "ISSCHEDULEDCDP": "0",
        "NAME": "LUN00100_HyperCDP_1808230844091",
        "PARENTID": "0",
        "PARENTNAME": "LUN0040000",
        "RESTOREENDTIME": "-1",
        "RESTOREPROGRESS": "255",
        "RESTORESPEED": "2",
        "RESTORESTARTTIME": "-1",
        "RUNNINGSTATUS": "43",
        "TIMESTAMP": "1534990103",
        "TYPE": 57671,
        "SECURESNAPENABLED": "false",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.13.1.3 Interface for Creating a HyperCDP Schedule

Function

This interface is used to create a HyperCDP schedule.

HighRisk

You are about to create a file system secure snapshot schedule. After this operation, HyperCDP objects created through the schedule will have the secure snapshot function and cannot be deleted during the protection period.

Suggestion: Ensure that you want to perform this operation.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	HyperCDP schedule name. **The value is described as follows:** The value contains 1 to 31 ASCII characters, including digits, letters, periods (.), underscores (_), and hyphens (-).
DESCRIPTION	Optional	string	Description. **Length:**0~255
WEEKLYDAYS	Conditional	array	Time in a week when HyperCDP objects are created. **The value is described as follows:** 1:The value can be "mon", "tue", "wed", "thu", "fri", "sat", or "sun". For example: day_of_week=mon. 2:If you need to specify multiple days, separate them with commas (,). For example: day_of_week=mon,tue. **Note:**Non-secure snapshot. Parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
STARTTIMEOFWEEK	Conditional	string	Specific time in a week when HyperCDP objects are created. **The value is described as follows:** The value format is HH:MM. It is a point in time between "00:00-23:59". **Note:**Non-secure snapshot. Parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time.
WEEKLYSNAPSHOTNUM	Conditional	int32	Reserved number of HyperCDP objects created weekly. **The value is described as follows:** The value is an integer from 1 to 256. **Note:** 1: Non-secure snapshot. Parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time. 2: Secure snapshot. WEEKLYSNAPSHOTNUM cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYVALUE	Conditional	int32	Fixed interval. **The value is described as follows:** The value is an integer from 3 to 86400. **Note:**For a non-secure snapshot, the FREQUENCYVALUE and FREQUENCYNUM parameters must be delivered at the same time.
FREQUENCYNUM	Conditional	int32	Reserved number of HyperCDP objects created at fixed intervals. **The value is described as follows:** If the object type is file, the value is an integer ranging from 1 to 4096. If the object type is block, the value is an integer ranging from 1 to 60000. **Note:** 1: Non-secure snapshot. The FREQUENCYVALUE and FREQUENCYNUM parameters must be delivered at the same time. 2: Secure snapshot. FREQUENCYNUM cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYHOURS	Conditional	array	Time in a day when HyperCDP objects are created. **The value is described as follows:** The value is an integer from 0 to 23. Unit: hour. If you need to specify multiple hours, separate them with commas (,). For example: hour_of_day=1,2,3. **Note:**For a non-secure snapshot, DAYHOURS, DAYMINUTE, and DAILYSNAPSHOTNUM must be delivered at the same time.
DAYMINUTE	Conditional	int32	Specific time (accurate to minutes) in a day when HyperCDP objects are created. **The value is described as follows:** The value is an integer from 0 to 59. Unit: minute. **Note:**For a non-secure snapshot, DAYHOURS, DAYMINUTE, and DAILYSNAPSHOTNUM must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAILYSNAPSHOTNUM	Conditional	int32	Reserved number of HyperCDP objects created daily. **The value is described as follows:** The value is an integer from 1 to 512. **Note:** 1: Non-secure snapshot. The DAYHOURS, DAYMINUTE, and DAILYSNAPSHOTNUM parameters must be delivered at the same time. 2: Secure snapshot. DAILYSNAPSHOTNUM cannot be delivered.
MONTHDAYS	Conditional	array	Time in a month when HyperCDP objects are created. **The value is described as follows:** The value is an integer from 1 to 31 or "lastday". If multiple values are selected, separate them with commas (,). For example, "day_of_month=1,21,lastday". [NOTE: The value "lastday" indicates the last day of a month.] **Note:**Non-secure snapshot. Parameters MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
STARTTIMEOFMONTH	Conditional	string	Specific time in a month when HyperCDP objects are created. **The value is described as follows:** The value format is HH:MM. It is a point in time between "00:00-23:59". **Note:**Non-secure snapshot. Parameters MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM must be delivered at the same time.
MONTHSNAPSHOTNUM	Conditional	string	Reserved number of HyperCDP objects created monthly. **The value is described as follows:** The value is an integer from 1 to 256. **Note:** 1: Non-secure snapshot. Parameters MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM must be delivered at the same time. 2: Secure snapshot. MONTHSNAPSHOTNUM cannot be delivered.
OBJECTTYPE	Optional	enum	Type of an object added to the HyperCDP schedule. **The value is described as follows:** 0: block 1: file

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	uint32	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
FREQUENCYTAG	Optional	string	Fixed-period policy tag of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:** 1: HyperCDP schedules of the file system type support this parameter. HyperCDP schedules of the LUN type do not support this parameter. 2: Non-secure snapshot. This parameter must be delivered with FREQUENCYVALUE and FREQUENCYNUM at the same time. 3: File system secure snapshot. This parameter must be delivered together with FREQUENCYVALUE and FREQUENCYSECURES-NAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYTAG	Optional	string	Tag of the daily policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:** 1: HyperCDP schedules of the file system type support this parameter. HyperCDP schedules of the LUN type do not support this parameter. 2: Non-secure snapshot. This parameter must be delivered together with DAYHOURS, DAYMINUTE, and DAILYSNAPSHOTNUM. 3: File system secure snapshot. This parameter must be delivered together with DAYHOURS, DAYMINUTE, and DAYSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYTAG	Optional	string	Indicates the tag of the weekly policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:** 1: HyperCDP schedules of the file system type support this parameter. HyperCDP schedules of the LUN type do not support this parameter. 2: Non-secure snapshot. This parameter must be delivered together with WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM. 3: File system secure snapshot. This parameter must be delivered together with WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHTAG	Optional	string	Tag of the monthly policy for the HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:** 1: HyperCDP schedules of the file system type support this parameter. HyperCDP schedules of the LUN type do not support this parameter. 2: Non-secure snapshot. This parameter must be delivered together with MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM. 3: File system secure snapshot. This parameter must be delivered together with MONTHDAYS, STARTTIMEOFMONTH, and MONTHSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SECURESNAPENABLED	Optional	string(bool)	Whether the secure snapshot schedule function is enabled. **The value is described as follows:** false: no. true: yes **Default:**0: no
AUTODELETEENABLED	Optional	bool	Specifies whether the secure snapshot schedule supports automatic deletion. **The value is described as follows:** false: no true: yes **Default:**0: no **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.
PROTECTPERIOD		string(uint64)	Protection period of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true and OBJECTTYPE is not set to file.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIODUNIT		string(enum)	Unit of the protection period of the secure snapshot timing plan. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true and OBJECTTYPE is not set to file.
FREQUENCYSECURES-NAPENABLED	Optional	string(bool)	Whether the secure snapshot function is enabled for the fixed-period policy of the file system schedule. **The value is described as follows:** false: no true: yes **Default:**0: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYAUTODE-LETEENABLED	Optional	bool	Whether to enable automatic deletion of secure snapshots based on the fixed periodic policy of the file system schedule. **The value is described as follows:** false: no true: yes **Default:**0: no; **Note:** 1: This parameter is optional. The default value is false, indicating that the function is disabled. 2: File system secure snapshot. This parameter must be delivered together with FREQUENCYVALUE and FREQUENCYSECURES-NAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYPROTECT-PERIOD	Conditional	uint64	Protection period of the fixed-period policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When FREQUENCYPERIODU-NIT is set to day, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 7300. 2: When FREQUENCYPERIODU-NIT is set to month, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 240. 3: When FREQUENCYPERIODU-NIT is set to year, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 20. **Note:**File system secure snapshot. This parameter must be delivered together with the FREQUENCYVALUE, FREQUENCYSECURES-NAPENABLED and FREQUENCYPERIODU-NITparameters.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYPERIODUNIT	Conditional	enum	Unit of the protection period of the fixed-period policy in the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**File system secure snapshot. This parameter must be delivered together with FREQUENCYVALUE, FREQUENCYSECURESNAPENABLED and FREQUENCYPROTECTPERIOD.
DAYSECURESNAPENABLED	Optional	string(bool)	Whether the secure snapshot function of the file system schedule based on the daily policy is enabled. **The value is described as follows:** false: no true: yes **Default:**0: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYAUTODELETEENABLED	Optional	bool	Switch for automatically deleting secure snapshots of the file system schedule based on the daily policy. **The value is described as follows:** false: no true: yes **Default:**0: no **Note:** 1: This parameter is optional. The default value is false, indicating that the function is disabled. 2: File system secure snapshot. This parameter must be delivered together with DAYHOURS, DAYMINUTE, and DAYSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYPROTECTIONPERIOD	Conditional	uint64	Protection period of the daily periodic policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When DAYPERIODUNIT is set to day, the value of DAYPROTECTIONPERIOD ranges from 1 to 7300. 2: When DAYPERIODUNIT is set to month, the value of DAYPROTECTIONPERIOD ranges from 1 to 240. 3: When DAYPERIODUNIT is set to year, the value of DAYPROTECTIONPERIOD ranges from 1 to 20. **Note:**File system secure snapshot. This parameter must be delivered together with DAYHOURS, DAYMINUTE, DAYSECURESNAPENABLED and DAYPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYPERIODUNIT	Conditional	enum	Protection period unit of the daily periodic secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**File system secure snapshot. This parameter must be delivered together with DAYHOURS, DAYMINUTE, DAYSECURESNAPENABLED and DAYPROTECTIONPERIOD.
WEEKLYSECURESNAPENABLED	Optional	string(bool)	Whether the secure snapshot function of the weekly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Default:**0: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYAUTODELETEENABLED	Optional	bool	Whether to enable the function of automatically deleting secure snapshots of the file system schedule based on the weekly policy. **The value is described as follows:** false: no true: yes **Default:**0: no **Note:** 1: This parameter is optional. The default value is false, indicating that the function is disabled. 2: File system secure snapshot. This parameter must be delivered together with WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYPROTECTION-PERIOD	Conditional	uint64	Protection period of the weekly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When WEEKLYPERIODUNIT is set to day, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 7300. 2: When WEEKLYPERIODUNIT is set to month, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 240. 3: When WEEKLYPERIODUNIT is set to year, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 20. **Note:**File system secure snapshot. This parameter must be delivered together with WEEKLYDAYS, STARTTIMEOFWEEK, WEEKLYSECURESNA-PENABLED and WEEKLYPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYPERIODUNIT	Conditional	enum	Unit of the protection period in the weekly policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**File system secure snapshot. This parameter must be delivered together with WEEKLYDAYS, STARTTIMEOFWEEK, WEEKLYSECURESNAPENABLED and WEEKLYPROTECTIONPERIOD.
MONTHSECURESNAPENABLED	Optional	string(bool)	Whether the secure snapshot function of the monthly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Default:**0: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHAUTODELETEENABLED	Optional	bool	Whether to enable the function of automatically deleting secure snapshots of the file system schedule by month. **The value is described as follows:** false: no true: yes **Default:**0: no **Note:** 1: This parameter is optional. The default value is false, indicating that the function is disabled. 2: File system secure snapshot. This parameter must be delivered together with MONTHDAYS, STARTTIMEOFMONTH, and MONTHSECURESNAPENABLED.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHPROTECTION-PERIOD	Conditional	uint64	Protection period of the monthly periodic secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When MONTHPERIODUNIT is set to day, the value of MONTHPROTECTION-PERIOD ranges from 1 to 7300. 2: When MONTHPERIODUNIT is set to month, the value of MONTHPROTECTION-PERIOD ranges from 1 to 240. 3: When MONTHPERIODUNIT is set to year, the value of MONTHPROTECTION-PERIOD ranges from 1 to 20. **Note:**File system secure snapshot. This parameter must be delivered together with MONTHDAYS, STARTTIMEOFMONTH, MONTHSECURESNAPENABLED and MONTHPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHPERIODUNIT	Conditional	enum	Unit of the protection period in the monthly periodic policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**File system secure snapshot. This parameter must be delivered together with MONTHDAYS, STARTTIMEOFMONTH, MONTHSECURESNAPENABLED and MONTHPROTECTION-PERIOD.

Result

Parameter	Mandatory/Conditional	Type	Description
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
TYPE	Mandatory	enum	Type number of a managed object. **The value is described as follows:** 57527: HyperCDP schedule
NAME	Mandatory	string	HyperCDP schedule name.
ID	Mandatory	string	HyperCDP schedule ID.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYNUM	Mandatory	string	Number of HyperCDP objects in a fixed period. **Note:**"-1" is an invalid value.
FREQUENCYVALUE	Mandatory	string	Fixed interval period. **Note:**"-1" is an invalid value.
STARTTIMEOFWEEK	Mandatory	string	Specific time in a week when HyperCDP objects are created.
WEEKLYDAYS	Mandatory	array	Time in a week when HyperCDP objects are created. **The value is described as follows:** For example: [1,2] indicates that HyperCDP objects are created on Monday and Tuesday. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday
WEEKLYSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created weekly. **Note:**"-1" is an invalid value.
HEALTHSTATUS	Mandatory	enum	Health status of the HyperCDP schedule. **The value is described as follows:** 1: Normal 2: Faulty

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 30: Enabled 31: Disabled 53: Initializing 106: Deleting 111: Stopping
LASTEXECUTIONRE-SULT	Mandatory	enum	Last execution result. **The value is described as follows:** 1: success 2: failure **Note:**"0" is an invalid value.
DESCRIPTION	Mandatory	string	Description.
ENABLESCHEDULE	Mandatory	bool	Starting and stopping status of the HyperCDP schedule. **The value is described as follows:** false: stop true: start
LASTEXECUTIONTIME	Mandatory	uint64	Last execution time. **Note:**"-1" is an invalid value.
DAYHOURS	Mandatory	string	Time in a day when HyperCDP objects are created.
DAYMINUTE	Mandatory	int32	Specific time (accurate to minutes) in a day when HyperCDP objects are created.
DAILYSNAPSHOTNUM	Mandatory	int32	Number of HyperCDP objects created daily. **Note:**"-1" is an invalid value.
MONTHDAYS	Mandatory	string	Time in a month when HyperCDP objects are created.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIMEOFMONTH	Mandatory	string	Specific time in a month when HyperCDP objects are created.
MONTHSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created monthly. **Note:**"-1" is an invalid value.
OBJECTTYPE	Mandatory	enum	Type of an object added to the HyperCDP schedule. **The value is described as follows:** 0: block 1: file
vstoreId	Mandatory	string(uint32)	vStore ID.
scope	Mandatory	enum	Scope of the HyperCDP schedule.
isBuildinSchedule	Mandatory	bool	Whether the schedule is a default schedule.
FREQUENCYTAG	Mandatory	string	Fixed-period policy tag of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.

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Parameter	Mandatory/ Conditional	Type	Description
DAYTAG	Mandatory	string	Tag of the daily policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
WEEKLYTAG	Mandatory	string	Indicates the tag of the weekly policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
MONTHTAG	Mandatory	string	Tag of the monthly policy for the HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.

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Parameter	Mandatory/ Conditional	Type	Description
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: no true: yes
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** 46: day; 47: month; 48: year
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes
FREQUENCYSECURES-NAPENABLED	Conditional	string(bool)	Whether the secure snapshot function is enabled for the fixed-period policy of the file system schedule. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYAUTODE-LETEENABLED	Conditional	string(bool)	Whether to enable automatic deletion of secure snapshots based on the fixed periodic policy of the file system schedule. **The value is described as follows:** false: no true: yes
FREQUENCYPROTEC-TIONPERIOD	Conditional	uint64	Protection period of the fixed-period policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When FREQUENCYPERIODU-NIT is set to day, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 7300. 2: When FREQUENCYPERIODU-NIT is set to month, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 240. 3: When FREQUENCYPERIODU-NIT is set to year, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 20.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYPERIODUNIT	Conditional	enum	Unit of the protection period of the fixed-period policy in the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year
DAYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the file system schedule based on the daily policy is enabled. **The value is described as follows:** false: no true: yes
DAYAUTODELETEENABLED	Conditional	string(bool)	Switch for automatically deleting secure snapshots of the file system schedule based on the daily policy. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
DAYPROTECTIONPERIOD	Conditional	uint64	Protection period of the daily periodic policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When DAYPERIODUNIT is set to day, the value of DAYPROTECTIONPERIOD ranges from 1 to 7300. 2: When DAYPERIODUNIT is set to month, the value of DAYPROTECTIONPERIOD ranges from 1 to 240. 3: When DAYPERIODUNIT is set to year, the value of DAYPROTECTIONPERIOD ranges from 1 to 20.
DAYPERIODUNIT	Conditional	enum	Protection period unit of the daily periodic secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year
WEEKLYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the weekly file system schedule is enabled. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule based on the weekly policy. **The value is described as follows:** false: no true: yes
WEEKLYPROTECTION-PERIOD	Conditional	uint64	Protection period of the weekly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When WEEKLYPERIODUNIT is set to day, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 7300. 2: When WEEKLYPERIODUNIT is set to month, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 240. 3: When WEEKLYPERIODUNIT is set to year, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 20.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYPERIODUNIT	Conditional	enum	Unit of the protection period in the weekly policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year
MONTHSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the monthly file system schedule is enabled. **The value is described as follows:** false: no true: yes
MONTHAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule by month. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
MONTHPROTECTION-PERIOD	Conditional	uint64	Protection period of the monthly periodic secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When MONTHPERIODUNIT is set to day, the value of MONTHPROTECTION-PERIOD ranges from 1 to 7300. 2: When MONTHPERIODUNIT is set to month, the value of MONTHPROTECTION-PERIOD ranges from 1 to 240. 3: When MONTHPERIODUNIT is set to year, the value of MONTHPROTECTION-PERIOD ranges from 1 to 20.
MONTHPERIODUNIT	Conditional	enum	Unit of the protection period in the monthly periodic policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year

Usage Guidelines

1:Before performing this operation, confirm that the ID of the schedule to be set is correct.

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2:Before performing this operation, check that the ID of the schedule to be set exists.

3:Before performing this operation, check that the name of the schedule to be set exists.

Example

- Creating a HyperCDP schedule.

```
Request: POST /deviceManager/rest/201406091000000000000/snapshot_schedule
{
   "NAME": "HyperCDPSchedule011",
   "DESCRIPTION": "Just create a hyperCDP schedule.",
   "SCHEDULETYPE": 1,
   "FREQUENCYVALUE": 3600,
   "FREQUENCYNUM": 2,
   "DAYHOURS": [
      1
   ],
   "DAYMINUTE": 9,
   "DAILYSNAPSHOTNUM": 3,
   "WEEKLYDAYS": [
      0,
      1
   ],
   "STARTTIMEOFWEEK": "23:00",
   "WEEKLYSNAPSHOTNUM": 4,
   "MONTHDAYS": [
      4,
      13
   ],
   "STARTTIMEOFMONTH": "22:00",
   "MONTHSNAPSHOTNUM": 13
}

Response: {
   "data": {
      "DAILYSNAPSHOTNUM": "3",
      "DAYHOURS": "[1]",
      "DAYMINUTE": "9",
      "DESCRIPTION": "Just create a hyperCDP schedule.",
      "FREQUENCYNUM": "2",
      "FREQUENCYVALUE": "3600",
      "MONTHDAYS": "[4,13]",
      "MONTHSNAPSHOTNUM": "13",
      "NAME": "HyperCDPSchedule011",
      "SCHEDULETYPE": "1",
      "STARTTIMEOFMONTH": "22:00",
      "STARTTIMEOFWEEK": "23:00",
      "WEEKLYDAYS": "[0,1]",
      "WEEKLYSNAPSHOTNUM": "4",
      "TYPE": 57527,
      "ID": "8",
      "ENABLESCHEDULE": false,
      "OBJECTTYPE": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore",
      "isBuildinSchedule": "false",
      "scope": "0",
      "FREQUENCYTAG": "",
      "DAYTAG": "",
      "WEEKLYTAG": "",
      "MONTHTAG": "",
      "SECURESNAPENABLED": "false"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

- Create a HyperCDP schedule of the file system type.

```
Request: POST /deviceManager/rest/20140609100000000000/snapshot_schedule
{
    "DAILYSNAPSHOTNUM": 20,
    "DAYHOURS": [1],
    "DAYMINUTE": 0,
    "DAYSECURESNAPENABLED": false,
    "DAYTAG": "22222222222222222222222222222222",
    "DESCRIPTION": "Just create a hyperCDP schedule.",
    "FREQUENCYAUTODELETEENABLED": true,
    "FREQUENCYPERIODUNIT": "46",
    "FREQUENCYPROTECTPERIOD": 1,
    "FREQUENCYSECURESNAPENABLED": true,
    "FREQUENCYTAG": "11111111111111111111111111111111",
    "FREQUENCYVALUE": "3600",
    "NAME": "HyperCDPSchedule1",
    "OBJECTTYPE": "1",
    "SCHEDULETYPE": 1
}

Response: {
    "data": {
        "DAILYSNAPSHOTNUM": "20",
        "DAYHOURS": "[1]",
        "DAYMINUTE": "0",
        "DAYSECURESNAPENABLED": false,
        "DAYTAG": "22222222222222222222222222222222",
        "DESCRIPTION": "Just create a hyperCDP schedule.",
        "FREQUENCYAUTODELETEENABLED": true,
        "FREQUENCYPERIODUNIT": "46",
        "FREQUENCYPROTECTPERIOD": "1",
        "FREQUENCYSECURESNAPENABLED": true,
        "FREQUENCYTAG": "11111111111111111111111111111111",
        "FREQUENCYVALUE": "3600",
        "NAME": "HyperCDPSchedule1",
        "OBJECTTYPE": "1",
        "SCHEDULETYPE": "1",
        "TYPE": 57527,
        "ID": "11",
        "WEEKLYDAYS": "[]",
        "STARTTIMEOFWEEK": "",
        "WEEKLYSNAPSHOTNUM": "-1",
        "MONTHDAYS": "[]",
        "STARTTIMEOFMONTH": "",
        "MONTHSNAPSHOTNUM": "-1",
        "FREQUENCYNUM": "0",
        "ENABLESCHEDULE": false,
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "isBuildinSchedule": "false",
        "scope": "1",
        "WEEKLYTAG": "",
        "MONTHTAG": "",
        "WEEKLYSECURESNAPENABLED": false,
        "MONTHSECURESNAPENABLED": false,
        "SECURESNAPENABLED": "false"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.2 Delete

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2.9.13.2.1 Interface for Deleting a HyperCDP Consistency Group

Function

This interface is used to delete a HyperCDP consistency group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP/{id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	ID of a HyperCDP consistency group.
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before performing this operation, check whether the selected HyperCDP consistency group is correct and no longer necessary.

Example

- Deleting a HyperCDP consistency group.

```
Request: DELETE /deviceManager/rest/20140609100000000000/cdp_consistency_group/0

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.2.2 Interface for Deleting a HyperCDP Object

Function

This interface is used to delete a HyperCDP object.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP/{id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	ID of a HyperCDP object.
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before performing this operation, check whether the selected HyperCDP object is correct and no longer necessary.

Example

- Deleting a HyperCDP object.

```
Request: DELETE /deviceManager/rest/20140609100000000000/cdp/153

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.2.3 Interface for Deleting a HyperCDP Schedule

Function

This interface is used to delete a HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/{id}

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	ID of the HyperCDP schedule. **The value is described as follows:** The value is an integer from 1 to 512.
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
vstoreId	Optional	uint32	vStore ID.
forceFlag	Optional	bool	Whether to forcibly execute the configuration command. **The value is described as follows:** 0: The configuration operation is not forcibly performed. 1: The configuration operation is forcibly performed. **Default:**0

Result

N/A

Usage Guidelines

Before performing the operation, confirm that the schedule ID is correct and exits.

Example

- Deleting the HyperCDP schedule.

```
Request: DELETE/deviceManager/rest/2014060910000000000/snapshot_schedule/4?
SCHEDULETYPE=1
```

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```
Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Forcibly deleting a HyperCDP schedule.

```
Request: DELETE/deviceManager/rest/20140609100000000000/snapshot_schedule/4?
SCHEDULETYPE=1
{
   "forceFlag": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.3 Modify

2.9.13.3.1 Interface for Modifying a HyperCDP Consistency Group

Function

Modify the name and rollback speed of the HyperCDP consistency group.

HighRisk

You are about to modify the rate of restoring the HyperCDP consistency group ({0}) to "High" or "Highest". This operation may cause heavy service pressure and decrease the read/write performance of the host.

Suggestion: Perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP/{id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	ID of the HyperCDP consistency group. **The value is described as follows:** The value is an integer from 0 to 99999.
NAME	Conditional	string	Name of the HyperCDP consistency group after modification. **The value is described as follows:** The value contains 1 to 31 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). **Note:**At least one of NAME and RESTORESPEED must be delivered.
RESTORESPEED	Conditional	enum	Rollback speed. **The value is described as follows:** The value can be: 1: Low 2: Middle 3: High 4: Highest **Note:**At least one of NAME and RESTORESPEED must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
subType	Optional	uint32	Type of the HyperCDP consistency group. **The value is described as follows:** 0..16383 **Note:** The value 0 indicates a HyperCDP consistency group of a common LUN. The value 1 indicates a HyperCDP consistency group of VVol LUNs. If this field is not delivered, the HyperCDP consistency group of a common LUN is used. Other values are not supported.
SECURESNAPENABLED	Optional	bool	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: does not display HDD details. true: yes
PROTECTPERIOD	Conditional	uint64	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIODUNIT	Conditional	enum	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
AUTODELETEENABLED	Optional	bool	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Default:**0: no **Note:**If SECURESNAPENABLED is set to true, automatic deletion is not supported by default.
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

The new HyperCDP consistency group name must be different from the existing HyperCDP consistency group name.

Example

- Modify the name and rollback speed of the HyperCDP consistency group.

```
Request: PUT /deviceManager/rest/210406091000000000000/cdp_consistency_group/0
{
   "NAME": "LunCG00_CDPCGroup_180823",
   "RESTORESPEED": "3"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.3.2 Interface for Modifying a HyperCDP Object

Function

Modify the name and rollback speed of the HyperCDP object.

HighRisk

You are about to modify the rate of restoring the HyperCDP object ({0}) to "High" or "Highest". This operation may cause heavy service pressure and decrease the read/write performance of the host.

Suggestions: Perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP/{id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	ID of the HyperCDP object. **The value is described as follows:** The value is an integer from 0 to 1999999.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Name of the HyperCDP object after modification. **The value is described as follows:** The value contains 1 to 31 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). **Note:**At least one of NAME and RESTORESPEED must be delivered.
RESTORESPEED	Conditional	enum	Rollback speed. **The value is described as follows:** The value can be: 1: Low 2: Middle 3: High 4: Highest **Note:**At least one of NAME and RESTORESPEED must be delivered.
SECURESNAPENABLED	Optional	bool	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT		enum	Unit of the secure snapshot protection period. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is mandatory when SECURESNAPENABLED is set to true.
AUTODELETEENABLED	Optional	bool	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.
vstoreId	Optional	string	vStore ID.

Result

N/A

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Usage Guidelines

The new HyperCDP object name must be different from the existing HyperCDP object name.

Example

- Modify the name and rollback speed of the HyperCDP object.

```
Request: PUT /deviceManager/rest/20140609100000000000/cdp/0
{
   "NAME": "cdphfjeshfelsfehlehs",
   "RESTORESPEED": "4"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.3.3 Interface for Modifying a HyperCDP Schedule

Function

This interface is used to modify a HyperCDP schedule, including the name, schedule type, and time.

HighRisk

You are about to modify the file system secure snapshot properties of HyperCDP schedule ({0}). This operation will change the HyperCDP object creation time or automatic deletion function in the schedule. Suggestion: Before performing this operation, ensure that the selected HyperCDP schedule is correct.
You are about to enable the secure snapshot function for the file system schedule. After this operation, HyperCDP objects created through the schedule will have the secure snapshot function and cannot be deleted during the protection period. Suggestion: Ensure that you want to perform this operation.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/{id}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	ID of the HyperCDP schedule. **The value is described as follows:** The value is an integer from 1 to 512.
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
NAME	Optional	string	Name of the HyperCDP schedule. **The value is described as follows:** The value contains 1 to 31 ASCII characters, including digits, letters, periods (.), underscores (_), and hyphens (-).
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYDAYS	Conditional	array	Day in a week when scheduled HyperCDP objects are created. **The value is described as follows:** 1:The value can be "mon", "tue", "wed", "thu", "fri", "sat", or "sun". For example: day_of_week=mon. 2:If you need to specify multiple days, separate them with commas (,). For example: day_of_week=mon,tue. **Note:**When the weekly policy is enabled for non-secure snapshots, parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
STARTTIMEOFWEEK	Conditional	string	Specific time in a week when scheduled HyperCDP objects are created. **The value is described as follows:** The value is in the format of "HH:MM". It is a point in time between "00:00-23:59". **Note:**When the weekly policy is enabled for non-secure snapshots, parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time.
WEEKLYSNAPSHOTNUM	Conditional	int32	Reserved number of scheduled HyperCDP objects created weekly. **The value is described as follows:** The value is an integer from 1 to 256. **Note:**When the weekly policy is enabled for non-secure snapshots, parameters WEEKLYDAYS, STARTTIMEOFWEEK, and WEEKLYSNAPSHOTNUM must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYVALUE	Conditional	int32	Fixed interval. **The value is described as follows:** The value is an integer from 3 to 86400. **Note:**When the fixed-period policy is enabled for non-secure snapshots, the FREQUENCYVALUE and FREQUENCYNUM parameters must be delivered at the same time.
FREQUENCYNUM	Conditional	int32	Reserved number of scheduled HyperCDP objects created at fixed intervals. **The value is described as follows:** The value is an integer from 1 to 60000. **Note:**When the fixed-period policy is enabled for non-secure snapshots, the FREQUENCYVALUE and FREQUENCYNUM parameters must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYHOURS	Conditional	array	Time in a day when scheduled HyperCDP objects are created. **The value is described as follows:** The value is an integer from 0 to 23. Unit: hour. If you need to specify multiple hours, separate them with commas (,). For example: hour_of_day=1,2,3. **Note:**When the daily policy is enabled for non-secure snapshots, the DAYHOURS, DAILYSNAPSHOTNUM, and DAYMINUTE parameters must be delivered at the same time.
DAYMINUTE	Conditional	int32	Specific time in a day when scheduled HyperCDP objects are created. **The value is described as follows:** The value is an integer from 0 to 59. Unit: minute. **Note:**When the daily policy is enabled for non-secure snapshots, the DAYHOURS, DAILYSNAPSHOTNUM, and DAYMINUTE parameters must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAILYSNAPSHOTNUM	Conditional	int32	Reserved number of scheduled HyperCDP objects created daily. **The value is described as follows:** The value is an integer from 1 to 512. **Note:**When the daily policy is enabled for non-secure snapshots, the DAYHOURS, DAILYSNAPSHOTNUM, and DAYMINUTE parameters must be delivered at the same time.
MONTHDAYS	Conditional	array	Day in a month when scheduled HyperCDP objects are created. **The value is described as follows:** The value is an integer from 1 to 31 or "lastday". If multiple values are selected, separate them with commas (,). For example, "day_of_month=1,21,lastday". [NOTE: The value "lastday" indicates the last day of a month.] **Note:**When the monthly policy is enabled for non-secure snapshots, the MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM parameters must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
STARTTIMEOFMONTH	Conditional	string	Specific time in a month when scheduled HyperCDP objects are created. **The value is described as follows:** The value is in the format of "HH:MM". It is a point in time between "00:00-23:59". **Note:**When the monthly policy is enabled for non-secure snapshots, the MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM parameters must be delivered at the same time.
MONTHSNAPSHOTNUM	Conditional	string	Reserved number of scheduled HyperCDP objects created monthly. **The value is described as follows:** The value is an integer from 1 to 256. **Note:**When the monthly policy is enabled for non-secure snapshots, the MONTHDAYS, STARTTIMEOFMONTH, and MONTHSNAPSHOTNUM parameters must be delivered at the same time.
vstoreId	Optional	uint32	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYTAG	Optional	string	Fixed-period policy tag of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:**This parameter is supported only by the HyperCDP schedule of the file system type not the HyperCDP schedule of the LUN type.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYTAG	Optional	string	Tag of the daily policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:**The HyperCDP schedule of the file system type supports this parameter. The HyperCDP schedule of the LUN type does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYTAG	Optional	string	Indicates the tag of the weekly policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:**The HyperCDP schedule of the file system type supports this parameter. The HyperCDP schedule of the LUN type does not support this parameter.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHTAG	Optional	string	Tag of the monthly policy for the HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter. **Length:**0..32 **Note:**The HyperCDP schedule of the file system type supports this parameter. The HyperCDP schedule of the LUN type does not support this parameter.
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. **Note:**This parameter is supported by the HyperCDP schedule with the secure snapshot function enabled and must be delivered together with PROTECTPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PROTECTPERIODUNIT	Conditional	enum	Unit of the protection period of a secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is supported by the HyperCDP schedule with the secure snapshot function enabled and must be delivered together with PROTECTPERIOD.
AUTODELETEENABLED	Optional	bool	Whether a secure snapshot schedule supports automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYSECURES-NAPENABLED	Optional	bool	Whether the secure snapshot function is enabled for a fixed-period file system schedule. **The value is described as follows:** false: no true: yes **Note:** 1: When FREQUENCYSECURES-NAPENABLED is false, FREQUENCYNUM must be delivered. 2: When FREQUENCYSECURES-NAPENABLED is set to true, FREQUENCYNUM cannot be delivered, and FREQUENCYPROTEC-TIONPERIOD and FREQUENCYPERIODU-NIT must be delivered at the same time.
FREQUENCYAUTODE-LETEENABLED	Optional	bool	Whether to enable automatic deletion of secure snapshots for a fixed-period file system schedule. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYPROTECT-PERIOD	Optional	uint64	Protection period of a fixed-period secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When FREQUENCYPERIODU-NIT is set to day, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 7300. 2: When FREQUENCYPERIODU-NIT is set to month, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 240. 3: When FREQUENCYPERIODU-NIT is set to year, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 20. **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with FREQUENCYPERIODU-NIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FREQUENCYPERIODUNIT	Optional	enum	Unit of the protection period of a fixed-period secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with FREQUENCYPROTECTPERIOD.
DAYSECURESNAPENABLED	Optional	bool	Whether the secure snapshot function is enabled for a daily file system schedule. **The value is described as follows:** false: no true: yes **Note:** 1: When DAYSECURESNAPENABLED is set to false, DAILYSNAPSHOTNUM must be delivered. 2: When DAYSECURESNAPENABLED is set to true, DAILYSNAPSHOTNUM cannot be delivered, and DAYPROTECTIONPERIOD and DAYPERIODUNIT must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYAUTODELETEENABLED	Optional	bool	Whether automatic deletion of secure snapshots is enabled for a daily file system schedule. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYPROTECTIONPERIOD	Optional	uint64	Protection period of a daily secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When DAYPERIODUNIT is set to day, the value of DAYPROTECTIONPERIOD ranges from 1 to 7300. 2: When DAYPERIODUNIT is set to month, the value of DAYPROTECTIONPERIOD ranges from 1 to 240. 3: When DAYPERIODUNIT is set to year, the value of DAYPROTECTIONPERIOD ranges from 1 to 20. **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with DAYPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DAYPERIODUNIT	Optional	enum	Unit of the protection period of a daily secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with DAYPROTECTIONPERIOD.
WEEKLYSECURESNAPENABLED	Optional	bool	Whether the secure snapshot function is enabled for a weekly file system schedule. **The value is described as follows:** false: no true: yes **Note:** 1: When WEEKLYSECURESNAPENABLED is false, WEEKLYSNAPSHOTNUM must be delivered. 2: When WEEKLYSECURESNAPENABLED is set to true, WEEKLYSNAPSHOTNUM cannot be delivered, and WEEKLYPROTECTIONPERIOD and WEEKLYPERIODUNIT must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYAUTODELETEENABLED	Optional	bool	Whether automatic deletion of secure snapshots is enabled for a weekly file system schedule. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYPROTECTION-PERIOD	Optional	uint64	Protection period of a weekly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When WEEKLYPERIODUNIT is set to day, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 7300. 2: When WEEKLYPERIODUNIT is set to month, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 240. 3: When WEEKLYPERIODUNIT is set to year, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 20. **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with WEEKLYPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WEEKLYPERIODUNIT	Optional	enum	Unit of the protection period of a weekly secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with WEEKLYPROTECTION-PERIOD.
MONTHSECURESNAPENABLED	Optional	bool	Whether the secure snapshot function is enabled for a monthly file system schedule. **The value is described as follows:** false: no true: yes **Note:** 1: When MONTHSECURESNAPENABLED is false, MONTHSNAPSHOTNUM must be delivered. 2: When MONTHSECURESNAPENABLED is set to true, MONTHSNAPSHOTNUM cannot be delivered and MONTHPROTECTION-PERIOD and MONTHPERIODUNIT must be delivered at the same time.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHAUTODELETEENABLED	Optional	bool	Whether automatic deletion of secure snapshots is enabled for a monthly file system schedule. **The value is described as follows:** false: no true: yes **Note:**This parameter is optional. The default value is false, indicating that the function is disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHPROTECTION-PERIOD	Optional	uint64	Protection period of a monthly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When MONTHPERIODUNIT is set to day, the value of MONTHPROTECTION-PERIOD ranges from 1 to 7300. 2: When MONTHPERIODUNIT is set to month, the value of MONTHPROTECTION-PERIOD ranges from 1 to 240. 3: When MONTHPERIODUNIT is set to year, the value of MONTHPROTECTION-PERIOD ranges from 1 to 20. **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with MONTHPERIODUNIT.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MONTHPERIODUNIT	Optional	enum	Unit of the protection period of a monthly secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:**This parameter is supported by the file system HyperCDP schedule with the secure snapshot function enabled and must be delivered together with MONTHPROTECTION-PERIOD.

Result

N/A

Usage Guidelines

1:Before performing this operation, confirm that the schedule ID is correct.

2:Before performing the operation, confirm that the name of the schedule to be modified is correct and exits.

3:Before performing this operation, confirm that the name of the schedule to be set exists.

4:Deliver at least one optional parameter.

Example

- Modifying information about the HyperCDP schedule.

```
Request: PUT /deviceManager/rest/20140609100000000000/snapshot_schedule/6
{
   "NAME": "HyperCDPSchedule006-modiry",
   "DESCRIPTION": "Modify",
   "FREQUENCYTAG":"11111111111111111111111111111122",
   "FREQUENCYNUM": 44,
   "DAYMINUTE": 10,
   "DAILYSNAPSHOTNUM": 12,
   "WEEKLYDAYS": [
      1
   ],
   "STARTTIMEOFWEEK": "22:00",
   "WEEKLYSNAPSHOTNUM": 12,
   "STARTTIMEOFMONTH": "22:00",
```

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```
    "MONTHSNAPSHOTNUM": 12,
    "SCHEDULETYPE": 1,
    "FREQUENCYVALUE": 3600,
    "DAYHOURS": [
        15,
        16
    ],
    "MONTHDAYS": [
        2
    ]
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.4 Query

2.9.13.4.1 Interface for Batch Querying HyperCDP Consistency Groups

Function

This interface is used to batch query HyperCDP consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, and PARENTID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query scope. **The value is described as follows:** Query scope: [i-j]. "range" specifies the object whose sequence subscript is i to j-1 in the query result. It is used for pagination query of data.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of the HyperCDP consistency group.
ISSCHEDULEDCDPCG	Mandatory	string	Whether it is a scheduled HyperCDP consistency group object. **The value is described as follows:** 0: no 1: yes
NAME	Mandatory	string	Name of the HyperCDP consistency group.
PARENTID	Mandatory	string	ID of a source protection group.
PARENTNAME	Mandatory	string	Name of a source protection group.

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Parameter	Mandatory/ Conditional	Type	Description
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RUNNINGSTATUS	Mandatory	string	Running status of the HyperCDP consistency group. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 112: Rollback failure
TIMESTAMP	Mandatory	string	Time when the HyperCDP consistency group is activated.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57673: HyperCDP consistency group
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** 0: no; 1: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Note:** This parameter must be returned when SECURESNAPENABLED is set to true. Constraints: This parameter is for internal use only and is not displayed externally.
ISINPROTECTIONPER-IOD	Conditional	bool	Whether it is in the protection period. **The value is described as follows:** false: not in the protection period; true: in the protection period
LEFTDAYS	Conditional	uint32	Number of remaining days. **Note:**Number of remaining days.
LEFTHOURS	Conditional	uint32	Remaining hours. **Note:**Remaining hours.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying HyperCDP consistency groups.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp_consistency_group?range=[0-100]

Response: {
   "data": [
      {
         "ID": "0",
         "ISSCHEDULEDCDPCG": "0",
         "NAME": "LunCG00_CDPCGroup_1808230627161",
         "PARENTID": "1",
         "PARENTNAME": "LunCG002",
         "RESTORESPEED": "2",
         "RUNNINGSTATUS": "43",
         "TIMESTAMP": "1535005478",
         "TYPE": 57673,
```

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```
            "SECURESNAPENABLED": "true",
            "PROTECTPERIOD": "10",
            "PROTECTPERIODUNIT": "48",
            "AUTODELETEENABLED": "false",
            "SECURESNAPCLOCKTIME": "1534990103",
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "ID": "1",
            "ISSCHEDULEDCDPCG": "0",
            "NAME": "LunCG00_CDPCGroup_1808230627162",
            "PARENTID": "2",
            "PARENTNAME": "LunCG003",
            "RESTORESPEED": "2",
            "RUNNINGSTATUS": "43",
            "TIMESTAMP": "1535005479",
            "TYPE": 57673,
            "SECURESNAPENABLED": "true",
            "PROTECTPERIOD": "10",
            "PROTECTPERIODUNIT": "48",
            "AUTODELETEENABLED": "false",
            "SECURESNAPCLOCKTIME": "1534990103",
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "ID": "2",
            "ISSCHEDULEDCDPCG": "0",
            "NAME": "LunCG00_CDPCGroup_1808230627163",
            "PARENTID": "3",
            "PARENTNAME": "LunCG004",
            "RESTORESPEED": "2",
            "RUNNINGSTATUS": "43",
            "TIMESTAMP": "1535005479",
            "TYPE": 57673,
            "SECURESNAPENABLED": "true",
            "PROTECTPERIOD": "10",
            "PROTECTPERIODUNIT": "48",
            "AUTODELETEENABLED": "false",
            "SECURESNAPCLOCKTIME": "1534990103",
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying HyperCDP consistency groups by using the IDs of source protection groups.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp_consistency_group?
filter=PARENTID::1&range=[0-100]

Response: {
    "data": [
        {
            "ID": "0",
```

```
            "ISSCHEDULEDCDPCG": "0",
            "NAME": "LunCG00_CDPCGroup_1808230627161",
            "PARENTID": "1",
            "PARENTNAME": "LunCG002",
            "RESTORESPEED": "2",
            "RUNNINGSTATUS": "43",
            "TIMESTAMP": "1535005478",
            "TYPE": 57673,
            "SECURESNAPENABLED": "false",
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.13.4.2 Interface for Batch Querying HyperCDP Objects

Function

This interface is used to batch query HyperCDP objects.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, and PARENTID. **Note:**At least one of filter and range must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**At least one of filter and range must be delivered.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57671: HyperCDP object
CONSISTENCYGROUP-NAME	Mandatory	string	Name of a HyperCDP consistency group.
ID	Mandatory	string	ID of a HyperCDP object.
NAME	Mandatory	string	Name of a HyperCDP object.
CONSISTENCYGROU-PID	Mandatory	string	ID of a HyperCDP consistency group that the HyperCDP object belongs to.

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Parameter	Mandatory/ Conditional	Type	Description
ISSCHEDULEDCDP	Mandatory	string	Whether it is a scheduled HyperCDP object. **The value is described as follows:** 0: no 1: yes
PARENTID	Mandatory	string	Source LUN ID of a HyperCDP object.
PARENTNAME	Mandatory	string	Source LUN name of a HyperCDP object.
RESTOREENDTIME	Mandatory	string	Time when the rollback completes. **Note:**"-1" is an invalid value.
RESTOREPROGRESS	Mandatory	string	Rollback progress. **The value is described as follows:** 0~100.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RESTORESTARTTIME	Mandatory	string	Time when the rollback starts. **Note:**"-1" is an invalid value.
RUNNINGSTATUS	Mandatory	string	Running status of a HyperCDP object. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 112: rollback failed

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Parameter	Mandatory/ Conditional	Type	Description
TIMESTAMP	Mandatory	string	Time when a HyperCDP object is activated.
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: does not display HDD details. true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: does not display HDD details. true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Note:** This parameter must be returned when SECURESNAPENABLED is set to true. Constraints: This parameter is for internal use only and is not displayed externally.
ISINPROTECTIONPER-IOD	Conditional	bool	Whether it is in the protection period. **The value is described as follows:** false: not in the protection period; true: in the protection period
LEFTDAYS	Conditional	uint32	Number of remaining days. **Note:**Number of remaining days.
LEFTHOURS	Conditional	uint32	Remaining hours. **Note:**Remaining hours.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- This interface is used to query HyperCDP objects in batches.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp?range=[0-100]

Response: {
   "data": [
      {
         "CONSISTENCYGROUPID": "0",
         "CONSISTENCYGROUPNAME": "LunCG002_CDPCGroup_180823021008",
         "ID": "1",
         "ISSCHEDULEDCDP": "0",
         "NAME": "LUN004000_1808230208230000001",
         "PARENTID": "3",
         "PARENTNAME": "LUN0040000",
         "RESTOREENDTIME": "-1",
         "RESTOREPROGRESS": "255",
         "RESTORESPEED": "2",
         "RESTORESTARTTIME": "-1",
         "RUNNINGSTATUS": "43",
         "TIMESTAMP": "1534990103",
         "TYPE": 57671,
         "SECURESNAPENABLED": "true",
         "PROTECTPERIOD": "10",
         "PROTECTPERIODUNIT": "48",
         "AUTODELETEENABLED": "false",
         "SECURESNAPCLOCKTIME": "1534990103",
         "ISINPROTECTIONPERIOD": "true",
         "LEFTDAYS": "2",
         "LEFTHOURS": "48",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- This interface is used to query HyperCDP objects by name.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp?filter=NAME:
LUN004000_1808230208230000001&range=[0-100]

Response: {
   "data": [
      {
         "CONSISTENCYGROUPID": "0",
         "CONSISTENCYGROUPNAME": "LunCG002_CDPCGroup_180823021008",
         "ID": "1",
         "ISSCHEDULEDCDP": "0",
         "NAME": "LUN004000_1808230208230000001",
         "PARENTID": "3",
         "PARENTNAME": "LUN0040000",
         "RESTOREENDTIME": "-1",
         "RESTOREPROGRESS": "255",
         "RESTORESPEED": "2",
         "RESTORESTARTTIME": "-1",
         "RUNNINGSTATUS": "43",
         "TIMESTAMP": "1534990103",
         "TYPE": 57671,
         "SECURESNAPENABLED": "true",
         "PROTECTPERIOD": "10",
         "PROTECTPERIODUNIT": "48",
         "AUTODELETEENABLED": "false",
         "SECURESNAPCLOCKTIME": "1534990103",
```

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```
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying HyperCDP objects based on the source LUN ID and HyperCDP object ID.

```
Request: GET /deviceManager/rest/20140609100000000000/cdp?filter=PARENTID::3 and
ID:11&range=[0-100]

Response: {
    "data": [
        {
            "CONSISTENCYGROUPID": "5",
            "CONSISTENCYGROUPNAME": "LunCG00_freq1808231009300000005",
            "ID": "11",
            "ISSCHEDULEDCDP": "1",
            "NAME": "LUN004000_1808230209300000011",
            "PARENTID": "3",
            "PARENTNAME": "LUN0040000",
            "RESTOREENDTIME": "-1",
            "RESTOREPROGRESS": "255",
            "RESTORESPEED": "2",
            "RESTORESTARTTIME": "-1",
            "RUNNINGSTATUS": "43",
            "TIMESTAMP": "1534994890",
            "TYPE": 57671,
            "SECURESNAPENABLED": "true",
            "PROTECTPERIOD": "10",
            "PROTECTPERIODUNIT": "48",
            "AUTODELETEENABLED": "false",
            "SECURESNAPCLOCKTIME": "1534990103",
            "ISINPROTECTIONPERIOD": "true",
            "LEFTDAYS": "2",
            "LEFTHOURS": "48",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.4.3 Interface for Batch Querying HyperCDP Schedules

Function

This interface is used to batch query HyperCDP schedules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, and HEALTHSTATUS.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.
vstoreId	Optional	uint32	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57527: HyperCDP schedule
NAME	Mandatory	string	HyperCDP schedule name.
ID	Mandatory	string	HyperCDP schedule ID.
FREQUENCYNUM	Mandatory	string	Number of HyperCDP objects in a fixed period. **Note:**"-1" is an invalid value.
FREQUENCYVALUE	Mandatory	string	Fixed interval period. **Unit:**seconds **Note:**"-1" is an invalid value.
STARTTIMEOFWEEK	Mandatory	string	Specific time in a week when HyperCDP objects are created.
WEEKLYDAYS	Mandatory	array	Time in a week when HyperCDP objects are created. **The value is described as follows:** For example: [1,2] indicates that HyperCDP objects are created on Monday and Tuesday. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created weekly. **Note:**"-1" is an invalid value.
HEALTHSTATUS	Mandatory	enum	Health status of the HyperCDP schedule. **The value is described as follows:** 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 30: Enabled 31: Disabled 53: Initializing 106: Deleting 111: Stopping
LASTEXECUTIONRE-SULT	Mandatory	enum	Last execution result. **The value is described as follows:** 1: success 2: failure **Note:**"0" is an invalid value.
DESCRIPTION	Mandatory	string	Description.
ENABLESCHEDULE	Mandatory	bool	Starting and stopping status of the HyperCDP schedule. **The value is described as follows:** false: stopped true: started
LASTEXECUTIONTIME	Mandatory	uint64	Last execution time. **Note:**"-1" is an invalid value.
DAYHOURS	Mandatory	string	Time in a day when HyperCDP objects are created.

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Parameter	Mandatory/ Conditional	Type	Description
DAYMINUTE	Mandatory	int32	Specific time (accurate to minutes) in a day when HyperCDP objects are created.
DAILYSNAPSHOTNUM	Mandatory	int32	Number of HyperCDP objects created daily. **Note:**"-1" is an invalid value.
MONTHDAYS	Mandatory	string	Time in a month when HyperCDP objects are created.
STARTTIMEOFMONTH	Mandatory	string	Specific time in a month when HyperCDP objects are created.
MONTHSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created monthly. **Note:**"-1" is an invalid value.
lunNum	Mandatory	uint32	Number of LUNs added to the HyperCDP schedule. **The value is described as follows:** 0..65536
protectionGroupNum	Mandatory	uint32	Number of protection groups added to the HyperCDP schedule. **The value is described as follows:** 0..8192
OBJECTTYPE	Mandatory	enum	Type of an object added to the HyperCDP schedule. **The value is described as follows:** 0: block 1: file
fsNum	Mandatory	string(uint32)	Number of file systems added to the HyperCDP schedule.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string(uint32)	vStore ID.
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters consisting of letters, digits, underscores (_), periods (.), and hyphens (-).
scope	Mandatory	enum	Scope of the HyperCDP schedule.
isBuildinSchedule	Mandatory	bool	Whether the schedule is a default schedule.
FREQUENCYTAG	Mandatory	string	Fixed-period policy tag of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
DAYTAG	Mandatory	string	Tag of the daily policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYTAG	Mandatory	string	Indicates the tag of the weekly policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
MONTHTAG	Mandatory	string	Tag of the monthly policy for the HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
SECURESNAPENABLED	Mandatory	string(bool)	Whether the secure snapshot schedule function is enabled. **The value is described as follows:** false: no true: yes

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELETEENABLED	Conditional	string(bool)	Specifies whether the secure snapshot schedule supports automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIOD	Conditional	string(uint64)	Protection period of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This field is mandatory for LUN schedules when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the protection period of the secure snapshot timing plan. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This field is mandatory for LUN schedules when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYSECURES-NAPENABLED	Conditional	string(bool)	Whether the secure snapshot function is enabled for the fixed-period policy of the file system schedule. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.
FREQUENCYAUTODE-LETEENABLED	Conditional	string(bool)	Whether to enable automatic deletion of secure snapshots based on the fixed-periodic policy of the file system schedule. **The value is described as follows:** false: no true: yes **Note:**This field is mandatory for file system schedules when FREQUENCYSECURES-NAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYPROTECT-PERIOD	Conditional	uint64	Protection period of the fixed-period policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When FREQUENCYPERIODU-NIT is set to day, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 7300. 2:When FREQUENCYPERIODU-NIT is set to month, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 240. 3:When FREQUENCYPERIODU-NIT is set to year, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when FREQUENCYSECURES-NAPENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYPERIODUNIT	Conditional	enum	Unit of the protection period of the fixed-period policy in the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when FREQUENCYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
DAYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the daily file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
DAYAUTODELETEENA-BLED	Conditional	string(bool)	Switch for automatically deleting secure snapshots of the file system schedule based on the daily policy. **The value is described as follows:** false: no true: yes **Note:**This field is mandatory for file system schedules when DAYSECURESNAPENA-BLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
DAYPROTECTIONPER-IOD	Conditional	uint64	Protection period of the daily periodic policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When DAYPERIODUNIT is set to day, the value of DAYPROTECTIONPER-IOD ranges from 1 to 7300. 2: When DAYPERIODUNIT is set to month, the value of DAYPROTECTIONPER-IOD ranges from 1 to 240. 3: When DAYPERIODUNIT is set to year, the value of DAYPROTECTIONPER-IOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when DAYSECURESNAPENA-BLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
DAYPERIODUNIT	Conditional	enum	Unit of the protection period in the daily policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when DAYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
WEEKLYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the weekly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule based on the weekly policy. **The value is described as follows:** false: no true: yes **Note:**This field is mandatory for file system schedules when WEEKLYSECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYPROTECTION-PERIOD	Conditional	uint64	Protection period of the weekly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When WEEKLYPERIODUNIT is set to day, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 7300. 2:When WEEKLYPERIODUNIT is set to month, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 240. 3:When WEEKLYPERIODUNIT is set to year, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when WEEKLYSECURESNA-PENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYPERIODUNIT	Conditional	enum	Unit of the protection period in the weekly policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when WEEKLYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
MONTHSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the monthly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule by month. **The value is described as follows:** false: no true: yes **Note:**This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHPROTECTION-PERIOD	Conditional	uint64	Protection period of the monthly periodic secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When MONTHPERIODUNIT is set to day, the value of MONTHPROTECTION-PERIOD ranges from 1 to 7300. 2:When MONTHPERIODUNIT is set to month, the value of MONTHPROTECTION-PERIOD ranges from 1 to 240. 3:When MONTHPERIODUNIT is set to year, the value of MONTHPROTECTION-PERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHPERIODUNIT	Conditional	enum	Unit of the protection period in the monthly periodic policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true. 2. The value -1 is invalid.

Usage Guidelines

Before performing this operation, ensure that the schedule exists.

Example

- Batch querying HyperCDP schedules in detail.

```
Request: GET /deviceManager/rest/20140609100000000000/snapshot_schedule?
SCHEDULETYPE=1&filter=ID:1&range=[0-100]

Response: {
   "data": [
      {
         "DAILYSNAPSHOTNUM": "-1",
         "DAYHOURS": "[2]",
         "DAYMINUTE": "0",
         "DESCRIPTION": "",
         "FREQUENCYNUM": "-1",
         "FREQUENCYVALUE": "-1",
         "ID": "1",
         "lunNum": "0",
         "protectionGroupNum": "0",
         "MONTHDAYS": "[]",
         "MONTHSNAPSHOTNUM": "-1",
         "NAME": "sche1",
         "SCHEDULETYPE": "1",
         "STARTTIMEOFMONTH": "",
         "STARTTIMEOFWEEK": "",
         "WEEKLYDAYS": "[]",
         "WEEKLYSNAPSHOTNUM": "-1",
         "DAYAUTODELETEENABLED": true,
         "DAYPERIODUNIT": "46",
         "DAYPROTECTIONPERIOD": "1",
         "DAYSECURESNAPENABLED": true,
         "DAYTAG": "1111",
```

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```
            "ENABLESCHEDULE": false,
            "FREQUENCYSECURESNAPENABLED": false,
            "FREQUENCYTAG": "",
            "HEALTHSTATUS": "1",
            "LASTEXECUTIONRESULT": "0",
            "LASTEXECUTIONTIME": "-1",
            "MONTHSECURESNAPENABLED": false,
            "MONTHTAG": "",
            "OBJECTTYPE": "1",
            "RUNNINGSTATUS": "31",
            "SECURESNAPENABLED": "false",
            "WEEKLYSECURESNAPENABLED": false,
            "WEEKLYTAG": "",
            "isBuildinSchedule": "false",
            "scope": "1",
            "vstoreId": "1",
            "vstoreName": "v1",
            "fsNum": "0",
            "TYPE": 57527
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.13.4.4 Interface for Querying a HyperCDP Consistency Group

Function

This interface is used to query information about the HyperCDP consistency group whose ID is specified.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the HyperCDP consistency group. **The value is described as follows:** The value is an integer from 0 to 99999.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of the HyperCDP consistency group.
ISSCHEDULEDCDPCG	Mandatory	string	Whether it is a scheduled HyperCDP consistency group object. **The value is described as follows:** 0: no 1: yes
NAME	Mandatory	string	Name of the HyperCDP consistency group.
PARENTID	Mandatory	string	ID of a source protection group.
PARENTNAME	Mandatory	string	Name of a source protection group.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RUNNINGSTATUS	Mandatory	string	Running status of the HyperCDP consistency group. **The value is described as follows:** 0: Unknown 43: Activated 44: Rolling back 112: Rollback failure
TIMESTAMP	Mandatory	string	Time when the HyperCDP consistency group is activated.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57673: HyperCDP consistency group object
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Note:** This parameter must be returned when SECURESNAPENABLED is set to true. Constraints: This parameter is for internal use only and is not displayed externally.
ISINPROTECTIONPER-IOD	Conditional	bool	Whether it is in the protection period. **The value is described as follows:** false: not in the protection period; true: in the protection period
LEFTDAYS	Conditional	uint32	Number of remaining days. **Note:**Number of remaining days.
LEFTHOURS	Conditional	uint32	Remaining hours. **Note:**Remaining hours.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Querying information about the HyperCDP consistency group whose ID is specified.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp_consistency_group/0

Response: {
   "data": {
      "ID": "0",
      "ISSCHEDULEDCDPCG": "0",
      "NAME": "aa",
      "PARENTID": "0",
      "PARENTNAME": "pg",
      "PARENTTYPE": 57846,
      "RESTORESPEED": "2",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1567837634",
      "TYPE": 57673,
      "SECURESNAPENABLED": "true",
      "PROTECTPERIOD": "10",
      "PROTECTPERIODUNIT": "48",
      "AUTODELETEENABLED": "false",
      "SECURESNAPCLOCKTIME": "1534990103",
      "ISINPROTECTIONPERIOD": "true",
      "LEFTDAYS": "2",
      "LEFTHOURS": "48",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.4.5 Interface for Querying a HyperCDP Object

Function

This interface is used to query information about the HyperCDP object whose ID is specified.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP/{id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	ID of the HyperCDP object. **The value is described as follows:** The value is an integer from 0 to 1999999.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57671: HyperCDP object
CONSISTENCYGROUP-NAME	Mandatory	string	Name of the HyperCDP consistency group.
ISSCHEDULEDCDP	Mandatory	string	Whether the HyperCDP object is created by a HyperCDP schedule. **The value is described as follows:** 0: no 1: yes
CONSISTENCYGROU-PID	Mandatory	string	ID of the HyperCDP consistency group to which the HyperCDP object belongs.
NAME	Mandatory	string	Name of the HyperCDP object.
ID	Mandatory	string	ID of the HyperCDP object.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string	Running status of the HyperCDP object. **The value is described as follows:** 0: unknown 43: activated 44: rolling back 112: rollback failed
PARENTID	Mandatory	string	Source LUN ID of the HyperCDP object.
RESTOREPROGRESS	Mandatory	string	Rollback progress. **The value is described as follows:** The value ranges from 0 to 100. **Note:**"255" is an invalid value.
RESTOREENDTIME	Mandatory	string	Time when the rollback is complete. **Note:**"-1" is an invalid value.
PARENTNAME	Mandatory	string	Source LUN name of the HyperCDP object.
RESTORESPEED	Mandatory	string	Rollback speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
RESTORESTARTTIME	Mandatory	string	Time when the rollback starts. **Note:**"-1" is an invalid value.
TIMESTAMP	Mandatory	string	Time when the HyperCDP object is activated.

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Parameter	Mandatory/ Conditional	Type	Description
SECURESNAPENABLED	Mandatory	string(bool)	Specifies whether the secure snapshot function is enabled. **The value is described as follows:** false: does not display HDD details. true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIOD	Conditional	string(uint64)	Protection period of a secure snapshot. **The value is described as follows:** The protection period of a secure snapshot ranges from 1 day to 20 years. **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the secure snapshot protection period. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELETEENABLED	Conditional	string(bool)	Indicates whether to support automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.
SECURESNAPCLOCK-TIME	Conditional	string(uint64)	System clock of the secure snapshot. **Note:** This parameter must be returned when SECURESNAPENABLED is set to true. Constraints: This parameter is for internal use only and is not displayed externally.
ISINPROTECTIONPER-IOD	Conditional	bool	Whether it is in the protection period. **The value is described as follows:** false: not in the protection period; true: in the protection period
LEFTDAYS	Conditional	uint32	Number of remaining days. **Note:**Number of remaining days.
LEFTHOURS	Conditional	uint32	Remaining hours. **Note:**Remaining hours.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Querying information about the HyperCDP object whose ID is specified.

```
Request: GET /deviceManager/rest/201406091000000000000/cdp/1

Response: {
   "data": {
      "CONSISTENCYGROUPID": "0",
      "CONSISTENCYGROUPNAME": "LunCG002_CDPCGroup_180823021008",
      "ID": "1",
      "ISSCHEDULEDCDP": "0",
      "NAME": "LUN004000_1808230208230000001",
      "PARENTID": "3",
      "PARENTNAME": "LUN0040000",
      "RESTOREENDTIME": "-1",
      "RESTOREPROGRESS": "255",
      "RESTORESPEED": "2",
      "RESTORESTARTTIME": "-1",
      "RUNNINGSTATUS": "43",
      "TIMESTAMP": "1534990103",
      "TYPE": 57671,
      "SECURESNAPENABLED": "true",
      "PROTECTPERIOD": "10",
      "PROTECTPERIODUNIT": "48",
      "AUTODELETEENABLED": "false",
      "SECURESNAPCLOCKTIME": "1534990103",
      "ISINPROTECTIONPERIOD": "true",
      "LEFTDAYS": "2",
      "LEFTHOURS": "48",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.4.6 Interface for Querying a HyperCDP Schedule

Function

This interface is used to query detailed information about the HyperCDP schedule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	HyperCDP schedule ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
vstoreId	Optional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
SCHEDULETYPE	Mandatory	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57527: HyperCDP schedule
NAME	Mandatory	string	HyperCDP schedule name.
ID	Mandatory	string	HyperCDP schedule ID.
FREQUENCYNUM	Mandatory	string	Number of HyperCDP objects in a fixed period. **Note:**"-1" is an invalid value.
FREQUENCYVALUE	Mandatory	string	Fixed interval period. **Unit:**seconds **Note:**"-1" is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIMEOFWEEK	Mandatory	string	Specific time in a week when HyperCDP objects are created.
WEEKLYDAYS	Mandatory	array	Time in a week when HyperCDP objects are created. **The value is described as follows:** For example: [1,2] indicates that HyperCDP objects are created on Monday and Tuesday. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday
WEEKLYSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created weekly. **Note:**"-1" is an invalid value.
HEALTHSTATUS	Mandatory	enum	Health status of the HyperCDP schedule. **The value is described as follows:** 1: Normal 2: Faulty
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 30: Enabled 31: Disabled 53: Initializing 106: Deleting 111: Stopping

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Parameter	Mandatory/ Conditional	Type	Description
LASTEXECUTIONRE-SULT	Mandatory	enum	Last execution result. **The value is described as follows:** 1: success 2: failure **Note:**"0" is an invalid value.
DESCRIPTION	Mandatory	string	Description.
ENABLESCHEDULE	Mandatory	bool	Whether the HyperCDP schedule is enabled. **The value is described as follows:** false: stopped true: started
LASTEXECUTIONTIME	Mandatory	uint64	Last execution time. **Note:**"-1" is an invalid value.
DAYHOURS	Mandatory	string	Time in a day when HyperCDP objects are created.
DAYMINUTE	Mandatory	int32	Specific time (accurate to minutes) in a day when HyperCDP objects are created.
DAILYSNAPSHOTNUM	Mandatory	int32	Number of HyperCDP objects created daily. **Note:**"-1" is an invalid value.
MONTHDAYS	Mandatory	string	Day in a month when HyperCDP objects are created.
STARTTIMEOFMONTH	Mandatory	string	Specific time in a month when HyperCDP objects are created.
MONTHSNAPSHOTNUM	Mandatory	string	Number of HyperCDP objects created monthly. **Note:**"-1" is an invalid value.

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Parameter	Mandatory/ Conditional	Type	Description
lunNum	Mandatory	uint32	Number of LUNs added to the HyperCDP schedule. **The value is described as follows:** 0..65536
protectionGroupNum	Mandatory	uint32	Number of protection groups added to the HyperCDP schedule. **The value is described as follows:** 0..8192
OBJECTTYPE	Mandatory	enum	Type of an object added to the HyperCDP schedule. **The value is described as follows:** 0: block 1: file
fsNum	Mandatory	string(uint32)	Number of file systems added to the HyperCDP schedule.
vstoreId	Mandatory	string(uint32)	vStore ID.
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters consisting of letters, digits, underscores (_), periods (.), and hyphens (-).
scope	Mandatory	enum	Scope of the HyperCDP schedule.
isBuildinSchedule	Mandatory	bool	Whether the schedule is a default schedule.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYTAG	Mandatory	string	Fixed-period policy tag of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
DAYTAG	Mandatory	string	Tag of the daily policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
WEEKLYTAG	Mandatory	string	Indicates the tag of the weekly policy of a HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHTAG	Mandatory	string	Tag of the monthly policy for the HyperCDP schedule. **The value is described as follows:** 1: The tag is an empty character string. 2: The tag name can contain 1 to 32 ASCII characters, including digits, letters, hyphens (-), underscores (_), and periods (.), and must start with a digit or letter.
SECURESNAPENABLED	Mandatory	string(bool)	Whether the secure snapshot schedule function is enabled. **The value is described as follows:** false: no true: yes
AUTODELETEENABLED	Conditional	string(bool)	Specifies whether the secure snapshot schedule supports automatic deletion. **The value is described as follows:** false: no true: yes **Note:**This parameter must be returned when SECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
PROTECTPERIOD	Conditional	string(uint64)	Protection period of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. **Note:**This field is mandatory for LUN schedules when SECURESNAPENABLED is set to true.
PROTECTPERIODUNIT	Conditional	string(enum)	Unit of the protection period of the secure snapshot schedule. **The value is described as follows:** The options are 46 (day), 47 (month), and 48 (year). **Note:**This field is mandatory for LUN schedules when SECURESNAPENABLED is set to true.
FREQUENCYSECURES-NAPENABLED	Conditional	string(bool)	Whether the secure snapshot function is enabled for the fixed-period policy of the file system schedule. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYAUTODE-LETEENABLED	Conditional	string(bool)	Whether to enable automatic deletion of secure snapshots based on the fixed-periodic policy of the file system schedule. **The value is described as follows:** false: no true: yes **Note:**1. This field is mandatory for file system schedules when FREQUENCYSECURES-NAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYPROTECT-PERIOD	Conditional	uint64	Protection period of the fixed-period policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When FREQUENCYPERIODU-NIT is set to day, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 7300. 2:When FREQUENCYPERIODU-NIT is set to month, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 240. 3:When FREQUENCYPERIODU-NIT is set to year, the value of FREQUENCYPROTEC-TIONPERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when FREQUENCYSECURES-NAPENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
FREQUENCYPERIODUNIT	Conditional	enum	Unit of the protection period of the fixed-period policy in the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when FREQUENCYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
DAYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the daily file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
DAYAUTODELETEENA-BLED	Conditional	string(bool)	Switch for automatically deleting secure snapshots of the file system schedule based on the daily policy. **The value is described as follows:** false: no true: yes **Note:**1. This field is mandatory for file system schedules when DAYSECURESNAPENA-BLED is set to true.

Parameter	Mandatory/ Conditional	Type	Description
DAYPROTECTIONPER-IOD	Conditional	uint64	Protection period of the daily periodic policy of the secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1: When DAYPERIODUNIT is set to day, the value of DAYPROTECTIONPER-IOD ranges from 1 to 7300. 2: When DAYPERIODUNIT is set to month, the value of DAYPROTECTIONPER-IOD ranges from 1 to 240. 3: When DAYPERIODUNIT is set to year, the value of DAYPROTECTIONPER-IOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when DAYSECURESNAPENA-BLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
DAYPERIODUNIT	Conditional	enum	Unit of the protection period in the daily policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when DAYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
WEEKLYSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the weekly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule based on the weekly policy. **The value is described as follows:** false: no true: yes **Note:**1. This field is mandatory for file system schedules when WEEKLYSECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYPROTECTION-PERIOD	Conditional	uint64	Protection period of the weekly secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When WEEKLYPERIODUNIT is set to day, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 7300. 2:When WEEKLYPERIODUNIT is set to month, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 240. 3:When WEEKLYPERIODUNIT is set to year, the value of WEEKLYPROTECTION-PERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when WEEKLYSECURESNA-PENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
WEEKLYPERIODUNIT	Conditional	enum	Unit of the protection period in the weekly policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when WEEKLYSECURESNAPENABLED is set to true. 2. The value -1 is invalid.
MONTHSECURESNAPENABLED	Conditional	string(bool)	Whether the secure snapshot function of the monthly file system schedule is enabled. **The value is described as follows:** false: no true: yes **Note:**This field must be returned for the file system schedule.

Parameter	Mandatory/ Conditional	Type	Description
MONTHAUTODELETEENABLED	Conditional	string(bool)	Whether to enable the function of automatically deleting secure snapshots of the file system schedule by month. **The value is described as follows:** false: no true: yes **Note:**1. This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHPROTECTION-PERIOD	Conditional	uint64	Protection period of the monthly periodic secure snapshot schedule. **The value is described as follows:** The protection period of a secure snapshot schedule ranges from one day to 20 years. 1:When MONTHPERIODUNIT is set to day, the value of MONTHPROTECTION-PERIOD ranges from 1 to 7300. 2:When MONTHPERIODUNIT is set to month, the value of MONTHPROTECTION-PERIOD ranges from 1 to 240. 3:When MONTHPERIODUNIT is set to year, the value of MONTHPROTECTION-PERIOD ranges from 1 to 20. **Note:** 1. This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true. 2. The value -1 is invalid.

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Parameter	Mandatory/ Conditional	Type	Description
MONTHPERIODUNIT	Conditional	enum	Unit of the protection period in the monthly periodic policy of the secure snapshot schedule. **The value is described as follows:** 46: day; 47: month; 48: year **Note:** 1. This field is mandatory for file system schedules when MONTHSECURESNAPENABLED is set to true. 2. The value -1 is invalid.

Usage Guidelines

Before performing the operation, confirm that the schedule ID is correct and exits.

Example

- Querying detailed information about the HyperCDP schedule.

```
Request: GET /deviceManager/rest/202406091000000000000/snapshot_schedule/1

Response: {
   "data": {
      "DAILYSNAPSHOTNUM": "-1",
      "DAYHOURS": "[]",
      "DAYMINUTE": "-1",
      "DESCRIPTION": "",
      "FREQUENCYNUM": "0",
      "FREQUENCYVALUE": "10",
      "ID": "1",
      "lunNum": "0",
      "protectionGroupNum": "0",
      "MONTHDAYS": "[]",
      "MONTHSNAPSHOTNUM": "-1",
      "NAME": "gdg",
      "SCHEDULETYPE": "1",
      "STARTTIMEOFMONTH": "",
      "STARTTIMEOFWEEK": "",
      "WEEKLYDAYS": "[]",
      "WEEKLYSNAPSHOTNUM": "-1",
      "AUTODELETEENABLED": "false",
      "DAYTAG": "",
      "ENABLESCHEDULE": false,
      "FREQUENCYTAG": "",
      "HEALTHSTATUS": "1",
      "LASTEXECUTIONRESULT": "0",
      "LASTEXECUTIONTIME": "-1",
```

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```
        "MONTHTAG": "",
        "OBJECTTYPE": "0",
        "PROTECTPERIOD": "1",
        "PROTECTPERIODUNIT": "46",
        "RUNNINGSTATUS": "31",
        "SECURESNAPENABLED": "true",
        "WEEKLYTAG": "",
        "isBuildinSchedule": "false",
        "scope": "0",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "fsNum": "0",
        "TYPE": 57527
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying detailed information about the HyperCDP schedule.


```
Request: GET /deviceManager/rest/201406091000000000000/snapshot_schedule/1

Response: {
    "data": {
        "DAILYSNAPSHOTNUM": "-1",
        "DAYHOURS": "[2]",
        "DAYMINUTE": "0",
        "DESCRIPTION": "",
        "FREQUENCYNUM": "-1",
        "FREQUENCYVALUE": "-1",
        "ID": "1",
        "lunNum": "0",
        "protectionGroupNum": "0",
        "MONTHDAYS": "[]",
        "MONTHSNAPSHOTNUM": "-1",
        "NAME": "sche1",
        "SCHEDULETYPE": "1",
        "STARTTIMEOFMONTH": "",
        "STARTTIMEOFWEEK": "",
        "WEEKLYDAYS": "[]",
        "WEEKLYSNAPSHOTNUM": "-1",
        "DAYAUTODELETEENABLED": true,
        "DAYPERIODUNIT": "46",
        "DAYPROTECTIONPERIOD": "1",
        "DAYSECURESNAPENABLED": true,
        "DAYTAG": "1111",
        "ENABLESCHEDULE": false,
        "FREQUENCYSECURESNAPENABLED": false,
        "FREQUENCYTAG": "",
        "HEALTHSTATUS": "1",
        "LASTEXECUTIONRESULT": "0",
        "LASTEXECUTIONTIME": "-1",
        "MONTHSECURESNAPENABLED": false,
        "MONTHTAG": "",
        "OBJECTTYPE": "1",
        "RUNNINGSTATUS": "31",
        "SECURESNAPENABLED": "false",
        "WEEKLYSECURESNAPENABLED": false,
        "WEEKLYTAG": "",
        "isBuildinSchedule": "false",
        "scope": "1",
        "vstoreId": "1",
        "vstoreName": "v1",
        "fsNum": "0",
        "TYPE": 57527
    },
    "error": {
        "code": 0,
        "description": "0"
```

```
    }
}
```

2.9.13.4.7 Interface for Querying the Number of HyperCDP Consistency Groups

Function

This interface is used to query the number of HyperCDP consistency groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cdp_consistency_group/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, and PARENTID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of HyperCDP consistency groups queried according to the filter criteria.

Example

- Query the number of HyperCDP consistency groups.

```
Request: GET /deviceManager/rest/ST000000000000000099/cdp_consistency_group/count

Response:
{
   "data": {
```

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```
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying the number of HyperCDP consistency groups whose names contain "cdpcg".

```
Request: GET /deviceManager/rest/ST000000000000000099/cdp_consistency_group/count?
filter=NAME:cdpcg

Response:
{
    "data": {
        "COUNT": "4"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.4.8 Interface for Querying the Number of HyperCDP Objects

Function

This interface is used to query the number of HyperCDP objects.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cdp/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, and PARENTID.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of HyperCDP objects queried according to the filter criteria.

Example

- Query the number of HyperCDP objects.

```
Request: GET /deviceManager/rest/ST000000000000000099/cdp/count

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying the number of HyperCDP objects by using the source LUN ID.

```
Request: GET /deviceManager/rest/ST000000000000000099/cdp/count?filter=PARENTID::3

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.4.9 Interface for Querying the Number of HyperCDP Schedules

Function

This interface is used to query the number of HyperCDP schedules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/snapshot_schedule/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Filter criteria. **The value is described as follows:** The following filter fields are supported for a query: ID, NAME, RUNNINGSTATUS, HEALTHSTATUS, ENABLESCHEDULE, and SCHEDULETYPE.
vstoreId	Optional	uint32	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of HyperCDP schedules queried according to the filter criteria.

Example

- Querying the number of HyperCDP schedules.

```
Request: GET /deviceManager/rest/1016964156/snapshot_schedule/count

Response:
{
    "data": {
        "COUNT": "5"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying the number of HyperCDP schedules that have been started.

```
Request: GET /deviceManager/rest/1016964156/snapshot_schedule/count?filter=ENABLESCHEDULE::1

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
  }
}
```

2.9.13.5 Others

2.9.13.5.1 Interface for Canceling the Restoration of a HyperCDP Consistency Group

Function

Cancel the rollback of a HyperCDP consistency group.

HighRisk

You are about to stop restoring data of HyperCDP objects in HyperCDP consistency group ({0}) to LUNs in protection group ({1}). The HyperCDP consistency group is activated at ({2}). This operation will cause data on LUNs in the protection group to be unavailable.

Suggestion: Before performing this operation, ensure that data on LUNs in the protection group is not required.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP/cancelrollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	ID of a HyperCDP consistency group. **The value is described as follows:** The value is an integer from 0 to 99999.
vstoreId	Optional	string	vStore ID.

Result

N/A

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Example

- Cancel the rollback of a HyperCDP consistency group.

```
Request: PUT /deviceManager/rest/201406091000000000000/cdp_consistency_group/cancelrollback
{
    "ID": "0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.5.2 Interface for Canceling the Restoration of a HyperCDP Object

Function

This interface is used to cancel the restoration of a HyperCDP object.

HighRisk

You are about to stop restoring data of HyperCDP object ({0}) to the source LUN ({1}). The HyperCDP object is activated at {2}.

This operation will cause data on the source LUN to be unavailable.

Suggestion: Before performing this operation, ensure that the source LUN data is not required.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP/cancelrollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	ID of a HyperCDP object. **The value is described as follows:** The value is an integer from 0 to 1999999.
vstoreId	Optional	string	vStore ID.

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Result

N/A

Example

- Canceling the restoration of a HyperCDP object.

```
Request: PUT /deviceManager/rest/20140609100000000000/cdp/cancelrollback
{
   "ID": "153"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.5.3 Interface for Enabling or Disabling a HyperCDP Schedule

Function

This interface is used to enable or disable a HyperCDP schedule.

HighRisk

You are about to stop HyperCDP schedule ({0}).

After this operation, HyperCDP objects will no longer be created based on the schedule.

Suggestion: Before performing this operation, ensure that you do not need to create HyperCDP objects anymore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SNAPSHOT_SCHEDULE/enable_snapshot_schedule

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULETYPE	Optional	enum	Schedule type. **The value is described as follows:** 0: timing snapshot schedule (deprecated) 1: HyperCDP schedule
ENABLESCHEDULE	Mandatory	enum	Switch of the HyperCDP schedule. **The value is described as follows:** true: enables the HyperCDP schedule. false: disables the HyperCDP schedule.
ID	Mandatory	string	ID of the HyperCDP schedule.
vstoreId	Optional	uint32	vStore ID.

Result

N/A

Usage Guidelines

Before performing the operation, confirm that the schedule ID is correct and exits.

Example

- Enabling the HyperCDP schedule.

```
Request: PUT/deviceManager/rest/2014060910000000000/snapshot_schedule/
enable_snapshot_schedule?SCHEDULETYPE=1
{
   "ID": "3",
   "ENABLESCHEDULE": true
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Disabling the HyperCDP schedule.

```
Request: PUT/deviceManager/rest/2014060910000000000/snapshot_schedule/
enable_snapshot_schedule?SCHEDULETYPE=1
```

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```
{
    "ID": "3",
    "ENABLESCHEDULE": false
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.13.5.4 Interface for Restoring a HyperCDP Consistency Group

Function

Roll back the HyperCDP consistency group.

HighRisk

You are about to restore the HyperCDP consistency group. This operation will use data of HyperCDP objects in HyperCDP consistency group ({0}) to overwrite data on LUNs in protection group ({1}). The HyperCDP consistency group is activated at ({2}). This operation may cause heavy service pressure and decrease the read/write performance of the host. Before performing this operation, ensure that LUNs in the protection group are not read or written by the host, no data is stored in the host cache, and HyperCDP objects in the HyperCDP consistency group are not written by the host.

Suggestions:

1. Before performing this operation, back up the protection group data.

2. Ensure that the free capacity of the storage pool is greater than the actual capacity of LUNs in the protection group.

3. Select the medium speed. If you select the high or highest speed, perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CDP_CONSISTENCY_GROUP/rollback

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	ID of the HyperCDP consistency group.
RESTORESPEED	Optional	enum	Rollback speed. **The value is described as follows:** The value can be: 1:Low 2:Middle 3:High 4:Highest
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

1:This operation will use the HyperCDP consistency group data to overwrite the source protection group data.

2:Before performing this operation, back up the source protection group data and confirm that the selected HyperCDP consistency group is correct.

Example

- Roll back the HyperCDP consistency group.

```
Request: PUT /deviceManager/rest/201406091000000000000/cdp_consistency_group/rollback
{
   "ID": "0",
   "RESTORESPEED": "3"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.13.5.5 Interface for Restoring a HyperCDP Object

Function

Roll back a HyperCDP object.

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HighRisk

You are about to restore the HyperCDP object. This operation will overwrite the data of the source LUN ({1}) with data of the HyperCDP object ({0}). The HyperCDP object is activated at ({2}). Before performing this operation, ensure that the source LUN is not read or written by the host, no data is stored in the host cache, and the source object is not written by the host.

Suggestions:

1. Before performing this operation, back up the data of the target object.

2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the target object.

3. Select the medium speed. If you select the high or highest speed, perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cdp/rollback

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int32	HyperCDP object ID.
RESTORESPEED	Optional	enum	Rollback speed. **The value is described as follows:** The value can be: 1:Low 2:Medium 3:High 4:Highest
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

1:This operation will use the HyperCDP object data to overwrite the source LUN data.

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2:Before performing this operation, back up the source LUN data and confirm that the selected HyperCDP object is correct.

Example

- Roll back a HyperCDP object.

```
Request: PUT /deviceManager/rest/201406091000000000000/cdp/rollback
{
   "ID": "153",
   "RESTORESPEED": "4"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14 hyper_copy

2.9.14.1 Add

2.9.14.1.1 (Not Recommended) Interface for Adding a HyperCopy Pair To a HyperCopy Consistency Group

Function

This interface is used to add a HyperCopy pair to a HyperCopy consistency group (you are advised to use Interface for Adding a Clone Pair to a Clone Consistency Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/create_associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the HyperCopy pair managed object. **The value is described as follows:** 57702:HyperCopy Pair
ASSOCIATEOBJID	Mandatory	string	ID of the HyperCopy pair to be added.
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

Result

N/A

Example

- Add a HyperCopy pair to a HyperCopy consistency group.

```
Request: POST/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup/
create_associate
{
   "ASSOCIATEOBJID": "19",
   "ASSOCIATEOBJTYPE": "57702",
   "ID": "4",
   "cgType": "1"
}
Response:
{
   "data": {
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.1.2 (Not Recommended) Interface for Creating a HyperCopy Consistency Group

Function

This interface is used to create a HyperCopy consistency group (you are advised to use Interface for Creating a Clone Consistency Group instead of this interface).

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HighRisk

You are about to select the high or highest copy speed to create HyperCopy consistency group ({0}). After the operation, HyperCopy pairs in the HyperCopy consistency group will be synchronized or restored at the high or highest speed, which may cause heavy service pressure and decrease the read/write performance of the host.

Suggestion: Perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	HyperCopy consistency group description. **Length:**0~255
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

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Parameter	Mandatory/Optional/Conditional	Type	Description
copyRate	Optional	enum	Copy speed. **The value is described as follows:** 1:low 2:medium 3:high 4:highest **Default:**2: medium

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57703: HyperCopy consistency group
ID	Mandatory	string	HyperCopy consistency group ID.
NAME	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
DESCRIPTION	Mandatory	string	HyperCopy consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1: HyperCopy consistency group
copyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1: low 2: middle 3: high 4: highest
syncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync paused 4: FullCopy restoring 5: DiffCopy restoring 6: FullCopy restoration paused 7: DiffCopy restoration paused 8: Initializing 9: Deleting
copyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0: normal 1: faulty
lastSyncStartTime	Mandatory	uint64	Synchronization start time.
lastSyncEndTime	Mandatory	uint64	Synchronization end time.
restoreStartTime	Mandatory	uint64	Start time of reverse synchronization.

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Parameter	Mandatory/ Conditional	Type	Description
restoreEndTime	Mandatory	uint64	End time of reverse synchronization.

Example

- Creating a HyperCopy consistency group.

```
Request: POST/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup
{
   "DESCRIPTION": "",
   "NAME": "b",
   "cgType": "1",
   "copyRate": "2"
}
Response:
 {
   "data": {
      "DESCRIPTION": "",
      "ID": "61",
      "NAME": "b",
      "TYPE": 57703,
      "cgType": "1",
      "copyRate": "2",
      "copyStatus": "0",
      "lastSyncEndTime": "-1",
      "lastSyncStartTime": "-1",
      "restoreEndTime": "-1",
      "restoreStartTime": "-1",
      "syncStatus": "8"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.2 Delete

2.9.14.2.1 (Not Recommended) Interface for Deleting a HyperCopy Consistency Group

Function

This interface is used to delete a HyperCopy consistency group (you are advised to use Interface for Deleting a Clone Consistency Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

Result

N/A

Example

- Delete a HyperCopy consistency group.

```
Request: DELETE/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup
{
   "ID": "3",
   "cgType": "1"
}
Response:
 {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.2.2 (Not Recommended) Interface for Deleting a HyperCopy Pair

Function

This interface is used to delete a HyperCopy pair (you are advised to use Interface for Deleting a Clone Pair instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/delete

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyID	Mandatory	string	HyperCopy pair ID.

Result

N/A

Example

- Delete a HyperCopy pair.

```
Request: DELETE/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/delete?
hyperCopyID=429
Response:
{
   "data": [

   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.2.3 (Not Recommended) Interface for Removing a HyperCopy Pair From a HyperCopy Consistency Group

Function

This interface is used to remove a HyperCopy Pair from a HyperCopy consistency group (you are advised to use Interface for Removing a Clone Pair from a Clone Consistency Group instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/remove_associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the HyperCopy pair managed object. **The value is described as follows:** 57702:HyperCopy Pair
ASSOCIATEOBJID	Mandatory	string	ID of the HyperCopy pair to be removed.
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

Result

N/A

Example

- Remove a HyperCopy pair from a HyperCopy consistency group.

```
Request: DELETE/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup/
remove_associate
{
   "ASSOCIATEOBJID": "388",
   "ASSOCIATEOBJTYPE": "57702",
   "ID": "4",
   "cgType": "1"
}
Response:
{
   "data": {
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.3 Modify

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2.9.14.3.1 (Not Recommended) Interface for Modifying a HyperCopy Consistency Group

Function

This interface is used to modify HyperCopy consistency group settings (you are advised to use Interface for Modifying a Clone Consistency Group instead of this interface).

HighRisk

You are about to change the copy rate of HyperCopy consistency group ({0}) to the high or highest speed. This operation may cause heavy service pressure and decrease the read/write performance of the host.

Suggestion: Perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.
NAME	Optional	string	HyperCopy consistency group name. **The value is described as follows:** Contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
DESCRIPTION	Optional	string	HyperCopy consistency group description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group
copyRate	Optional	enum	Copy speed. **The value is described as follows:** 1:low 2:medium 3:high 4:highest

Result

N/A

Example

- Modifying a HyperCopy consistency group.

```
Request: PUT/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup
{
   "ID": "61",
   "cgType": "1",
   "copyRate": "1"
}
Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.3.2 (Not Recommended) Interface for Modifying a HyperCopy Pair

Function

This interface is used to modify HyperCopy pair settings (you are advised to use Interface for Modifying a Clone Pair instead of this interface).

HighRisk

You are about to change the copy rate of HyperCopy pair ({0}) to the high or highest speed. This operation may cause heavy service pressure and decrease the read/write performance of the host.

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Suggestion: Perform this operation during off-peak hours.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/modify

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyID	Mandatory	string	HyperCopy pair ID.
hyperCopyName	Conditional	string	HyperCopy pair name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**At least one parameter among hyperCopyName, hyperCopyRate, and hyperCopyDescription must be delivered.
hyperCopyRate	Conditional	enum	Copy rate. **The value is described as follows:** 1:Low 2:Middle 3:High 4:Highest **Note:**At least one parameter among hyperCopyName, hyperCopyRate, and hyperCopyDescription must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyDescription	Conditional	string	HyperCopy pair description. **Length:**0~255 **Note:**At least one parameter among hyperCopyName, hyperCopyRate, and hyperCopyDescription must be delivered.

Result

N/A

Example

- Changing the name of the HyperCopy pair to "aaa".

```
Request: PUT/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/modify
{
   "hyperCopyID": "429",
   "hyperCopyName": "aaa"
}
Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.4 Query

2.9.14.4.1 (Not Recommended) Interface for Batch Querying HyperCopy Consistency Groups

Function

This interface is used to batch query basic information about HyperCopy consistency groups (you are advised to use Interface for Batch Querying Clone Consistency Groups instead of this interface).

URL

https://${ip}:${port/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup?cgType=1&range=[0-100]

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, copyStatus, syncStatus, and lastSyncStartTime are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57703:HyperCopy consistency group
ID	Mandatory	string	HyperCopy consistency group ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
DESCRIPTION	Mandatory	string	HyperCopy consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group
copyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1:low 2:middle 3:high 4:highest

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Parameter	Mandatory/ Conditional	Type	Description
syncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0:Unsynchronized 1:Synchronizing 2:Normal 3:Sync paused 4:FullCopy restoring 5:DiffCopy restoring 6:FullCopy restoration paused 7:DiffCopy restoration paused 8:Initializing 9:Deleting
copyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0:normal 1:faulty
lastSyncStartTime	Mandatory	uint64	Synchronization start time.
lastSyncEndTime	Mandatory	uint64	Synchronization end time.
restoreStartTime	Mandatory	uint64	Start time of reverse synchronization.
restoreEndTime	Mandatory	uint64	End time of reverse synchronization.

Example

- Batch querying HyperCopy consistency group information.

```
Request: GET/deviceManager/rest/2102350BSB10F1000009/HyperCopy_ConsistentGroup?
cgType=1&range=[0-100]
Response:
{
   "data":
      {
         "DESCRIPTION": "",
         "ID": "18",
         "NAME": "HyperCopy_ConsistentGroup019",
         "TYPE": 57703,
         "cgType": "1",
         "copyRate": "2",
```

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```
            "copyStatus": "0",
            "lastSyncEndTime": "-1",
            "lastSyncStartTime": "-1",
            "restoreEndTime": "-1",
            "restoreStartTime": "-1",
            "syncStatus": "0"
        }
    ,
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.14.4.2 (Not Recommended) Interface for Batch Querying HyperCopy Pairs

Function

This interface is used to query information about all HyperCopy pairs (you are advised to use Interface for Batch Querying Clone Pairs instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
isHyperCopy	Mandatory	bool	Is HyperCopy or not. **The value is described as follows:** 1: true
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters hyperCopyID, hyperCopyName, hyperCopySource-Name, hyperCopyStatus, hyperCopySyncStatus, and hyperCopySyncStart-Time are supported. Parameter hyperCopySource-Name can only be delivered separately, or the return value may not be correct.
RSSType	Optional	enum	Type of LUNs or HyperCopys that support value-added features. **The value is described as follows:** 40: HyperCopy pairs that can function as the member of HyperCopy consistency group
RSSAssociateObjID	Conditional	string	Associated value-added object ID. **Note:**This field can be delivered with the member source object IDs of HyperCopy consistency group to be added to when the RSSType field is 40. If there's no member in the HyperCopy consistency group, this field cannot be delivered.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57702: HYPER_COPY
hyperCopyID	Mandatory	string	HyperCopy pair ID.
hyperCopyName	Mandatory	string	HyperCopy pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopySourceID	Mandatory	string	Source object ID of a HyperCopy pair.
hyperCopySourceType	Mandatory	enum	Source object type of a HyperCopy pair. **The value is described as follows:** 1: LUN 2: snapshot
hyperCopySource-Name	Mandatory	string	Source object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyTargetID	Mandatory	string	Target object ID of a HyperCopy pair.

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyDstName	Mandatory	string	Target object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyDescription	Mandatory	string	HyperCopy pair description. **The value is described as follows:** The value contains 0 to 255 characters.
hyperCopySyncStart-Time	Mandatory	uint64	Synchronization start time.
hyperCopySyncEnd-Time	Mandatory	uint64	Synchronization end time.
hyperCopyRestoreS-tartTime	Mandatory	uint64	Start time of reverse synchronization.
hyperCopyRestoreEnd-Time	Mandatory	uint64	End time of reverse synchronization.
hyperCopyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0: normal 1: faulty

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopySyncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync paused 4: FullCopy restoring 5: DiffCopy restoring 6: FullCopy restoration paused 7: DiffCopy restoration paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	uint64	Estimated copy end time.
hyperCopyCgName	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyConsisten-cyGroupID	Mandatory	uint32	HyperCopy consistency group ID.
hyperCopyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest
hyperCopyProcess	Mandatory	uint32	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

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Parameter	Mandatory/ Conditional	Type	Description
SUBTYPE	Mandatory	enum	Subtype. **The value is described as follows:** 0: common HyperCopy pair.

Example

- Querying information about HyperCopy pairs in batches.

```
Request: GET/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair?
isHyperCopy=true&&range=[0-100]
Response:
{
   "data": {
      {
         "SUBTYPE": "0",
         "TYPE": 57702,
         "copyEndTime": "-1",
         "hyperCopyCgName": "--",
         "hyperCopyConsistencyGroupID": "-1",
         "hyperCopyDescription": "",
         "hyperCopyDstName": "lun16000",
         "hyperCopyID": "16000",
         "hyperCopyName": "hypercopy16000",
         "hyperCopyProcess": "-1",
         "hyperCopyRate": "2",
         "hyperCopyRestoreEndTime": "-1",
         "hyperCopyRestoreStartTime": "-1",
         "hyperCopySourceID": "8000",
         "hyperCopySourceName": "lun8000",
         "hyperCopySourceType": "1",
         "hyperCopyStatus": "0",
         "hyperCopySyncEndTime": "-1",
         "hyperCopySyncStartTime": "-1",
         "hyperCopySyncStatus": "0",
         "hyperCopyTargetID": "16000"
      }
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying information about HyperCopy pairs in batches which can be added to the HyperCopy consistency group. The HyperCopy consistency group contains two members already. The source object IDs of the members are 3108 and 3109.

```
Request: GET/deviceManager/rest/2102350BSA10F1000003/HyperCopyPair?
isHyperCopy=true&RSSType=40&RSSAssociateObjID=[3108,3109]&range=[0-100]
Response:
{
   "data": [
      {
         "SUBTYPE": "0",
         "TYPE": 57702,
         "copyEndTime": "-1",
         "hyperCopyCgName": "--",
         "hyperCopyConsistencyGroupID": "-1",
```

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```
            "hyperCopyDescription": "",
            "hyperCopyDstName": "LUN31100003",
            "hyperCopyID": "3112",
            "hyperCopyName": "HyperCopyPair3112",
            "hyperCopyProcess": "-1",
            "hyperCopyRate": "2",
            "hyperCopyRestoreEndTime": "-1",
            "hyperCopyRestoreStartTime": "-1",
            "hyperCopySourceID": "3111",
            "hyperCopySourceName": "LUN31100002",
            "hyperCopySourceType": "1",
            "hyperCopyStatus": "0",
            "hyperCopySyncEndTime": "-1",
            "hyperCopySyncStartTime": "-1",
            "hyperCopySyncStatus": "0",
            "hyperCopyTargetID": "3112"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.14.4.3 (Not Recommended) Interface for Implementing Associated Query of HyperCopy Pair Information

Function

This interface is used to associated query basic information about HyperCopy pairs (you are advised to use Interface for Implementing Associated Query of Clone Pair Information instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
TYPE	Conditional	enum	Type number of the managed object. **The value is described as follows:** 57702:HYPER_COPY **Note:**This field can be delivered when the ASSOCIATEOBJTYPE field is 57703.

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	Associate object type. **The value is described as follows:** 11:LUN 27:snapshot 57703:HyperCopy consistency group
ASSOCIATEOBJID	Mandatory	string	Associate object ID.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters hyperCopyID, hyperCopyName, hyperCopyStatus, and hyperCopySyncStatus are supported.
range	Optional	string	Search scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.
isHyperCopy	Mandatory	bool	Is HyperCopy or not. **The value is described as follows:** 1:true

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57702:HYPER_COPY

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyID	Mandatory	string	HyperCopy pair ID.
hyperCopyName	Mandatory	string	HyperCopy pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopySourceID	Mandatory	string	ID of a HyperCopy source object.
hyperCopySourceType	Mandatory	enum	Source object type of a HyperCopy pair. **The value is described as follows:** 1:LUN 2:snapshot
hyperCopySource-Name	Mandatory	string	Source object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyTargetID	Mandatory	string	ID of a HyperCopy target object.
hyperCopyDstName	Mandatory	string	Target object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyDescription	Mandatory	string	HyperCopy pair description. **The value is described as follows:** The value contains 0 to 255 ASCII characters.
hyperCopySyncStart-Time	Mandatory	uint64	Synchronization start time.
hyperCopySyncEnd-Time	Mandatory	uint64	Synchronization end time.
hyperCopyRestoreS-tartTime	Mandatory	uint64	Start time of reverse synchronization.
hyperCopyRestoreEnd-Time	Mandatory	uint64	End time of reverse synchronization.
hyperCopyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0:normal 1:faulty
hyperCopySyncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0:Unsynchronized 1:Synchronizing 2:Normal 3:Sync paused 4:FullCopy restoring 5:DiffCopy restoring 6:FullCopy restoration paused 7:DiffCopy restoration paused 8:Initializing 9:Deleting
copyEndTime	Mandatory	uint64	Estimated copy end time.

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyCgName	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyConsisten-cyGroupID	Mandatory	uint32	HyperCopy consistency group ID.
hyperCopyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1:Low 2:Middle 3:High 4:Highest
hyperCopyProcess	Mandatory	uint32	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.
SUBTYPE	Mandatory	string	Subtype. **The value is described as follows:** 0:common HyperCopy pair.

Example

- Query information about members associated with LUN "0".

```
Request: GET/deviceManager/rest/210235843710E7000007/HyperCopyPair/associate?
isHyperCopy=true&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=0&range=[0-100]
Response:
{
   "data": [
      {
         "SUBTYPE": "0",
         "TYPE": "57702",
         "copyEndTime": "-1",
         "hyperCopyCgName": "HyperCopy_ConsistentGroup025",
         "hyperCopyConsistencyGroupID": "24",
         "hyperCopyDescription": "",
         "hyperCopyDstName": "lun0001",
         "hyperCopyID": "429",
         "hyperCopyName": "aaa",
```

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```
            "hyperCopyProcess": "-1",
            "hyperCopyRate": "2",
            "hyperCopyRestoreEndTime": "-1",
            "hyperCopyRestoreStartTime": "-1",
            "hyperCopySourceID": "428",
            "hyperCopySourceName": "lun0000",
            "hyperCopySourceType": "1",
            "hyperCopyStatus": "0",
            "hyperCopySyncEndTime": "1534879239",
            "hyperCopySyncStartTime": "1534879239",
            "hyperCopySyncStatus": "2",
            "hyperCopyTargetID": "429"
        },
        "error": {
            "code": 0,
            "description": "0"
        }
    }
```


- Query information about members in HyperCopy consistency group "1".


```
Request: GET/deviceManager/rest/210235843710E7000007/HyperCopyPair/associate?
TYPE=57702&ASSOCIATEOBJTYPE=57703&isHyperCopy=true&ASSOCIATEOBJID=23&range=[0-100]
Response:
{
    "data": [
        {
            "SUBTYPE": "0",
            "TYPE": 57702,
            "copyEndTime": "-1",
            "hyperCopyCgName": "HyperCopy_ConsistentGroup023",
            "hyperCopyConsistencyGroupID": "23",
            "hyperCopyDescription": "",
            "hyperCopyDstName": "LUN45090002",
            "hyperCopyID": "4510",
            "hyperCopyName": "HyperCopyPair4510",
            "hyperCopyProcess": "-1",
            "hyperCopyRate": "2",
            "hyperCopyRestoreEndTime": "-1",
            "hyperCopyRestoreStartTime": "-1",
            "hyperCopySourceID": "4518",
            "hyperCopySourceName": "LUN45090002_Snap_1809030839364",
            "hyperCopySourceType": "2",
            "hyperCopyStatus": "0",
            "hyperCopySyncEndTime": "1535993272",
            "hyperCopySyncStartTime": "1535993272",
            "hyperCopySyncStatus": "0",
            "hyperCopyTargetID": "4510"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.14.4.4 (Not Recommended) Interface for Querying HyperCopy Consistency Group Information

Function

This interface is used to query basic information about a HyperCopy consistency group (you are advised to use Interface for Querying Clone Consistency Group Information instead of this interface).

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.
cgType	Optional	enum	HyperCopy consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57703:HyperCopy consistency group
ID	Mandatory	string	HyperCopy consistency group ID.
NAME	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	HyperCopy consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group
copyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1:low 2:middle 3:high 4:highest
syncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0:Unsynchronized 1:Synchronizing 2:Normal 3:Sync paused 4:FullCopy restoring 5:DiffCopy restoring 6:FullCopy restoration paused 7:DiffCopy restoration paused 8:Initializing 9:Deleting
copyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0:normal 1:faulty

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Parameter	Mandatory/ Conditional	Type	Description
lastSyncStartTime	Mandatory	uint64	Synchronization start time.
lastSyncEndTime	Mandatory	uint64	Synchronization end time.
restoreStartTime	Mandatory	uint64	Start time of reverse synchronization.
restoreEndTime	Mandatory	uint64	End time of reverse synchronization.

Example

- Querying HyperCopy consistency group information.

```
Request: GET/deviceManager/rest/2102350BSB10F1000009/HyperCopy_ConsistentGroup/18?cgType=1
Response:
{
   "data":
      {
          "DESCRIPTION": "",
          "ID": "18",
          "NAME": "HyperCopy_ConsistentGroup019",
          "TYPE": 57703,
          "cgType": "1",
          "copyRate": "2",
          "copyStatus": "0",
          "lastSyncEndTime": "-1",
          "lastSyncStartTime": "-1",
          "restoreEndTime": "-1",
          "restoreStartTime": "-1",
          "syncStatus": "0"
      }
   ,
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.4.5 (Not Recommended) Interface for Querying HyperCopy Pair Information

Function

This interface is used to query information about a HyperCopy pair whose ID is specified (you are advised to use Interface for Querying Clone Pair Information instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/{id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	HyperCopy pair ID.
isHyperCopy	Mandatory	bool	Is HyperCopy or not. **The value is described as follows:** 1:true

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57702:HYPER_COPY
hyperCopyID	Mandatory	string	HyperCopy pair ID.
hyperCopyName	Mandatory	string	HyperCopy pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopySourceID	Mandatory	string	ID of a HyperCopy source object.
hyperCopySourceType	Mandatory	enum	Source object type of a HyperCopy pair. **The value is described as follows:** 1:LUN 2:snapshot

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopySource-Name	Mandatory	string	Source object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyTargetID	Mandatory	string	ID of a HyperCopy target object.
hyperCopyDstName	Mandatory	string	Target object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyDescription	Mandatory	string	HyperCopy pair description. **The value is described as follows:** The value contains 0 to 255 characters.
hyperCopySyncStart-Time	Mandatory	uint64	Synchronization start time.
hyperCopySyncEnd-Time	Mandatory	uint64	Synchronization end time.
hyperCopyRestoreS-tartTime	Mandatory	uint64	Start time of reverse synchronization.
hyperCopyRestoreEnd-Time	Mandatory	uint64	End time of reverse synchronization.
hyperCopyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0:normal 1:faulty

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopySyncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0:Unsynchronized 1:Synchronizing 2:Normal 3:Sync paused 4:FullCopy restoring 5:DiffCopy restoring 6:FullCopy restoration paused 7:DiffCopy restoration paused 8:Initializing 9:Deleting
copyEndTime	Mandatory	uint64	Estimated copy end time.
hyperCopyCgName	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyConsisten-cyGroupID	Mandatory	uint32	HyperCopy consistency group ID.
hyperCopyRate	Mandatory	enum	Copy speed. **The value is described as follows:** 1:Low 2:Middle 3:High 4:Highest
hyperCopyProcess	Mandatory	uint32	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

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Parameter	Mandatory/ Conditional	Type	Description
SUBTYPE	Mandatory	string	Subtype. **The value is described as follows:** 0:common HyperCopy pair.

Example

- Querying HyperCopy pair information.

```
Request: GET/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/429?isHyperCopy=true
Response:
{
   "data": [
      {
         "SUBTYPE": "0",
         "TYPE": 57702,
         "copyEndTime": "-1",
         "hyperCopyCgName": "HyperCopy_ConsistentGroup025",
         "hyperCopyConsistencyGroupID": "24",
         "hyperCopyDescription": "",
         "hyperCopyDstName": "lun0001",
         "hyperCopyID": "429",
         "hyperCopyName": "aaa",
         "hyperCopyProcess": "-1",
         "hyperCopyRate": "2",
         "hyperCopyRestoreEndTime": "-1",
         "hyperCopyRestoreStartTime": "-1",
         "hyperCopySourceID": "428",
         "hyperCopySourceName": "lun0000",
         "hyperCopySourceType": "1",
         "hyperCopyStatus": "0",
         "hyperCopySyncEndTime": "1534879239",
         "hyperCopySyncStartTime": "1534879239",
         "hyperCopySyncStatus": "2",
         "hyperCopyTargetID": "429"
      },
      "error": {
         "code": 0,
         "description": "0"
      }
   }
```

2.9.14.4.6 (Not Recommended) Interface for Querying the Number of HyperCopy Consistency Groups

Function

This interface is used to query the number of HyperCopy consistency groups (you are advised to use Interface for Querying the Number of Clone Consistency Groups instead of this interface).

URL

https://${ip}:${port/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1:HyperCopy consistency group

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of queried HyperCopy consistency groups.

Example

- Querying the number of HyperCopy consistency groups.

```
Request: GET/deviceManager/rest/2102350BSB10F1000009/HyperCopy_ConsistentGroup/count?
cgType=1
Response:
{
   "data": {
   "COUNT":"40"},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.4.7 (Not Recommended) Interface for Querying the Number of HyperCopy Pairs

Function

This interface is used to query the number of HyperCopy pairs (you are advised to use Interface for Querying the Number of Clone Pairs instead of this interface).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11:LUN 27:snapshot 57703:HyperCopy consistency group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
TYPE	Conditional	enum	Type number of the managed object. **The value is described as follows:** 57702:HYPER_COPY **Note:**This field can be delivered when the ASSOCIATEOBJTYPE field is 57703.
ASSOCIATEOBJID	Conditional	string	Associated object ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
isHyperCopy	Mandatory	bool	Is HyperCopy or not. **The value is described as follows:** 1:true

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Result

Parameter	Mandatory/ Conditional	Type	Description
count	Mandatory	uint32	Number of queried HyperCopy pairs.

Example

- Querying the number of HyperCopy pairs.

```
Request: GET/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/count?isHyperCopy=true
Response:
{
   "data": {
      "COUNT": "40"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying the number of members in HyperCopy consistency group "1".

```
Request: GET/deviceManager/rest/210235843710E7000007/HyperCopyPair/count?
TYPE=57702&ASSOCIATEOBJTYPE=57703&isHyperCopy=true&ASSOCIATEOBJID=1
Response:
{
   "data": {
      "COUNT": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.14.5 Others

2.9.14.5.1 (Not Recommended) Interface for Restoring a HyperCopy Consistency Group

Function

This interface is used to set the parameters related to reverse synchronization of a HyperCopy consistency group (you are advised to use Interface for Reverse Synchronizing a Clone Consistency Group instead of this interface).

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HighRisk

You are about to restore HyperCopy consistency group ({0}). This operation will use data of target objects in HyperCopy pairs to overwrite data of source objects. Before performing this operation, ensure that source objects in HyperCopy pairs are not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain the data of a source object, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the target objects.
You are about to stop restoring data of target objects to source objects in HyperCopy consistency group ({0}). This operation will cause data of source objects in HyperCopy pairs to be unavailable. Suggestion: Before performing this operation, ensure that data of source objects in HyperCopy pairs is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/reverseSynchronize

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0: starts reverse synchronization. 1: pauses reverse synchronization. 2: stops reverse synchronization. 3: continues reverse synchronization.

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Parameter	Mandatory/Optional/Conditional	Type	Description
copyType	Conditional	enum	Copy type. **The value is described as follows:** 0: full copy 1: differential copy **Note:**This field can be delivered only when the hyperCopyAction field is 0.
cgType	Conditional	enum	Consistency group type. **The value is described as follows:** 1:LUN_CG_TYPE_CLONE **Note:**This parameter is delivered only when hyperCopyAction is set to 0.

Result

N/A

Example

- Starting reverse synchronization of a HyperCopy consistency group.

```
Request: PUT /deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup/
reverseSynchronize
{
    "ID": "4",
    "cgType": "1",
    "copyAction": "0",
    "copyType": "0"

}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.14.5.2 (Not Recommended) Interface for Restoring a HyperCopy Pair

Function

This interface is used to start, stop, pause, and resume full or differential reverse synchronization of a HyperCopy pair (you are advised to use Interface for Reverse Synchronizing a Clone Pair instead of this interface).

HighRisk

You are about to restore HyperCopy pair ({0}). This operation uses the target object data to overwrite the source object data. Before performing this operation, ensure that the source object is not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain the data of the current source object, back up the source object data first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the target object.
You are about to stop restoring data of the target object in HyperCopy pair ({0}) to the source object. This operation will cause data of the source object in the HyperCopy pair to be unavailable. Suggestion: Before performing this operation, ensure that data of the source object in the HyperCopy pair is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/reverseSynchronize

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0:starts reverse synchronization 1:pauses reverse synchronization 2:stops reverse synchronization 3:continues reverse synchronization
hyperCopyType	Conditional	enum	Copy type. **The value is described as follows:** 0:full copy 1:differential copy **Note:**This field can be delivered when and only when the hyperCopyAction field is 0.
hyperCopyID	Mandatory	string	HyperCopy pair ID.

Result

N/A

Example

- Start full reverse synchronization of a HyperCopy pair.

```
Request: PUT/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/reverseSynchronize
{
   "hyperCopyAction": "0",
   "hyperCopyID": "430",
   "hyperCopyType": "0"
}
Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.9.14.5.3 (Not Recommended) Interface for Synchronizing a HyperCopy Consistency Group

Function

This interface is used to start, pause, continue, and stop member synchronization of a HyperCopy consistency group (you are advised to use Interface for Synchronizing a Clone Consistency Group instead of this interface).

HighRisk

You are about to synchronize HyperCopy consistency group ({0}). This operation uses data of source objects in HyperCopy pairs to overwrite data of target objects. Before performing this operation, ensure that target objects of HyperCopy pairs are not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain the data of a target object, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source objects.
You are about to stop synchronizing data from source objects to target objects in HyperCopy consistency group ({0}). This operation will cause data of target objects in HyperCopy pairs to be unavailable. Suggestion: Before performing this operation, ensure that data of target objects in HyperCopy pairs is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopy_ConsistentGroup/synchronize

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	HyperCopy consistency group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0:starts synchronization 1:pauses synchronization 2:stops synchronization 3:continues synchronization
cgType	Optional	enum	Consistency group type. **The value is described as follows:** 0:LUN_CG_TYPE_DEFAULT; 1:LUN_CG_TYPE_CLONE; 2:LUN_CG_TYPE_SNAP **Note:**The field is not used.

Result

N/A

Example

- Synchronize a HyperCopy consistency group.

```
Request: PUT/deviceManager/rest/2102350BSE10G5000095/HyperCopy_ConsistentGroup/synchronize
{
    "ID": "4",
    "cgType": "1",
    "copyAction": "0"
}
Response:
{
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.14.5.4 (Not Recommended) Interface for Synchronizing a HyperCopy Pair

Function

This interface is used to start, stop, pause, and continue HyperCopy pair synchronization (you are advised to use Interface for Synchronizing a Clone Pair instead of this interface).

HighRisk

You are about to synchronize HyperCopy pair ({0}). This operation uses the source object data to overwrite the target object data. Before performing this operation, ensure that the target object is not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain the data of the current target object, back up the target object data first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source object.
You are about to stop synchronizing data of the source object in HyperCopy pair ({0}) to the target object. This operation will cause data of the target object to be unavailable. Suggestion: Before performing this operation, ensure that data of the target object in the HyperCopy pair is no longer needed.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/synchronize

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0:starts synchronization 1:pauses synchronization 2:stops synchronization 3:continues synchronization

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Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyID	Mandatory	string	HyperCopy pair ID.

Result

N/A

Example

- Start synchronizing the HyperCopy pair.

```
Request: PUT/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/synchronize
{
   "hyperCopyAction": "0",
   "hyperCopyID": "429"
}
Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15 protect_group

2.9.15.1 Add

2.9.15.1.1 Interface for Adding a LUN to a Protection Group

Function

This interface is used to add a LUN to a protection group.

URL

https://${ip}:${port}/api/v2/protectgroup/associate

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN.
associateObjID	Mandatory	string	LUN ID. **The value is described as follows:** The value ranges from 0 to 65535. **Length:**1~5
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0-1023. **Length:**1~4
subType		uint32	Subtype. **The value is described as follows:** 0..1 **Note:** 0: common LUN 1: VVol LUN This field must be delivered when an object is added to or removed from a VVol protection group.

Result

N/A

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Example

- Adding a LUN to a protection group.

```
Request: POST /api/v2/protectgroup/associate
{
    "protectGroupId": "1",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "18"
}
Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a LUN to a protection group.

```
Request: POST /api/v2/protectgroup/associate
{
    "protectGroupId": "1",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "16",
    "vstoreId": "0"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a LUN to a protection group.

```
Request: POST /api/v2/protectgroup/associate
{
    "protectGroupId": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "12",
    "subType":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.15.1.2 Interface for Batch Adding LUNs to a Protection Group

Function

This interface is used to batch add LUNs to a protection group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/protectgroup/associate/batch

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Protection group ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN.
ASSOCIATEOBJID	Mandatory	string	LUN ID. **The value is described as follows:** The value ranges from 0 to 65535. **Length:**1~5
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0-1023. **Length:**1~4
subType		uint32	Subtype. **The value is described as follows:** 0..1 **Note:** 0: common LUN 1: VVol LUN This field must be delivered when an object is added to or removed from a VVol protection group.

Result

N/A

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Example

- Adding LUNs to a protection group.

```
Request: POST /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "9"
},{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "10"
}]

Response: {
   "data": [
      {
         "ASSOCIATEOBJID": "9",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ASSOCIATEOBJID": "10",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Adding LUNs to a protection group.

```
Request: POST /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "3",
   "vstoreId":"1"
},{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "4",
   "vstoreId":"1"
}]

Response: {
   "data": [
      {
         "ASSOCIATEOBJID": "3",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
```

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```
        {
            "ASSOCIATEOBJID": "4",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding LUNs to a protection group.

```
Request: POST /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "12",
    "subType":"1"
},{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "13",
    "subType":"1"
}]

Response: {
    "data": [
        {
            "ASSOCIATEOBJID": "12",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ASSOCIATEOBJID": "13",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.15.1.3 Interface for Creating a Protection Group

Function

This interface is used to create a protection group.

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URL

https://${ip}:${port}/api/v2/protectgroup

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjType	Optional	enum	Associated object type. **The value is described as follows:** 57646: snapshot consistency group
associateObjID	Optional	string	Associated object ID.
protectGroupName	Mandatory	string	Protection group name. **The value is described as follows:** The value is a string of 1 to 255 characters, including digits, letters, Chinese characters, underscores (_), hyphens (-), and periods (.). **Length:**1~255
protectGroupId	Optional	string	Protection group ID. **The value is described as follows:** The value is an integer ranging from 0 to 16383. If this parameter is not specified, the system automatically assigns an ID to the new protection group. **Length:**1~4

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Parameter	Mandatory/Optional/Conditional	Type	Description
lunGroupId	Optional	uint32	LUN group ID. **The value is described as follows:** To obtain the LUN group ID, run the show lun_group general command. If this parameter is not specified, the value is 4294967295 by default.
description	Optional	string	Description. **The value is described as follows:** The value contains 1 to 255 characters. **Length:**1~255
usageType	Optional	enum	Usage type of the protection group. **The value is described as follows:** 0: common LUN; 1: VVol LUN
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 57846.

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Parameter	Mandatory/ Conditional	Type	Description
cdpGroupNum	Mandatory	string(uint32)	Number of HyperCDP groups. **The value is described as follows:** The value ranges from 0 to 4096.
cloneGroupNum	Mandatory	string	Number of clone groups. **The value is described as follows:** The value ranges from 0 to 4096.
description	Mandatory	string	Description. **The value is described as follows:** The value contains 1 to 255 characters.
drStarNum	Mandatory	string(uint32)	DR Star trio quantity. **The value is described as follows:** 0 or 1.
hyperMetroGroupNum	Mandatory	string(uint32)	Number of HyperMetro consistency groups. **The value is described as follows:** The value ranges from 0 to 4096.
lunNum	Mandatory	string(uint32)	Number of LUNs. **The value is described as follows:** The value ranges from 0 to 4096.
lunGroupId	Mandatory	string(int32)	LUN group ID. **The value is described as follows:** The value ranges from -1 to 16383.

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Parameter	Mandatory/ Conditional	Type	Description
protectGroupId	Mandatory	string(uint32)	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
protectGroupName	Mandatory	string	Protection group name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
lunGroupName	Conditional	string	LUN group name.
replicationGroupNum	Mandatory	string(uint32)	Number of remote replication groups. **The value is described as follows:** The value ranges from 0 to 4096.
snapshotGroupNum	Mandatory	string(uint32)	Number of snapshot groups. **The value is described as follows:** The value ranges from 0 to 4096.
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** 1 to 255 characters
usageType	Mandatory	enum	Usage type of the protection group. **The value is described as follows:** 0: common LUN; 1: VVol LUN

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Example

- Creating a protection group.

```
Request: POST /api/v2/protectgroup
{
   "protectGroupName": "pg",
   "usageType":"1"
}

Response: {
   "data": {
      "TYPE": 57846,
      "cdpGroupNum": "0",
      "cloneGroupNum": "0",
      "description": "",
      "drStarNum": "0",
      "hyperMetroGroupNum": "0",
      "lunGroupId": "-1",
      "lunNum": "0",
      "protectGroupId": "5",
      "protectGroupName": "pg",
      "replicationGroupNum": "0",
      "snapshotGroupNum": "0",
      "usageType": "1",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15.2 Delete

2.9.15.2.1 Interface for Batch Removing LUNs from a Protection Group

Function

This interface is used to batch remove LUNs from a protection group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/protectgroup/associate/batch

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Protection group ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN.
ASSOCIATEOBJID	Mandatory	string	LUN ID. **The value is described as follows:** The value ranges from 0 to 65535. **Length:**1~5
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0-1023. **Length:**1~4
subType		uint32	Subtype. **The value is described as follows:** 0..1 **Note:** 0: common LUN 1: VVol LUN This field must be delivered when an object is added to or removed from a VVol protection group.

Result

N/A

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Example

- Removing LUNs from a protection group in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
   "ID": "4",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "0"
},{
   "ID": "4",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "1"
}]

Response: {
   "data": [
      {
         "ASSOCIATEOBJID": "0",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "4",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ASSOCIATEOBJID": "1",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "4",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Removing LUNs from a protection group in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "10",
   "subType":"1"
},{
   "ID": "0",
   "ASSOCIATEOBJTYPE": 11,
   "ASSOCIATEOBJID": "11",
   "subType":"1"
}]

Response: {
   "data": [
      {
         "ASSOCIATEOBJID": "10",
         "ASSOCIATEOBJTYPE": "11",
         "ID": "0",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
```

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```
        {
            "ASSOCIATEOBJID": "11",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Removing LUNs from a protection group in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/protectgroup/associate/batch
[{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "3",
    "vstoreId":"1"
},{
    "ID": "0",
    "ASSOCIATEOBJTYPE": 11,
    "ASSOCIATEOBJID": "4",
    "vstoreId":"1"
}]

Response: {
    "data": [
        {
            "ASSOCIATEOBJID": "3",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
            "ASSOCIATEOBJID": "4",
            "ASSOCIATEOBJTYPE": "11",
            "ID": "0",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.15.2.2 Interface for Deleting a Protection Group

Function

This interface is used to delete a protection group.

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URL

https://${ip}:${port}/api/v2/protectgroup/${protectGroupId}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupId	Mandatory	string	Object ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

N/A

Example

- Deleting a protection group.

```
Request: DELETE /api/v2/protectgroup/1
Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.15.2.3 Interface for Removing a LUN from a Protection Group

Function

This interface is used to remove a LUN from a protection group.

URL

https://${ip}:${port}/api/v2/protectgroup/associate

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Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN.
associateObjID	Mandatory	string	LUN ID. **The value is described as follows:** The value ranges from 0 to 65535. **Length:**1~5
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0-1023. **Length:**1~4
subType	Conditional	uint32	Subtype. **The value is described as follows:** 0..1 **Note:** 0: common LUN 1: VVol LUN This field must be delivered when an object is added to or removed from a VVol protection group.

Result

N/A

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Example

- Remove a LUN from a protection group.

```
Request: DELETE /api/v2/protectgroup/associate?
protectGroupId=0&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Remove a LUN from a protection group.

```
Request: DELETE /api/v2/protectgroup/associate?
protectGroupId=0&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=17&vstoreId=0

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Removing a LUN from a protection group.

```
Request: DELETE /api/v2/protectgroup/associate?
protectGroupId=0&ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=12&subType=1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15.3 Modify

2.9.15.3.1 Interface for Modifying a Protection Group

Function

This interface is used to modify a protection group.

URL

https://${ip}:${port}/api/v2/protectgroup/${protectGroupId}

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value ranges from 0 to 16383. **Length:**1~4
protectGroupName	Optional	string	Protection group name. **The value is described as follows:** The value is a string of 1 to 255 characters, including digits, letters, Chinese characters, underscores (_), hyphens (-), and periods (.). **Length:**1~255
description	Optional	string	Description. **The value is described as follows:** The value contains 1 to 255 characters. **Length:**1 ~ 255
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

N/A

Example

- Modifying a protection group.

```
Request: PUT /api/v2/protectgroup/0
{
  "protectGroupName": "test",
  "description": "test"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.15.4 Query

2.9.15.4.1 Interface for Batch Querying Protection Groups

Function

This interface is used to batch query basic information about protection groups.

URL

https://${ip}:${port}/api/v2/protectgroup

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields support fuzzy query: protectGroupName, protectGroupId, lunGroupId, and usageType.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 57846.
cdpGroupNum	Mandatory	uint32	Number of HyperCDP groups. **The value is described as follows:** 0..4096
cloneGroupNum	Mandatory	uint32	Number of clone groups. **The value is described as follows:** 0..4096
description	Mandatory	string	Description. **The value is described as follows:** The value contains 1 to 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
lunGroupId	Mandatory	uint32	LUN group ID. **The value is described as follows:** The value ranges from 0 to 16383.
isConsistency	Mandatory	bool	Whether it is a consistency group. **The value is described as follows:** The value can be "true" or "false".
lunNum	Mandatory	uint32	Number of LUNs. **The value is described as follows:** 0..4096
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
protectGroupName	Mandatory	string	Protection group name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
hyperMetroGroupNum	Mandatory	uint32	Number of HyperMetro consistency groups. **The value is described as follows:** 0..4096
replicationGroupNum	Mandatory	uint32	Number of remote replication groups. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
snapshotGroupNum	Mandatory	uint32	Number of snapshot groups. **The value is described as follows:** 0..8192
drStarNum	Mandatory	uint32	DR Star trio quantity. **The value is described as follows:** 0..1
usageType	Mandatory	enum	Usage type of the protection group. **The value is described as follows:** 0: common LUN; 1: VVol LUN
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 255 characters.
lunGroupName	Conditional	string	LUN group name. **The value is described as follows:** The value is a string of 1 to 255 characters.

Example

- Batch querying protection groups.

```
Request: GET /api/v2/protectgroup?range=[0-100]

Response: {
   "data": [
      {
         "RUNNINGSTATUS": "1",
         "TYPE": 57846,
         "cdpGroupNum": "0",
         "cloneGroupNum": "0",
         "description": "",
         "drStarNum": "0",
         "hyperMetroGroupNum": "0",
         "isConsistency": "true",
```

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```
            "lunGroupId": "-1",
            "lunNum": "1",
            "protectGroupId": "1",
            "protectGroupName": "protect_mq1",
            "replicationGroupNum": "0",
            "snapshotGroupNum": "0",
            "usageType": "1",
            "vstoreId": "1",
            "vstoreName": "V1"
        },
        {
            "RUNNINGSTATUS": "1",
            "TYPE": 57846,
            "cdpGroupNum": "0",
            "cloneGroupNum": "0",
            "description": "",
            "drStarNum": "0",
            "hyperMetroGroupNum": "0",
            "isConsistency": "true",
            "lunGroupId": "-1",
            "lunNum": "1",
            "protectGroupId": "2",
            "protectGroupName": "protect_mq2",
            "replicationGroupNum": "0",
            "snapshotGroupNum": "0",
            "usageType": "1",
            "vstoreId": "1",
            "vstoreName": "V1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.9.15.4.2 Interface for Implementing Associated Query of Protection Groups

Function

This interface is used to implement associated query of basic information about protection groups.

URL

https://${ip}:${port}/api/v2/protectgroup/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN. 256: LUN group. 57527: snapshot schedule. 57646: snapshot consistency group.
associateObjID	Mandatory	string	LUN ID, LUN group ID, snapshot timetable ID, and snapshot consistency group ID. **The value is described as follows:** The value ranges from 0 to 65535. **Length:**1~5
filter	Optional	string	Query criteria. **The value is described as follows:** The protectGroupName field supports fuzzy query.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 57846.
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.
protectGroupName	Mandatory	string	Protection group name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
lunGroupId	Mandatory	uint32	LUN group ID. **The value is described as follows:** The value ranges from 0 to 16383.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Conditional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 255 characters.

Example

- Querying the protection groups from the LUN.

```
Request: GET /api/v2/protectgroup/associate?
ASSOCIATEOBJTYPE=11&ASSOCIATEOBJID=0&range=[0-100]
```

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```
Response: {
   "data": [
      {
         "TYPE": 57846,
         "lunGroupId": "0",
         "protectGroupId": "0",
         "protectGroupName": "PG0001",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15.4.3 Interface for Querying a Protection Group

Function

This interface is used to query information about a protection group.

URL

https://${ip}:${port}/api/v2/protectgroup/${protectGroupId}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
protectGroupId	Mandatory	string	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383. **Length:**1~4
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 57846.
hyperMetroName	Conditional	string	Name list of HyperMetro consistency groups.
replicationGroupNum	Mandatory	string(uint32)	Number of remote replication consistency groups.
cdpGroupNum	Mandatory	string(uint32)	Number of HyperCDP consistency groups. **The value is described as follows:** 0..4096
cloneGroupNum	Mandatory	string(uint32)	Number of clone consistency groups.
cloneGroupName	Conditional	string	Name list of clone consistency groups.
description	Mandatory	string	Description. **The value is described as follows:** The value contains 1 to 255 characters.
lunGroupId	Mandatory	string(int32)	LUN group ID. **The value is described as follows:** The value ranges from -1 to 16383.
lunGroupName	Conditional	string	LUN group name.
lunNum	Mandatory	string(uint32)	Number of LUNs. **The value is described as follows:** 0..4096
protectGroupId	Mandatory	string(uint32)	Protection group ID. **The value is described as follows:** The value is an integer from 0 to 16383.

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Parameter	Mandatory/ Conditional	Type	Description
protectGroupName	Mandatory	string	Protection group name. **The value is described as follows:** The value contains 1 to 255 characters including digits, letters, underscores (_), hyphens (-), and periods (.).
replicationGroupName	Conditional	string	Name list of remote replication consistency groups.
snapshotGroupName	Conditional	string	Name list of snapshot consistency groups.
hyperMetroGroupNum	Mandatory	string(uint32)	Number of HyperMetro consistency groups. **The value is described as follows:** 0..4096
drStarNum	Mandatory	string(uint32)	Number of DR Star trios. **The value is described as follows:** 0..1
drStarName	Conditional	string	Name of a DR Star trio. **The value is described as follows:** The value contains 1 to 255 characters.
snapshotGroupNum	Mandatory	string(uint32)	Number of snapshot consistency groups.
usageType	Mandatory	enum	Usage type of the protection group. **The value is described as follows:** 0: common LUN; 1: VVol LUN

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 255 characters.

Example

- Querying information about a protection group.

```
Request: GET /api/v2/protectgroup/0

Response: {
   "data": {
      "TYPE": 57846,
      "cdpGroupNum": "0",
      "cloneGroupNum": "0",
      "description": "",
      "drStarNum": "0",
      "hyperMetroGroupNum": "0",
      "lunGroupId": "-1",
      "lunNum": "0",
      "protectGroupId": "6",
      "protectGroupName": "pg",
      "replicationGroupNum": "0",
      "snapshotGroupNum": "0",
      "usageType": "1",
      "vstoreId": "1",
      "vstoreName": "V1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15.4.4 Interface for Querying the Number of Protection Group

Function

This interface is used to query the number of protection groups.

URL

https://${ip}:${port}/api/v2/protectgroup/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The protectGroupName, protectGroupId, and lunGroupId fields support fuzzy query.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Count. **The value is described as follows:** The value ranges from 0 to 16384.

Example

- Querying the number of protection groups.

```
Request: GET /api/v2/protectgroup/count

Response: {
   "data": {
      "COUNT": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.15.5 Others

2.9.16 hyper_clone

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2.9.16.1 Add

2.9.16.1.1 Interface for Creating a Clone Pair

Function

This interface is used to create a clone pair.

URL

https://${ip}:${port}/api/v2/clonepair/create

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sourceID	Mandatory	string	Source object ID of a clone pair.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
targetID	Optional	string	Target object ID of a clone pair.
copyRate	Optional	enum	Copy rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
description	Optional	string	Clone pair description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
IOPriority	Optional	enum	I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
workloadTypeId	Optional	string	Application type ID. **The value is described as follows:** The value is the same as the application type ID. **Length:**0~2048
enableCompression	Optional	bool	Whether to enable compression. **The value is described as follows:** 0: no 1: yes
enableSmartDedup	Optional	bool	Whether to enable deduplication. **The value is described as follows:** 0: no 1: yes
isNeedSynchronize	Optional	bool	Whether synchronization starts immediately after clone pair creation. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone
ID	Mandatory	string	Clone pair ID.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.

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Parameter	Mandatory/ Conditional	Type	Description
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty

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Parameter	Mandatory/ Conditional	Type	Description
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID. **Note:**The default value is "4294967295", which is invalid.
copyRate	Mandatory	string(enum)	Copy rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a clone pair.

```
Request: POST /api/v2/clonepair/create
{
   "sourceID": "18",
   "name": "ggTarLUN0000_auto"
}
Response:
{
   "data": {
      "ID": "52",
      "consistencyGroupName": "",
      "description": "",
      "targetName": "ggTarLUN0000_auto",
      "name": "ggTarLUN0000_auto",
      "sourceName": "ggSrcLUN0000",
      "sourceID": "18",
      "targetID": "52",
      "copyRate": "2",
      "TYPE": "57702",
      "consistencyGroupID": "4294967295",
      "sourceType": "1",
      "copyEndTime": "18446744073709551615",
      "copyProcess": "0",
      "copyStatus": "0",
      "restoreEndTime": "18446744073709551615",
      "restoreStartTime": "18446744073709551615",
      "syncEndTime": "18446744073709551615",
      "syncStartTime": "1561259100",
      "syncStatus": "1",
      "vstoreId":"0",
      "vstoreName":"System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.16.1.2 (Not Recommended) Interface for Creating a HyperCopy Pair

Function

This interface is used to create a HyperCopy pair (you are advised to use Interface for Creating a Clone Pair instead of this interface).

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HighRisk

You are about to create a HyperCopy pair ({0}). If you select the high or highest copy speed, the HyperCopy pair will be synchronized or restored at the high or highest speed, which may cause heavy service pressure and decrease the read/write performance of the host. If you select to start synchronization after a HyperCopy pair is created, the source object data will overwrite the target object data. Before performing this operation, ensure that the target object is not being read or written by the host and no data is stored in the host cache.

Suggestion:

1. Perform this operation during off-peak hours.

2. To retain the data of the current target object, back up the target object data first.

3. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/HyperCopyPair/create

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopySourceID	Mandatory	string	Source object ID of a HyperCopy pair.
hyperCopyName	Mandatory	string	HyperCopy pair name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
hyperCopyRate	Optional	enum	Copy rate. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest **Default:**2: Middle
hyperCopyTargetID	Mandatory	string	Target object ID of a HyperCopy pair.
hyperCopyDescription	Optional	string	HyperCopy pair description. **Length:**0~255

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 57702:HYPER_COPY
hyperCopyID	Mandatory	string	HyperCopy pair ID.
hyperCopyName	Mandatory	string	HyperCopy pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopySourceID	Mandatory	string	Source object ID of a HyperCopy pair.

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopySourceType	Mandatory	enum	Source object type of a HyperCopy pair. **The value is described as follows:** 1: LUN 2: snapshot
hyperCopySource-Name	Mandatory	string	Source object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyTargetID	Mandatory	string	Target object ID of a HyperCopy pair.
hyperCopyDstName	Mandatory	string	Target object name of a HyperCopy pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyDescription	Mandatory	string	HyperCopy pair description. **The value is described as follows:** The value contains 0 to 255 characters.
hyperCopySyncStart-Time	Mandatory	uint64	Synchronization start time.
hyperCopySyncEnd-Time	Mandatory	uint64	Synchronization end time.
hyperCopyRestoreS-tartTime	Mandatory	uint64	Start time of reverse synchronization.
hyperCopyRestoreEnd-Time	Mandatory	uint64	End time of reverse synchronization.

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyStatus	Mandatory	enum	Health status. **The value is described as follows:** 0: Normal 1: Faulty
hyperCopySyncStatus	Mandatory	enum	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync paused 4: FullCopy restoring 5: DiffCopy restoring 6: FullCopy restoration paused 7: DiffCopy restoration paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	uint64	Estimated copy end time.
hyperCopyCgName	Mandatory	string	HyperCopy consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
hyperCopyConsisten-cyGroupID	Mandatory	uint32	HyperCopy consistency group ID.
hyperCopyRate	Mandatory	enum	Copy rate. **The value is described as follows:** 1: Low 2: Middle 3: High 4: Highest

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Parameter	Mandatory/ Conditional	Type	Description
hyperCopyProcess	Mandatory	uint32	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

Example

- Creating a HyperCopy pair.

```
Request: POST/deviceManager/rest/2102350BSE10G5000095/HyperCopyPair/create
{
   "hyperCopyName": "HyperCopyPair013",
   "hyperCopyRate": "2",
   "hyperCopySourceID": "12",
   "hyperCopyTargetID": "13"
}
Response:
{
   "data": [
      {
         "TYPE": "57702",
         "copyEndTime": "-1",
         "hyperCopyCgName": "--",
         "hyperCopyConsistencyGroupID": "-1",
         "hyperCopyDescription": "",
         "hyperCopyDstName": "LUN0130001",
         "hyperCopyID": "13",
         "hyperCopyName": "HyperCopyPair013",
         "hyperCopyProcess": "-1",
         "hyperCopyRate": "2",
         "hyperCopyRestoreEndTime": "-1",
         "hyperCopyRestoreStartTime": "-1",
         "hyperCopySourceID": "12",
         "hyperCopySourceName": "LUN0130000",
         "hyperCopySourceType": "1",
         "hyperCopyStatus": "0",
         "hyperCopySyncEndTime": "-1",
         "hyperCopySyncStartTime": "-1",
         "hyperCopySyncStatus": "8",
         "hyperCopyTargetID": "13"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.16.2 Delete

2.9.16.2.1 Interface for Deleting a Clone Pair

Function

This interface is used to delete a clone pair.

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URL

https://${ip}:${port}/api/v2/clonepair/{id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone pair ID.
isDeleteDstLun	Optional	bool	Whether to delete the target LUN. **The value is described as follows:** 0: no 1: yes
isRecycleDstLunData	Optional	bool	Whether to reclaim the target LUN's data. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before performing this operation, ensure that the operation and parameters are correct.

Example

- Deleting a clone pair.

```
Request: DELETE /api/v2/clonepair/36

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.16.3 Modify

2.9.16.3.1 Interface for Modifying a Clone Pair

Function

This interface is used to modify clone pair settings.

URL

https://${ip}:${port}/api/v2/clonepair/modify

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone pair ID.
name	Conditional	string	Clone pair name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255 **Note:**At least one of name, copyRate, and description must be delivered.
copyRate	Conditional	enum	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**At least one of name, copyRate, and description must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
description	Conditional	string	Clone pair description. **Length:**0~255 **Note:**At least one of name, copyRate, and description must be delivered.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Changing the name of a clone pair to "aaa".

```
Request: PUT /api/v2/clonepair/modify
{
    "ID": "32",
    "name": "aaa"
}
Response:
{
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.16.4 Query

2.9.16.4.1 Interface for Batch Querying Clone Pairs

Function

This interface is used to batch query clone pairs.

URL

https://${ip}:${port}/api/v2/clonepair

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, name, sourceName, copyStatus, syncStatus, and syncStartTime are supported. Parameter sourceName can only be delivered separately, or the return value may not be correct.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone
ID	Mandatory	string	Clone pair ID.

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID.
copyRate	Mandatory	string(enum)	Copy rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Query information about clone pairs in batches.

```
Request: GET /api/v2/clonepair?range=%5B0-5%5D
Response:
{
   "data":
      {
         "ID": "36",
         "consistencyGroupID": "4294967295",
         "consistencyGroupName": "",
         "copyEndTime": "18446744073709551615",
         "copyProcess": "0",
         "copyStatus": "0",
         "description": "",
         "name": "CLO",
         "restoreEndTime": "18446744073709551615",
         "restoreStartTime": "18446744073709551615",
         "sourceName": "lun0000",
         "sourceType": "1",
         "subType": "0",
         "syncEndTime": "18446744073709551615",
         "syncStartTime": "1568170771",
         "syncStatus": "3",
         "targetName": "CLO",
         "TYPE": 57702,
         "copyRate": "2",
         "sourceID": "26",
         "targetID": "36",
         "vstoreId":"0",
         "vstoreName":"System_vStore",
      },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.9.16.4.2 Interface for Implementing Associated Query of Clone Pair Information

Function

This interface is used to implement associated query of clone pair information.

URL

https://${ip}:${port}/api/v2/clonepair/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
objtype	Conditional	enum	Type number of the managed object. **The value is described as follows:** 57702: clone **Note:**This field can be delivered when the ASSOCIATEOBJTYPE field is 57703.
ASSOCIATEOBJTYPE	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57703: clone consistency group
ASSOCIATEOBJID	Mandatory	string	Associated object ID.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters ID, name, copyStatus, and syncStatus are supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone
ID	Mandatory	string	Clone pair ID.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone

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Parameter	Mandatory/ Conditional	Type	Description
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty

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Parameter	Mandatory/ Conditional	Type	Description
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.).
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID.
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

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Example

- Querying information about members in clone consistency group "1".

```
Request: GET /api/v2/clonepair/associate?
objtype=57702&ASSOCIATEOBJTYPE=57703&ASSOCIATEOBJID=1
Response:
{
   "data": [
      {
         "TYPE": "57702",
         "ID": "55",
         "consistencyGroupName": "clone_cg1",
         "description": "",
         "targetName": "ggSrcLUN0_00000000000000055",
         "name": "ggSrcLUN0_00000000000000055",
         "sourceName": "ggSrcLUN0008",
         "subType": "0",
         "sourceID": "30",
         "sourceType": "1",
         "targetID": "55",
         "syncStatus": "0",
         "copyStatus": "0",
         "copyRate": "1",
         "consistencyGroupID": "1",
         "syncStartTime": "18446744073709551615",
         "syncEndTime": "18446744073709551615",
         "restoreStartTime": "18446744073709551615",
         "restoreEndTime": "18446744073709551615",
         "copyProcess": "4294967295",
         "copyEndTime": "18446744073709551615"
      }
   ],
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.9.16.4.3 Interface for Querying Clone Pair Information

Function

This interface is used to query information about a cone pair whose ID is specified.

URL

https://${ip}:${port}/api/v2/clonepair/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Clone pair ID.
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone
ID	Mandatory	string	Clone pair ID.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.

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Parameter	Mandatory/ Conditional	Type	Description
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty

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Parameter	Mandatory/ Conditional	Type	Description
copySyncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID.
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.
subType	Mandatory	string	Subtype. **The value is described as follows:** 0: common HyperCopy pair.

Example

- Querying clone pair information.

```
Request: GET /api/v2/clonepair/52

Response: {
   "data": {
      "ID": "52",
      "consistencyGroupName": "",
      "description": "modify clone",
      "targetName": "ggTarLUN0000_auto",
      "name": "ggTarLUN0000_auto",
      "sourceName": "ggSrcLUN0000",
      "subType": "0",
      "consistencyGroupID": "4294967295",
      "copyRate": "1",
      "copySyncStatus": 0,
      "TYPE": "57702",
      "sourceID": "18",
      "sourceType": "1",
      "targetID": "52",
      "copyEndTime": "18446744073709551615",
      "copyProcess": "0",
      "copyStatus": "0",
      "restoreEndTime": "1561261346",
      "restoreStartTime": "1561261328",
      "syncEndTime": "1561260980",
      "syncStartTime": "1561260959",
      "syncStatus": "2",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.16.4.4 Interface for Querying the Number of Clone Pairs

Function

This interface is used to query the number of clone pairs.

URL

https://${ip}:${port}/api/v2/clonepair/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** During exact query, the following fields are supported: copyStatus and syncStatus. During fuzzy query, the following fields are supported: sourceName and name.
ASSOCIATEOBJTYPE	Conditional	enum	Associated object type. **The value is described as follows:** 11: LUN 27: snapshot 57703: clone consistency group **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
TYPE	Conditional	enum	Type number of the managed object. **The value is described as follows:** 57702: clone **Note:**This field can be delivered when the ASSOCIATEOBJTYPE field is set to the clone consistency group.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Conditional	string	Associated object ID. **Note:**ASSOCIATEOBJID and ASSOCIATEOBJTYPE must be delivered at the same time.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried clone pairs.

Example

- Querying the number of clone pairs.

```
Request: GET /api/v2/clonepair/count
Response:
{
   "data": {
      "COUNT": "21"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.16.4.5 Interface for Querying the Pair Difference Between a Protection Group and a Clone Group

Function

This interface is used to query the pair difference between a protection group and a clone group.

URL

https://${ip}:${port}/api/v2/get_diff_clone_pair

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.
cloneCgId	Mandatory	uint32	Clone consistency group ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone
ID	Mandatory	string	Clone pair ID.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone

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Parameter	Mandatory/ Conditional	Type	Description
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty

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Parameter	Mandatory/ Conditional	Type	Description
copySyncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID.
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.

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Example

- Querying clone pair information.

```
Request: GET /api/v2/get_diff_clone_pair?pgId=0&cloneCgId=0

Response: {
   "data": [
      {
         "type": "57702",
         "ID": "12",
         "consistencyGroupName": "p0",
         "description": "",
         "targetName": "lun0000_19070806444900012",
         "name": "lun0000_19070806444900012",
         "sourceName": "lun0000",
         "subType": "0",
         "sourceID": "0",
         "sourceType": "1",
         "targetID": "12",
         "syncStatus": "3",
         "copyStatus": "0",
         "copySyncStatus": "1",
         "copyRate": "2",
         "consistencyGroupID": "0",
         "syncStartTime": "1562568290",
         "syncEndTime": "18446744073709551615",
         "restoreStartTime": "18446744073709551615",
         "restoreEndTime": "18446744073709551615",
         "copyProcess": "0",
         "copyEndTime": "18446744073709551615"
      }
   ],
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.9.16.4.6 Interface for Querying the Pair Quantity Difference Between a Protection Group and a Clone Group

Function

This interface is used to query the pair quantity difference between a protection group and a clone group.

URL

https://${ip}:${port}/api/v2/get_diff_clone_pair/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
pgId	Mandatory	uint32	Protection group ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
cloneCgId	Mandatory	uint32	Clone consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried clone pairs.

Example

- Querying the number of clone pairs.

```
Request: GET /api/v2/get_diff_clone_pair/count?pgId=0&cloneCgId=0
Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": ""
    }
}
```

2.9.16.5 Others

2.9.16.5.1 Interface for Reactivating a Clone Pair

Function

This interface is used to reactivate a clone pair.

HighRisk

You are about to synchronize clone pair ({0}). This operation will use the source object data to overwrite target object data. Before performing this operation, ensure that the target object is not being read or written by the host and no data is stored in the host cache.

Suggestion:

1. To retain data of a target object, back it up first.

2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source object.

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URL

https://${ip}:${port}/api/v2/clonepair/relation

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
sourceID	Mandatory	string	Source object ID of a clone pair.
targetID	Mandatory	string	Target object ID of a clone pair.
copyRate	Optional	enum	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
isNeedSynchronize	Optional	bool	Whether synchronization starts immediately after clone pair creation. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57702: clone

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Clone pair ID.
name	Mandatory	string	Clone pair name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourceID	Mandatory	string	Source object ID of a clone pair.
sourceType	Mandatory	string(enum)	Source object type of a clone pair. **The value is described as follows:** 1: LUN 2: snapshot 3: clone
sourceName	Mandatory	string	Source object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
targetID	Mandatory	string	Target object ID of a clone pair.
targetName	Mandatory	string	Target object name of a clone pair. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
description	Mandatory	string	Clone pair description. **The value is described as follows:** The value contains 0 to 255 characters.
syncStartTime	Mandatory	string(uint64)	Synchronization start time.
syncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyEndTime	Mandatory	string(uint64)	Estimated copy end time.

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Parameter	Mandatory/ Conditional	Type	Description
consistencyGroup-Name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
consistencyGroupID	Mandatory	string(uint32)	Clone consistency group ID.
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
copyProcess	Mandatory	string(uint32)	Copy process. **The value is described as follows:** The value is an integer ranging from 0 to 100.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Reactivating a clone pair.

```
Request: POST /api/v2/clonepair/relation
{
    "sourceID": "0",
    "targetID": "2",
    "copyRate": 3
}
Response:
{
    "data": {
        "copyRate": "3",
        "ID": "2",
        "consistencyGroupName": "",
        "description": "",
        "targetName": "lun0002",
        "name": "lun0002",
        "sourceName": "lun0000",
        "sourceID": "0",
        "targetID": "2",
```

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```
        "TYPE": "57702",
        "consistencyGroupID": "4294967295",
        "copyEndTime": "18446744073709551615",
        "copyProcess": "0",
        "copyStatus": "0",
        "restoreEndTime": "18446744073709551615",
        "restoreStartTime": "18446744073709551615",
        "sourceType": "1",
        "syncEndTime": "18446744073709551615",
        "syncStartTime": "1562295530",
        "syncStatus": "1",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": ""
    }
}
```


2.9.16.5.2 Interface for Reverse Synchronizing a Clone Pair

Function

This interface is used to start, stop, pause, and resume full or differential reverse synchronization of a clone pair.

HighRisk

You are about to reverse synchronize clone pair ({0}). This operation will use the target object data to overwrite source object data. Before performing this operation, ensure that the source object is not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain data of a source object, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the target object.
You are about to stop reverse synchronizing data of the target object in clone pair ({0}) to the source object. This operation will cause data of the source object in the clone pair to be unavailable. Suggestion: Before performing this operation, ensure that data of the source object in the clone pair is no longer needed.

URL

https://${ip}:${port}/api/v2/clonepair/reversesynchronize

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0: starts reverse synchronization. 1: pauses reverse synchronization. 2: stops reverse synchronization. 3: continues reverse synchronization.
copyType	Conditional	enum	Copy type. **The value is described as follows:** 0: full reverse synchronization 1: differential reverse synchronization **Note:**This field can be delivered only when the "copyAction" field is "0".
ID	Mandatory	string	Clone pair ID.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Starting full reverse synchronization of a clone pair.

```
Request: PUT /api/v2/clonepair/reversesynchronize
{
    "ID": "52",
    "copyAction": 0,
    "copyType": 1
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": ""
    }
}
```

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2.9.16.5.3 Interface for Synchronizing a Clone Pair

Function

This interface is used to start, stop, pause, and continue clone pair synchronization.

HighRisk

You are about to synchronize clone pair ({0}). This operation will use the source object data to overwrite target object data. Before performing this operation, ensure that the target object is not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain data of a target object, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source object.
You are about to stop synchronizing data of the source object in clone pair ({0}) to the target object. This operation will cause data of the target object to be unavailable. Suggestion: Before performing this operation, ensure that data of the target object in the clone pair is no longer needed.

URL

https://${ip}:${port}/api/v2/clonepair/synchronize

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0: starts synchronization. 1: pauses synchronization. 2: stops synchronization. 3: continues synchronization.
ID	Mandatory	string	Clone pair ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Starting clone pair synchronization.

```
Request: PUT /api/v2/clonepair/synchronize
{
    "ID": "52",
    "copyAction": 0
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": ""
    }
}
```

2.9.17 hyper_clone_group

2.9.17.1 Add

2.9.17.1.1 Interface for Adding a Clone Pair to a Clone Consistency Group

Function

This interface is used to add a clone pair to a clone consistency group.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup/create_associate

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed clone pair. **The value is described as follows:** 57702: clone pair
ASSOCIATEOBJID	Mandatory	string	ID of a clone pair to be added.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Adding a clone pair to a clone consistency group.

```
Request: POST /api/v2/clone_consistentgroup/create_associate
{
    "ASSOCIATEOBJID": "19",
    "ASSOCIATEOBJTYPE": "57702",
    "ID": "4"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.17.1.2 Interface for Creating a Clone Consistency Group

Function

This interface is used to create a clone consistency group.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
sourcePgId	Mandatory	string	Protection group ID. **Length:**1~128
description	Optional	string	Clone consistency group description. **Length:**0~255
isNeedSynchronize	Optional	bool	Whether to start synchronization immediately. **The value is described as follows:** 0: no 1: yes
copyRate	Optional	enum	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
isCreateDstLun	Optional	bool	Whether to create target LUNs. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57703: clone consistency group
ID	Mandatory	string	Clone consistency group ID.
name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourcePgId	Mandatory	string	Source protection group ID.
sourcePgName	Mandatory	string	Source protection group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.
cgType	Mandatory	string(enum)	Consistency group type. **The value is described as follows:** 1: clone consistency group

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Parameter	Mandatory/ Conditional	Type	Description
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty
lastSyncStartTime	Mandatory	string(uint64)	Synchronization start time.
lastSyncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Creating a clone consistency group.

```
Request: POST /api/v2/clone_consistentgroup
{
   "name": "clone_cg1",
   "sourcePgId": "2",
   "description": "create clone group by rest.",
   "copyRate": 1
}
Response:
{
   "data": {
      "copyRate": "1",
      "description": "create clone group by rest.",
      "name": "clone_cg1",
      "sourcePgId": "2",
      "sourcePgName": "p1",
      "vstoreId":"0",
   "vstoreName":"System_vStore",
      "ID": "2",
      "type": "57703",
      "cgType": "1",
      "copyStatus": "0",
      "lastSyncEndTime": "18446744073709551615",
      "lastSyncStartTime": "1562296871",
      "restoreEndTime": "18446744073709551615",
      "restoreStartTime": "18446744073709551615",
      "syncStatus": "3"
   },
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.9.17.2 Delete

2.9.17.2.1 Interface for Deleting a Clone Consistency Group

Function

This interface is used to delete a clone consistency group.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup/{id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
isDeleteDstLun	Optional	bool	Whether to delete the target LUN. **The value is described as follows:** 0: no 1: yes
isRecycleDstLunData	Optional	bool	Whether to reclaim the target LUN' data. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before you perform this operation, ensure that you have selected the correct clone CG.

Example

- Deleting a clone consistency group.

```
Request: DELETE /api/v2/clone_consistentgroup/3

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.17.2.2 Interface for Removing a Clone Pair from a Clone Consistency Group

Function

This interface is used to remove a clone pair from a clone consistency group.

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URL

https://${ip}:${port}/api/v2/clone_consistentgroup/remove_associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the managed clone pair. **The value is described as follows:** 57702: clone pair
ASSOCIATEOBJID	Mandatory	string	ID of a clone pair to be removed.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Removing a clone pair from a clone consistency group.

```
Request: DELETE /api/v2/clone_consistentgroup/remove_associate
{
    "ASSOCIATEOBJID": "388",
    "ASSOCIATEOBJTYPE": 57702,
    "ID": "4"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.17.3 Modify

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2.9.17.3.1 Interface for Modifying a Clone Consistency Group

Function

This interface is used to modify clone consistency group settings.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
name	Optional	string	Clone consistency group name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~255
description	Optional	string	Clone consistency group description. **Length:**0~255
copyRate	Optional	enum	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
vstoreId	Optional	string	vStore ID.

Result

N/A

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Example

- Modifying a clone consistency group.

```
Request: PUT /api/v2/clone_consistentgroup
{
   "ID": "61",
   "name": "1"
}
Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.17.4 Query

2.9.17.4.1 Interface for Batch Querying Clone Consistency Groups

Function

This interface is used to batch query basic information about clone consistency groups.

URL

https://${ip}:${port/api/v2/clone_consistentgroup?cgType=1&range=[0-100]

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1: clone consistency group

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters name, ID, copyStatus, syncStatus, and lastSyncStartTime are supported.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57703: clone consistency group
ID	Mandatory	string	Clone consistency group ID.
name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
sourcePgId	Mandatory	string	Source protection group ID.
sourcePgName	Mandatory	string	Source protection group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.
cgType	Mandatory	string(enum)	Consistency group type. **The value is described as follows:** 1: clone consistency group
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty
lastSyncStartTime	Mandatory	string(uint64)	Synchronization start time.
lastSyncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Batch querying clone consistency groups.

```
Request: GET /api/v2/clone_consistentgroup?cgType=1&range=[0-100]

Response: {
   "data": [
      {
         "ID": "0",
         "cgType": "1",
         "copyRate": "2",
```

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```
            "description": "",
            "name": "clone1",
            "sourcePgId": "2",
            "sourcePgName": "p1",
            "type": "57703",
            "copyStatus": "0",
            "lastSyncEndTime": "18446744073709551615",
            "lastSyncStartTime": "1562295672",
            "restoreEndTime": "18446744073709551615",
            "restoreStartTime": "18446744073709551615",
            "syncStatus": "3",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": ""
    }
}
```


2.9.17.4.2 Interface for Querying Clone Consistency Group Information

Function

This interface is used to query basic information about a clone consistency group.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
vstoreId	Optional	string	vStore ID.

Result

Parameter	Mandatory/ Conditional	Type	Description
type	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 57703: clone consistency group
ID	Mandatory	string	Clone consistency group ID.
name	Mandatory	string	Clone consistency group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
sourcePgId	Mandatory	string	Source protection group ID.
sourcePgName	Mandatory	string	Source protection group name. **The value is described as follows:** The value contains 1 to 255 letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Clone consistency group description. **The value is described as follows:** The value contains 0 to 255 characters.
cgType	Mandatory	string(enum)	Consistency group type. **The value is described as follows:** 1: clone consistency group

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Parameter	Mandatory/ Conditional	Type	Description
copyRate	Mandatory	string(enum)	Copy speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
syncStatus	Mandatory	string(enum)	Running status. **The value is described as follows:** 0: Unsynchronized 1: Synchronizing 2: Normal 3: Sync Paused 4: FullCopy Restoring 5: DiffCopy Restoring 6: FullCopy Restoration Paused 7: DiffCopy Restoration Paused 8: Initializing 9: Deleting
copyStatus	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: normal 1: faulty
lastSyncStartTime	Mandatory	string(uint64)	Synchronization start time.
lastSyncEndTime	Mandatory	string(uint64)	Synchronization end time.
restoreStartTime	Mandatory	string(uint64)	Start time of reverse synchronization.
restoreEndTime	Mandatory	string(uint64)	End time of reverse synchronization.
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

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Example

- Querying clone consistency group information.

```
Request: GET /api/v2/clone_consistentgroup/1

Response: {
   "data": {
      "ID": "1",
      "cgType": "",
      "copyRate": "1",
      "description": "create clone group by rest.",
      "name": "clone_cg1",
      "type": "57703",
      "copyStatus": "0",
      "lastSyncEndTime": "18446744073709551615",
      "lastSyncStartTime": "18446744073709551615",
      "restoreEndTime": "18446744073709551615",
      "restoreStartTime": "18446744073709551615",
      "sourcePgId": "1",
      "sourcePgName": "lunPg_1",
      "syncStatus": "0",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": ""
   }
}
```

2.9.17.4.3 Interface for Querying the Number of Clone Consistency Groups

Function

This interface is used to query the number of clone consistency groups.

URL

https://${ip}:${port/api/v2/clone_consistentgroup/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cgType	Mandatory	enum	Consistency group type. **The value is described as follows:** 1: clone consistency group
vstoreId	Optional	string	vStore ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried clone consistency groups.

Example

- Querying the number of clone consistency groups.

```
Request: GET /api/v2/clone_consistentgroup/count?cgType=1
Response:
{
   "data": {
   "COUNT":"40"},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.9.17.5 Others

2.9.17.5.1 Interface for Reverse Synchronizing a Clone Consistency Group

Function

This interface is used to set the reverse synchronization parameters of clone consistency groups.

HighRisk

You are about to stop reverse synchronizing data of target objects to source objects in clone consistency group ({0}). This operation will cause data of source objects in clone pairs to be unavailable. Suggestion: Before performing this operation, ensure that data of source objects in clone pairs is no longer needed.
You are about to reverse synchronize clone consistency group ({0}). This operation will use data of target objects in clone pairs to overwrite data of source objects. Before performing this operation, ensure that source objects in clone pairs are not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain data of source objects, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the target objects.

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URL

https://${ip}:${port}/api/v2/clone_consistentgroup/reversesynchronize

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0: starts reverse synchronization. 1: pauses reverse synchronization. 2: stops reverse synchronization. 3: continues reverse synchronization.
copyType	Conditional	enum	Copy type. **The value is described as follows:** 0: full reverse synchronization 1: differential reverse synchronization **Note:**This field can be delivered only when the "copyAction" field is "0".
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Reverse synchronizing a clone consistency group.

```
Request: PUT /api/v2/clone_consistentgroup/reversesynchronize
{
```

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```
    "ID": "4",
    "copyAction": "0",
    "copyType": "0"

}
Response:
{
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.17.5.2 Interface for Synchronizing a Clone Consistency Group

Function

This interface is used to start, pause, continue, and stop member synchronization of a clone consistency group.

HighRisk

You are about to synchronize clone consistency group ({0}). This operation will use data of source objects in clone pairs to overwrite data of target objects. Before performing this operation, ensure that target objects in clone pairs are not being read or written by the host and no data is stored in the host cache. Suggestion: 1. To retain data of target objects, back it up first. 2. Ensure that the free capacity of the storage pool is greater than the actual capacity of the source objects.
You are about to stop synchronizing data from source objects to target objects in clone consistency group ({0}). This operation will cause data of target objects in clone pairs to be unavailable. Suggestion: Before performing this operation, ensure that data of target objects in clone pairs is no longer needed.

URL

https://${ip}:${port}/api/v2/clone_consistentgroup/synchronize

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Clone consistency group ID.
copyAction	Mandatory	enum	Copy action. **The value is described as follows:** 0: starts synchronization. 1: pauses synchronization. 2: stops synchronization. 3: continues synchronization.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Synchronizing a clone consistency group.

```
Request: PUT /api/v2/clone_consistentgroup/synchronize
{
    "ID": "4",
    "copyAction": "0"
}
Response:
{
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.18 snap_group

2.9.18.1 Add

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2.9.18.1.1 Interface for Adding a Snapshot to a Snapshot Consistency Group

Function

This interface is used to add a snapshot to a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/snapshot_consistency_group/create_associate

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	Snapshot consistency group ID.
associateObjType	Mandatory	enum	Type number of the managed snapshot. **The value is described as follows:** 27: snapshot
associateObjID	Mandatory	string	ID of a snapshot to be added.
vstoreId	Optional	string	vStore ID.

Result

N/A

Example

- Adding a snapshot to a snapshot consistency group.

```
Request: POST /api/v2/snapshot_consistency_group/create_associate
{
    "ASSOCIATEOBJID": "78",
    "ASSOCIATEOBJTYPE": "27",
    "id": "0"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.9.18.2 Delete

2.9.18.2.1 Interface for Removing a Snapshot from a Snapshot Consistency Group

Function

This interface is used to remove a snapshot from a snapshot consistency group.

URL

https://${ip}:${port}/api/v2/snapshot_consistency_group/remove_associate

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	Snapshot consistency group ID.
associateObjType	Mandatory	enum	Type number of the managed snapshot. **The value is described as follows:** 27: snapshot
associateObjID	Mandatory	string	ID of a snapshot to be removed.
vstoreId	Optional	string	vStore ID.

Result

N/A

Usage Guidelines

Before performing this operation, ensure that the snapshot does not need to be protected by the snapshot consistency group.

Example

- Removing a snapshot from a snapshot consistency group.

```
Request: DELETE /api/v2/snapshot_consistency_group/remove_associate
{
   "ASSOCIATEOBJID": "78",
   "ASSOCIATEOBJTYPE": "27",
```

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```
    "id": "0"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.9.18.3 Modify

2.9.18.4 Query

2.9.18.5 Others

2.10 Performance optimization

2.10.1 smart_qos

2.10.1.1 Add

2.10.1.1.1 Interface for Creating a SmartQoS Policy

Function

This interface is used to create a SmartQoS policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value is a string of 1 to 31 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255
IOTYPE	Optional	enum	I/O property information in a SmartQoS policy. **The value is described as follows:** 2: read and write I/Os **Default:**2: read and write I/Os
LUNLIST	Optional	array	List of LUN IDs in a SmartQoS policy. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
MAXBANDWIDTH	Conditional	uint32	Maximum bandwidth of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**You must specify at least one of parameters "MAXBANDWIDTH", "MAXIOPS", "MINBANDWIDTH", "MINIOPS", and "LATENCY".
MAXIOPS	Conditional	uint32	Maximum IOPS of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**You must specify at least one of parameters "MAXBANDWIDTH", "MAXIOPS", "MINBANDWIDTH", "MINIOPS", and "LATENCY".

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Parameter	Mandatory/Optional/Conditional	Type	Description
PRIORITY	Optional	enum	Priority of a SmartQoS policy. **The value is described as follows:** When the priority of a SmartQoS policy is set to high, the performance objective of the SmartQoS policy is ensured first. The default value is normal. 0: normal 1: high **Default:**0: normal
SCHEDULEPOLICY	Mandatory	enum	Scheduling policy. **The value is described as follows:** 0: once 1: daily 2: weekly
SCHEDULESTARTTIME	Mandatory	uint64	Date (UTC) for SmartQoS policy settings to take effect. **The value is described as follows:** The hour, minute, and second are ignored, and only the values of the year, month, and day are effective (UTC time).
STARTTIME	Mandatory	string	Time for SmartQoS policy settings to take effect. **The value is described as follows:** The time is returned in the hh:mm format.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DURATION	Mandatory	uint32	Validity period of SmartQoS policy settings. **The value is described as follows:** The value is smaller than 24 hours.
CYCLESET	Conditional	array	Cycle period of a SmartQoS policy. **The value is described as follows:** The value is an int array. The cycle period is expressed in days when SCHEDULEPOLICY is set to weekly. 0 to 6 map to Sunday to Saturday. **Note:**This field is mandatory when SCHEDULEPOLICY is set to weekly.
CLASSTYPE	Optional	enum	SmartQoS policy control type. **The value is described as follows:** 1: controls the upper limit of I/Os. **Default:**1: controls the upper limit of I/Os.
POLICYTYPE	Optional	enum	Policy type. **The value is described as follows:** 0: normal 1: hierarchical **Default:**0: normal

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Parameter	Mandatory/Optional/Conditional	Type	Description
BURSTBANDWIDTH	Optional	uint32	Maximum burst bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s
BURSTIOPS	Optional	uint32	Maximum burst IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999.
BURSTTIME	Conditional	uint32	Burst time. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999 (unit: second). **Unit:**seconds **Note:**When either one of the BURSTBANDWIDTH and BURSTIOPS fields is delivered, this field must be delivered.
HOSTLIST	Optional	array	List of host IDs in a SmartQoS policy. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
MINBANDWIDTH	Conditional	uint32	Minimum bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**You must specify at least one of parameters "MAXBANDWIDTH", "MAXIOPS", "MINBANDWIDTH", "MINIOPS", and "LATENCY".
MINIOPS	Conditional	uint32	Minimum IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**You must specify at least one of parameters "MAXBANDWIDTH", "MAXIOPS", "MINBANDWIDTH", "MINIOPS", and "LATENCY".
LATENCY	Conditional	uint32	I/O latency. **The value is described as follows:** The value can be "500" or "1500". **Unit:**μs **Note:**You must specify at least one of parameters "MAXBANDWIDTH", "MAXIOPS", "MINBANDWIDTH", "MINIOPS", and "LATENCY".

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**N/A.
FSLIST	Optional	array	List of file system IDs in a SmartQoS policy. **The value is described as follows:** 1. This field contains a maximum of 512 file system IDs and is mutually exclusive with "LUNLIST". 2. File systems and LUNs/LUN snapshots cannot coexist in one SmartQoS policy.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 230: SmartQoS policy
ID	Mandatory	string	SmartQoS policy ID.
NAME	Mandatory	string	SmartQoS policy name.
DESCRIPTION	Mandatory	string	Description.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 2: running 45: inactive 46: idle

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Mandatory		vStore ID. **Note:**N/A.
vstoreName	Mandatory	string(array)	vStore name. **Note:**N/A.
IOTYPE	Mandatory	string(enum)	I/O property information in a SmartQoS policy. **The value is described as follows:** 2: read and write I/Os
ENABLESTATUS	Mandatory	string(bool)	Status. **The value is described as follows:** false: inactive true: active
LUNLIST	Mandatory	string(array)	List of LUN IDs in a SmartQoS policy.
MAXBANDWIDTH	Conditional	string(uint32)	Maximum bandwidth of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
MAXIOPS	Conditional	string(uint32)	Maximum IOPS of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
PRIORITY	Mandatory	string(enum)	Priority of a SmartQoS policy. **The value is described as follows:** When the priority of a SmartQoS policy is set to high, the performance objective of the SmartQoS policy is ensured first. The default value is normal. 0: normal 1: high
SCHEDULEPOLICY	Mandatory	string(enum)	Scheduling policy. **The value is described as follows:** The default value is 2. 0: once 1: daily 2: weekly
SCHEDULESTARTTIME	Mandatory	string(uint64)	Date for SmartQoS policy settings to take effect. **The value is described as follows:** The hour, minute, and second are ignored, and only the values of the year, month, and day are effective (UTC time).

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	string	Time for SmartQoS policy settings to take effect. **The value is described as follows:** The time is returned in the hh:mm format.
DURATION	Mandatory	string(uint32)	Validity period of SmartQoS policy settings. **The value is described as follows:** The value is smaller than 24 hours.
CYCLESET	Mandatory	array	Cycle period of a SmartQoS policy. **The value is described as follows:** The value is an int array. The cycle period is expressed in days when SCHEDULEPOLICY is set to weekly. 0 to 6 map to Sunday to Saturday.
CLASSTYPE	Mandatory	string	SmartQoS policy control type. **The value is described as follows:** 1: controls the upper limit of I/Os.
POLICYTYPE	Mandatory	string(enum)	Policy type. **The value is described as follows:** 0: normal 1: hierarchical

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Parameter	Mandatory/ Conditional	Type	Description
PARENTPOLICYID	Conditional	string(uint32)	Parent policy ID. **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.
PARENTPOLICYNAME	Conditional	string	Parent policy name. **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.
POLICYLIST	Conditional	string(array)	List of normal SmartQoS policy IDs in a SmartQoS policy. **Note:**This parameter is returned only when the policy type of a SmartQoS policy is hierarchical.
ASSOCIATEOBJIDLIST	Mandatory	array	ID list of objects specified by the SmartQoS policy. **Note:**LUN ID, file system ID, LUN group ID, host ID, or QoS policy ID.
BURSTBANDWIDTH	Conditional		Maximum burst bandwidth. **The value is described as follows:** 1..999999999
BURSTIOPS	Conditional		Maximum burst IOPS. **The value is described as follows:** 100..999999999
BURSTTIME	Conditional		Burst time. **The value is described as follows:** 1..999999999
HOSTLIST	Mandatory		List of host IDs in a SmartQoS policy.

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Parameter	Mandatory/ Conditional	Type	Description
MINBANDWIDTH	Conditional	string(uint32)	Minimum bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.
MINIOPS	Conditional	string(uint32)	Minimum IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
LATENCY	Conditional	string(uint32)	I/O latency. **The value is described as follows:** The value can be "500" or "1500". **Unit:**μs **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
FSLIST	Mandatory	array	List of file system IDs in a SmartQoS policy. **The value is described as follows:** 1. This field contains a maximum of 512 file system IDs and is mutually exclusive with "LUNLIST". 2. File systems and LUNs/LUN snapshots cannot coexist in one SmartQoS policy.

Example

- Creating a SmartQoS policy.

```
Request: POST /deviceManager/rest/210235843710E7000007/ioclass
{
   "IOTYPE": "2",
   "CLASSTYPE": "1",
   "MAXBANDWIDTH": 110,
   "TYPE": 230,
   "NAME": "SmartQoS009",
   "DESCRIPTION": "",
   "POLICYTYPE": 0,
   "LUNLIST": [],
   "SCHEDULEPOLICY": 1,
   "SCHEDULESTARTTIME": 1490371200,
   "STARTTIME": "08:00",
   "DURATION": 86400,
   "CYCLESET": [],
   "vstoreId":"1"
}

Response: {
   "data": {
      "ASSOCIATEOBJIDLIST": "[\"\"]",
      "CLASSTYPE": "1",
      "CYCLESET": "[]",
      "DESCRIPTION": "",
      "DURATION": "86400",
      "ENABLESTATUS": "false",
      "FSLIST": "[\"\"]",
      "HEALTHSTATUS": "1",
      "HOSTLIST": "[\"\"]",
      "ID": "1",
      "IOTYPE": "2",
      "LUNLIST": "[\"\"]",
      "MAXBANDWIDTH": "110",
      "NAME": "SmartQoS009",
      "PARENTPOLICYID": "-1",
      "PARENTPOLICYNAME": "",
      "POLICYTYPE": "0",
      "PRIORITY": "0",
      "RUNNINGSTATUS": "45",
      "SCHEDULEPOLICY": "1",
```

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```
        "SCHEDULESTARTTIME": "1490400000",
        "STARTTIME": "08:00",
        "TYPE": 230,
        "vstoreId": "1",
        "vstoreName": "test"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.10.1.1.2 Interface for Creating SmartQoS Policy Association

Function

This interface is used to create SmartQoS policy association.

HighRisk

You are about to add LUN groups to the SmartQoS policy. This operation may affect the performance of objects in the SmartQoS policy. Suggestion: Before performing this operation, ensure that the preceding risk is acceptable and the selected SmartQoS policy and LUN group are correct.
You are about to add hosts to the SmartQoS policy. This operation may affect the performance of objects in the SmartQoS policy. Suggestion: Before performing this operation, ensure that the preceding risk is acceptable and the selected SmartQoS policy and hosts are correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/create_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Policy ID. **The value is described as follows:** 0~8191

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJIDLIST	Mandatory	array	Associated object ID list. **The value is described as follows:** -
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the associated object. **The value is described as follows:** 230: SmartQoS policy 256: LUN group 21: host
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

N/A

Example

- Creating SmartQoS policy association.

```
Request: PUT /deviceManager/rest/2102350BSE10G5000092/ioclass/create_associate

{
   "ASSOCIATEOBJIDLIST": ["2","3"],
   "ASSOCIATEOBJTYPE": 230,
   "ID": "5",
   "vstoreId":"0"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.1.2 Delete

2.10.1.2.1 Interface for Deleting a SmartQoS Policy

Function

This interface is used to delete a SmartQoS policy.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Policy ID.
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

N/A

Example

- Deleting a SmartQoS policy.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/ioclass/1?vstoreId=1
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.1.2.2 Interface for Removing SmartQoS Policy Association

Function

This interface is used to remove SmartQoS policy association.

HighRisk

You are about to remove LUN groups from the SmartQoS policy. This operation may affect the performance of objects in the SmartQoS policy. Suggestion: Before performing this operation, ensure that the preceding risk is acceptable and the selected SmartQoS policy and LUN group are correct.
You are about to remove hosts from the SmartQoS policy. This operation may affect the performance of objects in the SmartQoS policy. Suggestion: Before performing this operation, ensure that the preceding risk is acceptable and the selected SmartQoS policy and hosts are correct.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/remove_associate

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Policy ID. **The value is described as follows:** 0~8191
ASSOCIATEOBJIDLIST	Mandatory	array	Associated object ID list. **The value is described as follows:** -
ASSOCIATEOBJTYPE	Mandatory	enum	Type number of the associated object. **The value is described as follows:** 230: SmartQoS policy 256: LUN group 21: host
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

N/A

Example

- Removing SmartQoS policy association.

```
Request: PUT /deviceManager/rest/2102350BSE10G5000092/ioclass/remove_associate

{
   "ASSOCIATEOBJIDLIST": ["2","3"],
   "ASSOCIATEOBJTYPE": 230,
   "ID": "5",
   "vstoreId":"0"
}

Response: {
   "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.1.3 Modify

2.10.1.3.1 Interface for Modifying a SmartQoS Policy

Function

This interface is used to modify a SmartQoS policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Policy ID. **The value is described as follows:** -
NAME	Optional	string	Name. **The value is described as follows:** The value contains 1 to 31 letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~31
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
LUNLIST	Optional	array	List of LUN IDs in a SmartQoS policy. **The value is described as follows:** -
MAXBANDWIDTH	Optional	uint32	Maximum bandwidth of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s.
MAXIOPS	Optional	uint32	Maximum IOPS of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999.
PRIORITY	Optional	enum	Priority of a SmartQoS policy. **The value is described as follows:** 0: normal 1: high **Default:**0: normal
SCHEDULEPOLICY	Optional	enum	Scheduling policy. **The value is described as follows:** 0: once 1: daily 2: weekly **Default:**2: weekly

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Parameter	Mandatory/Optional/Conditional	Type	Description
SCHEDULESTARTTIME	Optional	uint64	Date for SmartQoS policy settings to take effect. **The value is described as follows:** The hour, minute, and second are ignored, and only the values of the year, month, and day are effective.
STARTTIME	Optional	string	Time for SmartQoS policy settings to take effect. **The value is described as follows:** The time is returned in the hh:mm format.
DURATION	Optional	uint32	Validity period of SmartQoS policy settings. **The value is described as follows:** The value is smaller than 24 hours.
CYCLESET	Optional	array	Cycle period of a SmartQoS policy. **The value is described as follows:** The value is an integer array. The cycle period is expressed in days when SCHEDULEPOLICY is set to weekly. 0 to 6 map to Sunday to Saturday.
BURSTBANDWIDTH	Optional	uint32	Maximum burst bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s.

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Parameter	Mandatory/Optional/Conditional	Type	Description
BURSTIOPS	Optional	uint32	Maximum burst IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999.
BURSTTIME	Optional	uint32	Burst time. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999 (unit: second).
MINBANDWIDTH	Optional	uint32	Minimum bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s.
MINIOPS	Optional	uint32	Minimum IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999.
LATENCY	Optional	uint32	I/O latency. **The value is described as follows:** The value can be "500" or "1500".
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FSLIST	Optional	array	List of file system IDs in a SmartQoS policy. **The value is described as follows:** 1. This field contains a maximum of 512 file system IDs and is mutually exclusive with "LUNLIST". 2. File systems and LUNs/LUN snapshots cannot coexist in one SmartQoS policy.

Result

N/A

Example

- Modifying a SmartQoS policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/ioclass/0
{
    "DESCRIPTION": "zxmnbcccv",
     "vstoreId":"1"
}

Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.1.4 Query

2.10.1.4.1 Interface for Batch Querying SmartQoS Policy Information

Function

This interface is used to batch query basic information about SmartQoS policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, POLICYTYPE, and PARENTPOLICYID are supported. **Note:**When PARENTPOLICYID is set to 1844674407370955 1615, no parent policy exists.
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 230: SmartQoS policy
ID	Mandatory	string	SmartQoS policy ID. **The value is described as follows:** -
NAME	Mandatory	string	Name of a SmartQoS policy. **The value is described as follows:** -
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 2: running 45: inactive 46: idle
IOTYPE	Mandatory	string(enum)	I/O property information in a SmartQoS policy. **The value is described as follows:** 2: read and write I/Os
ENABLESTATUS	Mandatory	string(bool)	Status. **The value is described as follows:** false: inactive true: active

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Parameter	Mandatory/ Conditional	Type	Description
LUNLIST	Mandatory	string(array)	List of LUN IDs in a SmartQoS policy. **The value is described as follows:** -
FSLIST	Mandatory	array	ID of a file system in a SmartQoS policy. **The value is described as follows:** -
MAXBANDWIDTH	Conditional	string(uint32)	Maximum bandwidth of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.
MAXIOPS	Conditional	string(uint32)	Maximum IOPS of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
PRIORITY	Mandatory	string(enum)	Priority of a SmartQoS policy. **The value is described as follows:** When the priority of a SmartQoS policy is set to high, the performance objective of the SmartQoS policy is ensured first. The default value is normal. 0: normal 1: high
SCHEDULEPOLICY	Mandatory	string(enum)	Scheduling policy. **The value is described as follows:** The default value is 2. 0: once 1: daily 2: weekly
SCHEDULESTARTTIME	Mandatory	string(uint64)	Date for SmartQoS policy settings to take effect. **The value is described as follows:** The hour, minute, and second are ignored, and only the values of the year, month, and day are effective (UTC time).
STARTTIME	Mandatory	string	Time for SmartQoS policy settings to take effect. **The value is described as follows:** The time is returned in the hh:mm format.

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Parameter	Mandatory/ Conditional	Type	Description
DURATION	Mandatory	string(uint32)	Validity period of SmartQoS policy settings. **The value is described as follows:** The value is smaller than 24 hours.
CYCLESET	Mandatory	array	Cycle period of a SmartQoS policy. **The value is described as follows:** The value is an integer array. The cycle period is expressed in days when SCHEDULEPOLICY is set to weekly. 0 to 6 map to Sunday to Saturday.
CLASSTYPE	Mandatory	string	SmartQoS policy control type. **The value is described as follows:** 1: controls the upper limit of I/Os.
POLICYTYPE	Mandatory	string(enum)	Policy type. **The value is described as follows:** 0: normal 1: hierarchical
PARENTPOLICYNAME	Conditional	string	Parent policy name. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTPOLICYID	Conditional	string(uint32)	Parent policy ID. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.
POLICYLIST	Conditional	string(array)	List of normal SmartQoS policy IDs in a SmartQoS policy. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is hierarchical.
ASSOCIATEOBJIDLIST	Mandatory	array	ID list of objects specified by the SmartQoS policy. **Note:**LUN ID, file system ID, LUN group ID, host ID, or QoS policy ID.
BURSTBANDWIDTH	Conditional	uint32	Maximum burst bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
BURSTIOPS	Conditional	uint32	Maximum burst IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
BURSTTIME	Conditional	uint32	Burst time. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999 (unit: second). **Unit:**seconds **Note:**This parameter is returned only when this parameter is configured during policy creation.
HOSTLIST	Mandatory	string(array)	Host ID list. **The value is described as follows:** -
MINBANDWIDTH	Conditional	string(uint32)	Minimum bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
MINIOPS	Conditional	string(uint32)	Minimum IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
LATENCY	Conditional	string(uint32)	I/O latency. **The value is described as follows:** The value can be "500" or "1500". **Unit:**μs **Note:**This parameter is returned only when this parameter is configured during policy creation.
vstoreName	Conditional	string(array)	vStore name. **Note:**N/A.
vstoreId	Conditional	string(array)	vStore ID. **Note:**N/A.

Example

- Batch querying basic information about SmartQoS policies.

```
Request: GET /deviceManager/rest/210235843910E6000009/ioclass?vstoreId=1&range=[0-100]

Response: {
   "data": [
      {
         "ASSOCIATEOBJIDLIST": "[\"\"]",
         "CLASSTYPE": "1",
         "CYCLESET": "[]",
         "DESCRIPTION": "",
         "DURATION": "86400",
         "ENABLESTATUS": "false",
         "FSLIST": "[\"\"]",
         "HEALTHSTATUS": "1",
         "HOSTLIST": "[\"\"]",
         "ID": "0",
         "IOTYPE": "2",
         "LUNLIST": "[\"\"]",
         "MAXIOPS": "1000",
         "NAME": "sm",
```

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```
            "PARENTPOLICYID": "-1",
            "PARENTPOLICYNAME": "",
            "POLICYTYPE": "0",
            "PRIORITY": "0",
            "RUNNINGSTATUS": "45",
            "SCHEDULEPOLICY": "1",
            "SCHEDULESTARTTIME": "1642636800",
            "STARTTIME": "00:00",
            "TYPE": 230,
            "vstoreId": "1",
            "vstoreName": "test"
        },
        {
            "ASSOCIATEOBJIDLIST": "[\"\"]",
            "CLASSTYPE": "1",
            "CYCLESET": "[]",
            "DESCRIPTION": "",
            "DURATION": "86400",
            "ENABLESTATUS": "false",
            "FSLIST": "[\"\"]",
            "HEALTHSTATUS": "1",
            "HOSTLIST": "[\"\"]",
            "ID": "1",
            "IOTYPE": "2",
            "LUNLIST": "[\"\"]",
            "MAXIOPS": "1000",
            "NAME": "sm1",
            "PARENTPOLICYID": "-1",
            "PARENTPOLICYNAME": "",
            "POLICYTYPE": "0",
            "PRIORITY": "0",
            "RUNNINGSTATUS": "45",
            "SCHEDULEPOLICY": "1",
            "SCHEDULESTARTTIME": "1642636800",
            "STARTTIME": "00:00",
            "TYPE": 230,
            "vstoreId": "1",
            "vstoreName": "test"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.10.1.4.2 Interface for Querying SmartQoS Policy Information

Function

This interface is used to query basic information about a SmartQoS policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Policy ID. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 230: SmartQoS policy
ID	Mandatory	string	SmartQoS policy ID. **The value is described as follows:** -
NAME	Mandatory	string	Name of a SmartQoS policy. **The value is described as follows:** -
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: normal

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 2: running 45: inactive 46: idle
IOTYPE	Mandatory	string(enum)	I/O property information in a SmartQoS policy. **The value is described as follows:** 2: read and write I/Os
ENABLESTATUS	Mandatory	string(bool)	Status. **The value is described as follows:** false: inactive true: active
LUNLIST	Mandatory	string(array)	List of LUN IDs in a SmartQoS policy. **The value is described as follows:** -
MAXBANDWIDTH	Conditional	string(uint32)	Maximum bandwidth of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.

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Parameter	Mandatory/ Conditional	Type	Description
MAXIOPS	Conditional	string(uint32)	Maximum IOPS of a SmartQoS policy. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
PRIORITY	Mandatory	string(enum)	Priority of a SmartQoS policy. **The value is described as follows:** When the priority of a SmartQoS policy is set to high, the performance objective of the SmartQoS policy is ensured first. The default value is normal. 0: normal 1: high
SCHEDULEPOLICY	Mandatory	string(enum)	Scheduling policy. **The value is described as follows:** 0: once 1: daily 2: weekly
SCHEDULESTARTTIME	Mandatory	string(uint64)	Date for SmartQoS policy settings to take effect. **The value is described as follows:** The hour, minute, and second are ignored, and only the values of the year, month, and day are effective (UTC time).

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Parameter	Mandatory/ Conditional	Type	Description
STARTTIME	Mandatory	string	Time for SmartQoS policy settings to take effect. **The value is described as follows:** The time is returned in the hh:mm format.
DURATION	Mandatory	string(uint32)	Validity period of SmartQoS policy settings. **The value is described as follows:** The value is smaller than 24 hours.
CYCLESET	Mandatory	array	Cycle period of a SmartQoS policy. **The value is described as follows:** The value is an integer array. The cycle period is expressed in days when SCHEDULEPOLICY is set to weekly. 0 to 6 map to Sunday to Saturday.
CLASSTYPE	Mandatory	string	SmartQoS policy control type. **The value is described as follows:** 1: controls the upper limit of I/Os.
POLICYTYPE	Mandatory	string(enum)	Policy type. **The value is described as follows:** 0: normal 1: hierarchical

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Parameter	Mandatory/ Conditional	Type	Description
PARENTPOLICYID	Conditional	string(uint32)	Parent policy ID. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.
PARENTPOLICYNAME	Conditional	string	Parent policy name. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is normal.
POLICYLIST	Conditional	string(array)	List of normal SmartQoS policy IDs in a SmartQoS policy. **The value is described as follows:** - **Note:**This parameter is returned only when the policy type of a SmartQoS policy is hierarchical.
ASSOCIATEOBJIDLIST	Mandatory	array	ID list of objects specified by the SmartQoS policy. **The value is described as follows:** - **Note:**LUN ID, file system ID, LUN group ID, host ID, or QoS policy ID.

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Parameter	Mandatory/ Conditional	Type	Description
BURSTBANDWIDTH	Conditional	uint32	Maximum burst bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.
BURSTIOPS	Conditional	uint32	Maximum burst IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
BURSTTIME	Conditional	uint32	Burst time. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999 (unit: second). **Unit:**seconds **Note:**This parameter is returned only when this parameter is configured during policy creation.
HOSTLIST	Mandatory	string(array)	Host ID list. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
MINBANDWIDTH	Conditional	string(uint32)	Minimum bandwidth. **The value is described as follows:** The value is an integer ranging from 1 to 999,999,999, expressed in MB/s. **Unit:**MB/s **Note:**This parameter is returned only when this parameter is configured during policy creation.
MINIOPS	Conditional	string(uint32)	Minimum IOPS. **The value is described as follows:** The value is an integer ranging from 100 to 999,999,999. **Note:**This parameter is returned only when this parameter is configured during policy creation.
LATENCY	Conditional	string(uint32)	I/O latency indicator. **The value is described as follows:** The value can be "500" or "1500". **Unit:**μs **Note:**This parameter is returned only when this parameter is configured during policy creation.
vstoreId	Conditional	string(array)	vStore ID. **Note:**N/A.
vstoreName	Conditional	string(array)	vStore name. **Note:**N/A.

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Parameter	Mandatory/ Conditional	Type	Description
FSLIST	Mandatory	array	List of file system IDs in a SmartQoS policy. **The value is described as follows:** 1. This field contains a maximum of 512 file system IDs and is mutually exclusive with "lunList". 2. File systems and LUNs/LUN snapshots cannot coexist in one SmartQoS policy.

Example

- Querying basic information about a SmartQoS policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ioclass/2?vstoreId=1

Response: {
   "data": {
      "ASSOCIATEOBJIDLIST": "[\"\"]",
      "CLASSTYPE": "1",
      "CYCLESET": "[]",
      "DESCRIPTION": "",
      "DURATION": "86400",
      "ENABLESTATUS": "true",
      "HEALTHSTATUS": "1",
      "ID": "2",
      "IOTYPE": "2",
      "LUNLIST": "[\"\"]",
      "FSLIST": "[\"\"]",
      "MAXBANDWIDTH": "124",
      "NAME": "SmartQoS003",
      "PARENTPOLICYID": "1",
      "PARENTPOLICYNAME": "SmartQoS002",
      "POLICYTYPE": "0",
      "PRIORITY": "0",
      "RUNNINGSTATUS": "2",
      "SCHEDULEPOLICY": "1",
      "SCHEDULESTARTTIME": "1490140800",
      "STARTTIME": "08:00",
      "TYPE": 230,
      "HOSTLIST": "[\"0\"]",
      "vstoreId": "1",
      "vstoreName": "vstore_1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.10.1.4.3 Interface for Querying the Normalized IO Ratio in SmartQoS Policies

Function

Query the ratio of I/O sizes converted by SmartQoS to standard I/O sizes (8 KB).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QOS_IOCLASS_GLOBAL_CONFIG

Access Method

GET

Parameters

N/A

Result

N/A

Example

- Query the ratio of I/O sizes converted by SmartQoS to standard I/O sizes (8 KB).

```
Request: GET /deviceManager/rest/2102353QQR10L4000004/QOS_IOCLASS_GLOBAL_CONFIG

Response: {
    "data": {
        "NORMALIZEDIOFORMULA": "{\"IoSize(KB(s))\":\"Formula value(Part per million(s))
\",\"8\":\"1000000\",\"16\":\"850000\",\"32\":\"680000\",\"64\":\"450000\",\"128\":\"225000\",\"256\":\
"112500\",\"512\":\"56250\",\"1024\":\"28125\",\"2048\":\"14063\"}",
        "NORMALIZEDIOSIZE": "8",
        "TYPE": 57403
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.1.4.4 Interface for Querying the Number of SmartQoS Policies

Function

This interface is used to query the number of SmartQoS policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, POLICYTYPE, and PARENTPOLICYID are supported. **Note:**When PARENTPOLICYID is set to 18446744073709551615, it indicates that no parent policy exists.
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried SmartQoS policies.

Example

- Querying the number of SmartQoS policies.

```
Request: GET /deviceManager/rest/210235843910E6000009/ioclass/count?vstoreId=1
Response:
{
    "data": {
        "COUNT": "10"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.1.5 Others

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2.10.1.5.1 Interface for Activating a SmartQoS Policy

Function

This interface is used to activate a SmartQoS policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/active

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Policy ID.
ENABLESTATUS	Mandatory	bool	Activation status. **The value is described as follows:** true: activated
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

N/A

Example

- Activating a SmartQoS policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/ioclass/active
{
    "ID": 0,
    "ENABLESTATUS": true,
    "vstoreId":1
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.10.1.5.2 Interface for Deactivating a SmartQoS Policy

Function

This interface is used to deactivate a SmartQoS policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ioclass/active

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Policy ID.
ENABLESTATUS	Mandatory	bool	Activation status. **The value is described as follows:** false: deactivated
vstoreId	Conditional	string	vStore ID. **Note:**N/A.

Result

N/A

Example

- Deactivating a SmartQoS policy.

```
Request: PUT /deviceManager/rest/210235843710E7000007/ioclass/active
{
    "ID": 0,
    "ENABLESTATUS": false,
    "vstoreId":1
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2 smart_migration

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2.10.2.1 Add

2.10.2.1.1 Interface for Creating a SmartMigration Task

Function

This interface is used to create a SmartMigration task.

HighRisk

You are about to create a migration relationship between the source LUN and target LUN.

Migration starts immediately after the relationship is established, and the data on the target LUN will be overwritten by that on the source LUN after the migration.

If you perform synchronization at the highest speed, the service load may be too heavy, SmartMigration pairs may be disconnected, and host performance may be affected.

Suggestion:

1. Before performing this operation, ensure that the selected source LUN and target LUN are correct and the target LUN is not being read or written by hosts. If the capacity of the target LUN is larger than that of the source LUN, scan for the source LUN again after the migration is complete.

2. Select the high speed. If you select the highest speed, check the performance of the data receiving device and services running on the host.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	Source LUN ID. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
TARGETLUNID	Mandatory	string	Target LUN ID. **The value is described as follows:** - **Note:**The target LUN and source LUN of OceanStor Dorado V300R001C20 must belong to the same storage pool.
SPEED	Conditional	enum	Migration rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**"SPEED" and "maxBandwidth" must be delivered, but cannot be delivered at the same time.
maxBandwidth	Conditional	uint32	Maximum bandwidth. **The value is described as follows:** 1..1024 **Note:**"SPEED" and "maxBandwidth" must be delivered, but cannot be delivered at the same time.
WORKMODE	Mandatory	enum	Working mode. **The value is described as follows:** 0: automatic 1: manual

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Parameter	Mandatory/Optional/Conditional	Type	Description
PERIODSPEED	Optional	enum	Migration rate in a specified period. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
periodMaxBandwidth	Optional	uint32	Maximum bandwidth of a specified period. **The value is described as follows:** 1..1024
PERIODSTARTDAY	Conditional	string	Start day of a specified period. **The value is described as follows:** "yyyy-mm-dd" **Length:**11 **Note:**If PERIODSPEED is delivered, this field must be delivered. The format is "yyyy-mm-dd".
PERIODENDDAY	Conditional	string	End day of a specified period. **The value is described as follows:** "yyyy-mm-dd" **Length:**11 **Note:**If PERIODSPEED is delivered, this field must be delivered. The format is "yyyy-mm-dd".
PERIODSTARTTIME	Conditional	uint32	Start time of a specified period. **The value is described as follows:** 0..86340 **Note:**If PERIODSPEED is delivered, this field must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PERIODDURATIONTIME	Conditional	uint32	Duration of a specified period. **The value is described as follows:** 0..86340 **Note:**If PERIODSPEED is delivered, this field must be delivered.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 253: LUN migration
ID	Mandatory	string	Specifies the migration object ID. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Operating status. **The value is described as follows:** 1: normal 34: interrupted 37: queuing 74: migration fault 75: migrating 76: migration completed
PARENTID	Mandatory	string	Source LUN ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Source LUN name. **The value is described as follows:** -
PROCESS	Mandatory	string(uint32)	Task progress. **The value is described as follows:** The value ranges from 0 to 100. **Note:**If the migration is complete, -1 is returned.
STARTTIME	Mandatory	string(uint64)	Start time for a task. **The value is described as follows:** -
ENDTIME	Mandatory	string(uint64)	End time for a task. **The value is described as follows:** - **Note:**If the migration is not complete, -1 is returned.
TARGETLUNID	Mandatory	string	Target LUN ID. **The value is described as follows:** -
TARGETLUNNAME	Mandatory	string	Target LUN name. **The value is described as follows:** -
SPEED	Mandatory	string(enum)	Migration rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
WORKMODE	Mandatory	string(enum)	Working mode. **The value is described as follows:** 0: automatic 1: manual
vstoreId	Mandatory	string	vStore ID.
vstoreName	Mandatory	string	vStore name.

Example

- Creating a SmartMigration task.

```
Request: POST /deviceManager/rest/210235843910E6000009/lun_migration
{
   "PARENTID": "146",
   "TARGETLUNID": "147",
   "SPEED": "1",
   "WORKMODE": "0"
}

Response: {
   "data": {
      "ENDTIME": "-1",
      "HEALTHSTATUS": "1",
      "ID": "11",
      "PARENTID": "11",
      "PARENTNAME": "LUN012",
      "PERIODDURATIONTIME": "-1",
      "PERIODENDDAY": "--",
      "PERIODSPEED": "-1",
      "PERIODSTARTDAY": "--",
      "PERIODSTARTTIME": "-1",
      "PROCESS": "0",
      "RUNNINGSTATUS": "75",
      "SPEED": "1",
      "STARTTIME": "1645703219",
      "TARGETLUNID": "12",
      "TARGETLUNNAME": "LUN013",
      "TYPE": 253,
      "WORKMODE": "0",
      "WORKSPEED": "2",
      "maxBandwidth": "-1",
      "periodMaxBandwidth": "-1",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.2.2 Delete

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2.10.2.2.1 Interface for Deleting a SmartMigration Task

Function

This interface is used to delete a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a SmartMigration task.

Result

N/A

Example

- Deleting the SmartMigration task whose ID is 80.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/lun_migration/80
response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.3 Modify

2.10.2.3.1 Interface for Modifying SmartMigration Task Information

Function

This interface is used to modify SmartMigration task information.

HighRisk

You are about to select the "Highest" speed for synchronization. After the operation, a SmartMigration pair will be synchronized at the highest speed, which

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may cause overloaded services, disconnection of the SmartMigration pair, and deteriorated host performance. Suggestion: Select the "High" speed. If you select the "Highest" speed, check the performance of the data receiving end and host services to prevent the disconnection of the SmartMigration pair during synchronization and to ensure host performance.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Specifies the migration object ID. **The value is described as follows:** -
SPEED	Optional	enum	Migration rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**If WORKMODE is not delivered, this field must be delivered.
maxBandwidth	Optional	uint32	Maximum bandwidth. **The value is described as follows:** 1..1024
WORKMODE	Conditional	enum	Working mode. **The value is described as follows:** 0: automatic 1: manual **Note:**If SPEED is not delivered, this field must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PERIODSPEED	Optional	enum	Migration rate in a specified period. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**If SPEED or WORKMODE is not delivered, this field must be delivered.
periodMaxBandwidth	Optional	uint32	Maximum bandwidth of a specified period. **The value is described as follows:** 1..1024
PERIODSTARTDAY	Conditional	string	Start day of a specified period. **The value is described as follows:** - **Note:**If PERIODSPEED is delivered, this field must be delivered. The format is "yyyy-mm-dd".
PERIODENDDAY	Conditional	string	End day of a specified period. **The value is described as follows:** - **Note:**If PERIODSPEED is delivered, this field must be delivered. The format is "yyyy-mm-dd".

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Parameter	Mandatory/Optional/Conditional	Type	Description
PERIODSTARTTIME	Conditional	uint32	Start time of a specified period. **The value is described as follows:** 0..86340 **Note:**If PERIODSPEED is delivered, this field must be delivered.
PERIODDURATIONTIME	Conditional	uint32	Duration of a specified period. **The value is described as follows:** 0..86340 **Note:**If PERIODSPEED is delivered, this field must be delivered.

Result

N/A

Example

- Modifying the SmartMigration task whose ID is 18.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lun_migration/18
{
    "WORKMODE": "1"
}
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.4 Query

2.10.2.4.1 Interface for Batch Querying SmartMigration Task Information

Function

This interface is used to batch query basic information about SmartMigration tasks.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Conditional	string	Query criteria. **The value is described as follows:** Parameters PARENTID, PARENTNAME, TARGETLUNID, TARGETLUNNAME, and RUNNINGSTATUS are supported. **Note:**At least one of parameters "filter" and "range" is delivered.
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:** At least one of parameters "filter" and "range" is delivered. A maximum of 10000 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 253: LUN migration
ID	Mandatory	string	Specifies the migration object ID. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal 34: interrupted 37: queuing 41: paused 74: migration fault 75: migrating 76: migration completed
PARENTID	Mandatory	string	Source LUN ID. **The value is described as follows:** -
PARENTNAME	Mandatory	string	Source LUN name. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PROCESS	Mandatory	string(uint32)	Task progress. **The value is described as follows:** The value ranges from -1 to 100.
STARTTIME	Mandatory	string(uint64)	Start time for a task. The local time is returned by default. **The value is described as follows:** -
ENDTIME	Mandatory	string(uint64)	End time for a task. The local time is returned by default. **The value is described as follows:** -
TARGETLUNID	Mandatory	string	Target LUN ID. **The value is described as follows:** -
TARGETLUNNAME	Mandatory	string	Target LUN name. **The value is described as follows:** -
SPEED	Mandatory	string(enum)	Migration rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
maxBandwidth	Mandatory	uint32	Maximum bandwidth. **The value is described as follows:** 1..1024
WORKMODE	Mandatory	string(enum)	Working mode. **The value is described as follows:** 0: automatic 1: manual

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Parameter	Mandatory/ Conditional	Type	Description
PERIODSPEED	Mandatory	enum	Migration rate in a specified period. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
periodMaxBandwidth	Mandatory	uint32	Maximum bandwidth of a specified period. **The value is described as follows:** 1..1024
PERIODSTARTDAY	Mandatory	string	Start day of a specified period. **The value is described as follows:** "yyyy-mm-dd"
PERIODENDDAY	Mandatory	string	End day of a specified period. **The value is described as follows:** "yyyy-mm-dd"
PERIODSTARTTIME	Mandatory	uint32	Start time of a specified period. **The value is described as follows:** 0..86340
PERIODDURATIONTIME	Mandatory	uint32	Duration of a specified period. **The value is described as follows:** 0..86340
WORKSPEED	Mandatory	enum	Working speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Batch querying basic information about SmartMigration tasks.

```
Request: GET /deviceManager/rest/2102351LWG10HB000006/lun_migration?
range=[0-100]&filter=PARENTNAME:LUN00

Response: {
   "data": [
      {
         "ENDTIME": "1645650856",
         "ID": "6",
         "PARENTID": "6",
         "PARENTNAME": "LUN007",
         "PERIODDURATIONTIME": "-1",
         "PERIODENDDAY": "--",
         "PERIODSPEED": "-1",
         "PERIODSTARTDAY": "--",
         "PERIODSTARTTIME": "-1",
         "PROCESS": "-1",
         "RUNNINGSTATUS": "76",
         "SPEED": "2",
         "STARTTIME": "1645650856",
         "TARGETLUNID": "7",
         "TARGETLUNNAME": "MT_LUN0080001",
         "TYPE": 253,
         "WORKMODE": "0",
         "WORKSPEED": "-1",
         "maxBandwidth": "-1",
         "periodMaxBandwidth": "0",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "ENDTIME": "1645650949",
         "ID": "8",
         "PARENTID": "8",
         "PARENTNAME": "LUN009",
         "PERIODDURATIONTIME": "1800",
         "PERIODENDDAY": "2022-02-23",
         "PERIODSPEED": "2",
         "PERIODSTARTDAY": "2022-02-23",
         "PERIODSTARTTIME": "77400",
         "PROCESS": "-1",
         "RUNNINGSTATUS": "76",
         "SPEED": "2",
         "STARTTIME": "1645650948",
         "TARGETLUNID": "10",
         "TARGETLUNNAME": "MT_LUN0110001",
         "TYPE": 253,
```

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```
            "WORKMODE": "0",
            "WORKSPEED": "-1",
            "maxBandwidth": "-1",
            "periodMaxBandwidth": "-1",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Batch querying basic information about SmartMigration tasks. The UTC time is returned.

```
Request: GET /deviceManager/rest/2102351LWG10HB000006/lun_migration?
range=[0-100]&filter=PARENTNAME:LUN00&timeConversion=0

Response: {
    "data": [
        {
            "ENDTIME": "1645622056",
            "ID": "6",
            "PARENTID": "6",
            "PARENTNAME": "LUN007",
            "PERIODDURATIONTIME": "-1",
            "PERIODENDDAY": "--",
            "PERIODSPEED": "-1",
            "PERIODSTARTDAY": "--",
            "PERIODSTARTTIME": "-1",
            "PROCESS": "-1",
            "RUNNINGSTATUS": "76",
            "SPEED": "2",
            "STARTTIME": "1645622056",
            "TARGETLUNID": "7",
            "TARGETLUNNAME": "MT_LUN0080001",
            "TYPE": 253,
            "WORKMODE": "0",
            "WORKSPEED": "-1",
            "maxBandwidth": "-1",
            "periodMaxBandwidth": "0",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        },
        {
            "ENDTIME": "1645622149",
            "ID": "8",
            "PARENTID": "8",
            "PARENTNAME": "LUN009",
            "PERIODDURATIONTIME": "1800",
            "PERIODENDDAY": "2022-02-23",
            "PERIODSPEED": "2",
            "PERIODSTARTDAY": "2022-02-23",
            "PERIODSTARTTIME": "77400",
            "PROCESS": "-1",
            "RUNNINGSTATUS": "76",
            "SPEED": "2",
            "STARTTIME": "1645622148",
            "TARGETLUNID": "10",
            "TARGETLUNNAME": "MT_LUN0110001",
            "TYPE": 253,
            "WORKMODE": "0",
            "WORKSPEED": "-1",
            "maxBandwidth": "-1",
            "periodMaxBandwidth": "-1",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
```

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```
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.4.2 Interface for Querying SmartMigration Task Information

Function

This interface is used to query basic information about a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of a SmartMigration task.
timeConversion	Optional	uint32	Time conversion. **The value is described as follows:** 0: UTC 1: local time **Default:**1

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 253: LUN migration
ID	Mandatory	string	SmartMigration ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal 34: interrupted 37: queuing 74: migration fault 75: migrating 76: migration completed
PARENTID	Mandatory	string	Source LUN ID. **The value is described as follows:** -
PARENTNAME	Mandatory	string	Source LUN name. **The value is described as follows:** -
PROCESS	Mandatory	string(uint32)	Task progress. **The value is described as follows:** The value ranges from 0 to 100.
STARTTIME	Mandatory	string(uint64)	Start time for a task. The local time is returned by default. **The value is described as follows:** -
ENDTIME	Mandatory	string(uint64)	End time for a task. The local time is returned by default. **The value is described as follows:** -
TARGETLUNID	Mandatory	string	Target LUN ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
TARGETLUNNAME	Mandatory	string	Target LUN name. **The value is described as follows:** -
SPEED	Mandatory	string(enum)	Migration rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
maxBandwidth	Mandatory	uint32	Maximum bandwidth. **The value is described as follows:** 1..1024
WORKMODE	Mandatory	string(enum)	Working mode. **The value is described as follows:** 0: automatic 1: manual
PERIODSPEED	Mandatory	enum	Migration speed in a specified period. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
periodMaxBandwidth	Mandatory	uint32	Maximum bandwidth of a specified period. **The value is described as follows:** 1..1024
PERIODSTARTDAY	Mandatory	string	Specifies the start day of a specified period. **The value is described as follows:** "yyyy-mm-dd"

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Parameter	Mandatory/ Conditional	Type	Description
PERIODENDDAY	Mandatory	string	Specifies the end day of a specified period. **The value is described as follows:** "yyyy-mm-dd"
PERIODSTARTTIME	Mandatory	uint32	Specifies the start time of a specified period. **The value is described as follows:** 0..86340 **Unit:**seconds
PERIODDURATIONTIME	Mandatory	uint32	Specifies the duration of a specified period. **The value is described as follows:** 0..86340 **Unit:**seconds
WORKSPEED	Mandatory	enum	Actual migration speed. **The value is described as follows:** 1: low 2: medium 3: high 4: highest

Example

- Querying basic information about the SmartMigration task whose ID is 828.

```
Request: GET /deviceManager/rest/210235843910E6000009/lun_migration/18

Response: {
   "data": {
      "ENDTIME": "-1",
      "HEALTHSTATUS": "1",
      "ID": "828",
      "PARENTID": "828",
      "PARENTNAME": "LM0000",
      "PERIODDURATIONTIME": "-1",
      "PERIODENDDAY": "--",
      "PERIODSPEED": "-1",
      "PERIODSTARTDAY": "--",
      "PERIODSTARTTIME": "-1",
      "PROCESS": "-1",
      "RUNNINGSTATUS": "1",
      "SPEED": "2",
      "STARTTIME": "1583269462",
      "TARGETLUNID": "956",
```

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```
        "TARGETLUNNAME": "MT_LUN9570001",
        "TYPE": 253,
        "WORKMODE": "1",
        "WORKSPEED": "-1",
        "maxBandwidth": "-1",
        "periodMaxBandwidth": "-1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying basic information about the SmartMigration task whose ID is 828. The UTC time is returned.

```
Request: GET /deviceManager/rest/210235843910E6000009/lun_migration/18?timeConversion=0

Response: {
    "data": {
        "ENDTIME": "-1",
        "HEALTHSTATUS": "1",
        "ID": "828",
        "PARENTID": "828",
        "PARENTNAME": "LM0000",
        "PERIODDURATIONTIME": "-1",
        "PERIODENDDAY": "--",
        "PERIODSPEED": "-1",
        "PERIODSTARTDAY": "--",
        "PERIODSTARTTIME": "-1",
        "PROCESS": "-1",
        "RUNNINGSTATUS": "1",
        "SPEED": "2",
        "STARTTIME": "1583269462",
        "TARGETLUNID": "956",
        "TARGETLUNNAME": "MT_LUN9570001",
        "TYPE": 253,
        "WORKMODE": "1",
        "WORKSPEED": "-1",
        "maxBandwidth": "-1",
        "periodMaxBandwidth": "-1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.4.3 Interface for Querying the Number of SmartMigration Tasks

Function

This interface is used to query the number of SmartMigration tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Parameters PARENTID, PARENTNAME, TARGETLUNID, and TARGETLUNNAME are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried SmartMigration.

Example

- Querying the number of SmartMigration tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/lun_migration/count
Response:
{
    "data": {
        "COUNT": "1",
        "TYPE": 253
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.5 Others

2.10.2.5.1 Interface for Consistently Splitting a SmartMigration Task

Function

This interface is used to consistently split a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/split_multi_lunmigration

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PAIRID	Mandatory	string	Source LUN ID. Use commas (,) to separate multiple LUN IDs from one other.

Result

N/A

Example

- Consistently split a SmartMigration task.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lun_migration/split_multi_lunmigration
{
    "PAIRID": "80,90"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.5.2 Interface for Pausing a SmartMigration Task

Function

This interface is used to pause a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/pause_lunmigration

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	SmartMigration task ID.

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Result

N/A

Example

- Pausing the SmartMigration task whose ID is 80.

```
Request: PUT/deviceManager/rest/210235843910E6000009/lun_migration/pause_lunmigration
{
   "ID": "80"
}
response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.2.5.3 Interface for Splitting a SmartMigration Task

Function

This interface is used to split a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/split_multi_lunmigration

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PAIRID	Mandatory	string	Source LUN ID.

Result

N/A

Example

- Split a SmartMigration task.

```
Request: PUT/deviceManager/rest/210235843910E6000009/lun_migration/split_multi_lunmigration
{
   "PAIRID": "80"
}
Response: {
   "data": {},
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.10.2.5.4 Interface for Synchronizing a SmartMigration Task

Function

This interface is used to synchronize a SmartMigration task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/lun_migration/sync_lunmigration

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	SmartMigration task ID.

Result

N/A

Example

- Synchronizing the SmartMigration task whose ID is 80.

```
Request: PUT /deviceManager/rest/210235843910E6000009/lun_migration/sync_lunmigration
{
  "ID": "80"
}

Response: {
  "data": {

  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.10.3 smart_cache

2.10.3.1 Add

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2.10.3.1.1 Interface for Adding Disks to a SmartCache Pool

Function

This interface is used to add disks to a SmartCache pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
type	Optional	enum	SmartCache pool type. **Note:**This field is optional in the RESTful API request. If it is not delivered, the default value 218 is used.
id	Conditional	string	SmartCache pool ID. **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.
associateObjIDList	Mandatory	array	ID list of associated disks. **Unit:**String
diskNum	Optional	int32	Number of member disks.

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Result

N/A

Example

- Adding specified disks to a SmartCache pool by ID.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePool
{
        "associateObjIDList": ["134217750"],
        "id":"1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Adding specified disks to a SmartCache pool by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePool
{
        "associateObjIDList": ["134217729"],
        "nameIndex":"newsmartcache"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.1.2 Interface for Creating a SmartCache Partition

Function

This interface is used to create a SmartCache partition.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255
smartCachePoolName	Conditional	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**At least one of the SmartCache pool name and SmartCache pool ID must be specified.
smartCachePoolId	Conditional	string	SmartCache pool ID. **The value is described as follows:** 1 to 16 **Note:**At least one of the SmartCache pool name and SmartCache pool ID must be specified.

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Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	SmartCache partition ID. **The value is described as follows:** 1 to 16
name	Mandatory	string	SmartCache partition name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).

Example

- Creating a SmartCache partition on the SmartCache pool named "sc".

```
Request: POST /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
   "name": "partiton",
   "smartCachePoolName": "sc"
}

Response: {
   "data": {
      "id": "1",
      "name": "partiton"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Creating a SmartCache partition on SmartCache pool "4".

```
Request: POST /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
   "name": "partiton",
   "smartCachePoolId": "4"
}

Response: {
   "data": {
      "id": "1",
      "name": "partiton"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.10.3.1.3 Interface for Creating a SmartCache Partition Association

Function

This interface is used to create SmartCache partition association.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition/CREATE_ASSOCIATE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache partition ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value contains only letters, digits, underscores (_). **Length:**255 **Note:**At least one of the associated object name and associated object ID must be specified.
associateObjID	Conditional	string	Associated object ID. **Note:**At least one of the associated object name and associated object ID must be specified.
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN; 40: file system
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0 to 1023.

Result

N/A

Example

- Adding a specified LUN to a SmartCache partition by ID.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/CREATE_ASSOCIATE
{
   "id": "6",
      "associateObjType": "11",
      "associateObjID": "1"
}

Response: {
   "data": {

   },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a specified LUN to a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/CREATE_ASSOCIATE
{
    "nameIndex": "scpa1",
        "associateObjType": "11",
        "associateObjName": "lun1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a specified file system to a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/CREATE_ASSOCIATE
{
    "id": "1",
        "associateObjType": "40",
        "associateObjName": "fs1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Adding a specified file system for the specified vStore to a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/CREATE_ASSOCIATE
{
    "id": "1",
        "associateObjType": "40",
        "associateObjName": "fs1",
        "vstoreId": "1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.3.1.4 Interface for Creating a SmartCache Pool

Function

This interface is used to create a SmartCache pool.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjIDList	Mandatory	array	ID list of associated disks.
allEngineDiskInfo	Optional	json	Information about all controller enclosure disks.
diskNum	Optional	int32	Number of member disks.
tier0DiskType	Optional	enum	Types of SCM drives supported by the high-performance tier. **The value is described as follows:** 3: SSD 10: SSD_SED 14: NVMe_SSD 16: NVMe_SSD_SED
engineIdList	Optional	array	Controller enclosure ID list.
ownerControllerList	Optional	array	ID list of owning controllers.
engineInfo	Optional	json	Disk information on the controller enclosure.
currentDiskInfo	Optional	json	Information about the current disk.
diskNumList	Optional	array	Disk quantity list.
diskCapacityList	Optional	array	Disk capacity list.

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Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**255
id	Optional	string	SmartCache pool ID. **The value is described as follows:** The value is an integer ranging from 1 to 16.
type	Optional	enum	SmartCache pool type. **Note:**This field is optional in the RESTful API request. If it is not delivered, the default value 218 is used.
description	Optional	string	Description of the SmartCache pool. **The value is described as follows:** - **Length:**255

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16.
associateObjIDList	Mandatory	array	ID list of associated disks.
diskNum	Mandatory	int32	Number of member disks.

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Parameter	Mandatory/ Conditional	Type	Description
associateObjID	Mandatory	string	Associated object ID.
smartCacheSwitch	Mandatory	bool	Whether the SmartCache pool is enabled. **The value is described as follows:** 1: open 0: close
name	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
description	Mandatory	string	Description of the SmartCache pool. **The value is described as follows:** -

Example

- Creating a SmartCache pool.

```
Request: POST /deviceManager/rest/210235843710E7000007/SmartCachePool
{
        "associateObjIDList": ["134217729","134217730"],
        "name":"newsmartcache"
}

Response: {
    "data": {
        "associateObjIDList": "[\"134217729\",\"134217730\"]",
        "name": "newsmartcache",
        "id": "1",
        "description": "",
        "associateObjID": "[\"134217730\", \"134217729\"]",
        "smartCacheSwitch": "1",
        "diskNum": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Creating a SmartCache pool with an ID.

```
Request: POST /deviceManager/rest/210235843710E7000007/SmartCachePool
{
```

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```
        "associateObjIDList": ["134217729","134217730"],
        "name":"newsmartcache",
        "id":4
}

Response: {
    "data": {
        "associateObjIDList": "[\"134217729\",\"134217730\"]",
        "id": "4",
        "name": "newsmartcache",
        "description": "",
        "associateObjID": "[\"134217730\", \"134217729\"]",
        "smartCacheSwitch": "1",
        "diskNum": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Creating a SmartCache pool with description.

```
Request: POST /deviceManager/rest/210235843710E7000007/SmartCachePool
{
        "associateObjIDList": ["134234112","134234113"],
        "name":"newsmartcache",
        "description":"smart cache pool"
}

Response: {
    "data": {
        "associateObjIDList": "[\"134234112\",\"134234113\"]",
        "description": "smart cache pool",
        "name": "newsmartcache",
        "id": "4",
        "associateObjID": "[\"134234113\", \"134234112\"]",
        "smartCacheSwitch": "1",
        "diskNum": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.3.2 Delete

2.10.3.2.1 Interface for Deleting a SmartCache Partition

Function

This interface is used to delete a SmartCache partition.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

Result

N/A

Example

- Deleting SmartCache partition "5".

```
Request: DELETE /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
    "id": "5"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Deleting SmartCache partition "scpa1".

```
Request: DELETE /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
    "nameIndex": "scpa1"
}

Response: {
    "data": {
```

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```
  },
  "error": {
     "code": 0,
     "description": "0"
  }
}
```

2.10.3.2.2 Interface for Deleting a SmartCache Partition Association

Function

This interface is used to delete a SmartCache partition association.

HighRisk

You are about to remove file systems from a SmartCache partition. The operation cannot be undone. This operation will delete the relationship between the file systems and the SmartCache partition, and may affect performance of the file systems. Suggestion: Before performing this operation, ensure that the selected file systems are no longer necessary.
You are about to remove LUNs from a SmartCache partition. This operation cannot be undone. This operation will delete the relationship between the LUNs and the SmartCache partition, and may affect performance of the LUNs. Suggestion: Before performing this operation, ensure that the selected LUNs are no longer necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition/REMOVE_ASSOCIATE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache partition ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 11: LUN; 40: file system
associateObjID	Conditional	string	Associated object ID. **Note:**At least one of the associated object name and associated object ID must be specified.
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value contains only letters, digits, underscores (_). **Length:**255 **Note:**At least one of the associated object name and associated object ID must be specified.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0 to 1023.

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Result

N/A

Example

- Removing a specified LUN from a SmartCache partition by ID.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/
REMOVE_ASSOCIATE
{
   "id": "6",
      "associateObjType": "11",
      "associateObjID": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Removing a specified file system from a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/
REMOVE_ASSOCIATE
{
   "id": "6",
      "associateObjType": "40",
      "associateObjName": "fs1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Removing a specified LUN for the specified vStore from a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/
REMOVE_ASSOCIATE
{
   "id": "1",
      "associateObjType": "40",
      "associateObjName": "fs2",
      "vstoreId": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Removing a specified LUN from a SmartCache partition by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePartition/
REMOVE_ASSOCIATE
```

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```
{
    "nameIndex": "scpa1",
        "associateObjType": "11",
        "associateObjName": "lun1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.3.2.3 Interface for Deleting a SmartCache Pool

Function

This interface is used to delete a SmartCache pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache pool ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
type	Optional	enum	SmartCache pool type. **Note:**This field is optional in the RESTful API request. If it is not delivered, the default value 218 is used.

Result

N/A

Example

- Deleting a SmartCache pool by ID.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/SmartCachePool/1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting a SmartCache pool by name.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/SmartCachePool?nameIndex=scp1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.3 Modify

2.10.3.3.1 Interface for Modifying a SmartCache Partition Name

Function

This interface is used to modify a SmartCache partition name.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache partition ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.
name	Mandatory	string	New name of the SmartCache partition. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**Delivered as a new name.

Result

N/A

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Example

- Changing the name of SmartCache partition "6" to "scp2".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
   "id": "6",
      "name": "aaaa"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Changing the name of the SmartCache partition named "scp1" to "scp2".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePartition
{
   "nameIndex": "scp1",
      "name": "scp2"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.3.2 Interface for Modifying SmartCache Pool Information

Function

Modify the information about the SmartCache pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache pool ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.
description	Conditional	string	Description of the SmartCache pool. **The value is described as follows:** - **Length:**255 **Note:**At least either the ID or name index must be specified.
name	Conditional	string	New name of the SmartCache pool. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**At least either the ID or name index must be specified.

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Result

N/A

Example

- Changing the description of SmartCache pool "5" to "SmartCache pool information".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePool
{
       "id":"10",
       "description": "SmartCache pool information"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Changing the description of the SmartCache pool with name "scp1" to "SmartCache pool information".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePool
{
       "nameIndex":"scp1",
       "description": "SmartCache pool information"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Changing the name of SmartCache pool "5" to "scpool2".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePool
{
   "id": "5",
      "name": "scpool2"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Changing the name of the SmartCache pool with name "scpool1" to "scpool2".

```
Request: PUT /deviceManager/rest/210235982510G2000015/SmartCachePool
{
   "nameIndex": "scpool1",
      "name": "scpool2"
}
```

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```
Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.4 Query

2.10.3.4.1 Interface for Batch Querying SmartCache Partition Information

Function

This interface is used to batch query SmartCache partition information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters "id" and "name" are supported.
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.

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Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	SmartCache partition ID.
name	Mandatory	string	SmartCache partition name.
totalCapacity	Mandatory	uint64	Total capacity of the SmartCache partition. **Unit:**byte
freeCapacity	Mandatory	uint64	Free capacity of the SmartCache partition. **Unit:**byte
readHitCount	Mandatory	uint64	Number of read hits of the SmartCache partition.
readHitRatio	Mandatory	uint32	Read hit ratio of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
userConsumedCapacity	Mandatory	uint64	Used capacity of the SmartCache partition. **Unit:**sectors
userConsumedCapacityPercentage	Mandatory	uint32	Percentage of the used capacity of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
smartCachePoolName	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
smartCachePoolId	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16

Example

- Querying SmartCache partition information.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePartition

Response: {
   "data": [
      {
         "id": "2",
         "freeCapacity": "2278031360",
         "name": "newscp",
         "readHitCount": "0",
         "readHitRatio": "0",
         "smartCachePoolId": "1",
         "smartCachePoolName": "newscp",
         "totalCapacity": "2278031360",
         "userConsumedCapacity": "0",
         "userConsumedCapacityPercentage": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.4.2 Interface for Batch Querying SmartCache Pool Information

Function

This interface is used to batch query SmartCache pool information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
readHitRatio	Mandatory	uint32	Read hit ratio of the SmartCache pool. **The value is described as follows:** 0..100 **Unit:**%
readHitCount	Mandatory	uint64	Number of read hits of the SmartCache pool.
userConsumedCapacityPercentage	Mandatory	uint32	Percentage of the used capacity of the SmartCache pool. **The value is described as follows:** 0..100 **Unit:**%
userTotalCapacity	Mandatory	uint64	Total capacity of the SmartCache pool. **Unit:**Sectors
userConsumedCapacity	Mandatory	uint64	Used capacity of the SmartCache pool. **Unit:**Sectors
userFreeCapacity	Mandatory	uint64	Free capacity of the SmartCache pool. **Unit:**Sectors
id	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16
smartCacheSwitch	Mandatory	bool	Whether to enable the SmartCache pool. **The value is described as follows:** 1: open; 0: close

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Parameter	Mandatory/ Conditional	Type	Description
name	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).
type	Mandatory	enum	SmartCache pool type. **Note:**This field is optional in the RESTful API request. If it is not delivered, the default value 218 is used.
description	Mandatory	string	Description of the SmartCache pool. **The value is described as follows:** -

Example

- Querying basic information about a SmartCache pool.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePool

Response: {
   "data": [
      {
         "id": "1",
         "type": 218,
         "description": "smartcache pool",
         "name": "newsmart",
         "smartCacheSwitch": "1",
         "readHitCount": "20000",
         "readHitRatio": "90",
         "userTotalCapacity": "65536",
         "userConsumedCapacity": "10240",
         "userFreeCapacity": "55296",
         "userConsumedCapacityPercentage": "15"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.10.3.4.3 Interface for Querying Association Information about a SmartCache Partition

Function

This interface is used to query SmartCache partition information in association mode.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition?associateObjType=218&[associateObjID=?|associateObjName=?]

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 218: SmartCache pool
associateObjID	Conditional	string	Associated object ID. **Note:**At least one of the associated object name and associated object ID must be specified.
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**At least one of the associated object name and associated object ID must be specified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters "id" and "name" are supported.
range	Optional	string	Query scope. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	SmartCache partition ID. **The value is described as follows:** 1 to 16
name	Mandatory	string	SmartCache partition name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).
totalCapacity	Mandatory	uint64	Total capacity of the SmartCache partition. **Unit:**byte
freeCapacity	Mandatory	uint64	Free capacity of the SmartCache partition. **Unit:**byte

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Parameter	Mandatory/ Conditional	Type	Description
readHitCount	Mandatory	uint64	Number of read hits of the SmartCache partition.
readHitRatio	Mandatory	uint32	Read hit ratio of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
userConsumedCapacity	Mandatory	uint64	Used capacity of the SmartCache partition. **Unit:**sectors
userConsumedCapacityPercentage	Mandatory	uint32	Percentage of the used capacity of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
smartCachePoolName	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).
smartCachePoolId	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16

Example

- Querying SmartCache partition information by ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePartition?
associateObjType=218&associateObjID=4

Response: {
   "data": [
      {
         "id": "1",
         "freeCapacity": "2278031360",
         "name": "newscp",
```

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```
            "readHitCount": "0",
            "readHitRatio": "0",
            "smartCachePoolId": "4",
            "smartCachePoolName": "newscp",
            "totalCapacity": "2278031360",
            "userConsumedCapacity": "0",
            "userConsumedCapacityPercentage": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Querying SmartCache partition information by name.


```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePartition?
associateObjType=218&associateObjName=scp1

Response: {
    "data": [
        {
            "id": "1",
            "freeCapacity": "2278031360",
            "name": "newscp",
            "readHitCount": "0",
            "readHitRatio": "0",
            "smartCachePoolId": "4",
            "smartCachePoolName": "newscp",
            "totalCapacity": "2278031360",
            "userConsumedCapacity": "0",
            "userConsumedCapacityPercentage": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.10.3.4.4 Interface for Querying SmartCache Partition Information

Function

This interface is used to query SmartCache partition information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePartition

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache partition ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	SmartCache partition ID. **The value is described as follows:** 1 to 16
name	Mandatory	string	SmartCache partition name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
totalCapacity	Mandatory	uint64	Total capacity of the SmartCache partition. **Unit:**byte
freeCapacity	Mandatory	uint64	Free capacity of the SmartCache partition. **Unit:**byte
readHitCount	Mandatory	uint64	Number of read hits of the SmartCache partition.
readHitRatio	Mandatory	uint32	Read hit ratio of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
userConsumedCapacity	Mandatory	uint64	Used capacity of the SmartCache partition. **Unit:**sectors
userConsumedCapacityPercentage	Mandatory	uint32	Percentage of the used capacity of the SmartCache partition. **The value is described as follows:** 0..100 **Unit:**%
smartCachePoolName	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).
smartCachePoolId	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16

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Example

- Querying SmartCache partition information by ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePartition/2

Response: {
   "data": {
      "id": "2",
      "freeCapacity": "2278031360",
      "name": "scp",
      "readHitCount": "0",
      "readHitRatio": "0",
      "smartCachePoolId": "1",
      "smartCachePoolName": "newscp",
      "totalCapacity": "2278031360",
      "userConsumedCapacity": "0",
      "userConsumedCapacityPercentage": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Querying SmartCache partition information by name.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePartition?nameIndex=scp

Response: {
   "data": {
      "id": "2",
      "freeCapacity": "2278031360",
      "name": "scp",
      "readHitCount": "0",
      "readHitRatio": "0",
      "smartCachePoolId": "1",
      "smartCachePoolName": "newscp",
      "totalCapacity": "2278031360",
      "userConsumedCapacity": "0",
      "userConsumedCapacityPercentage": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.10.3.4.5 Interface for Querying SmartCache Pool Information

Function

This interface is used to query the basic information about a SmartCache pool.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	SmartCache pool ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

Result

Parameter	Mandatory/Conditional	Type	Description
readHitCount	Mandatory	uint64	Number of read hits of the SmartCache pool.
id	Mandatory	string	SmartCache pool ID. **The value is described as follows:** 1 to 16
readHitRatio	Mandatory	uint32	Read hit ratio of the SmartCache pool. **The value is described as follows:** 0..100 **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
userConsumedCapacityPercentage	Mandatory	uint32	Percentage of the used capacity of the SmartCache pool. **The value is described as follows:** 0..100 **Unit:**%
userTotalCapacity	Mandatory	uint64	Total capacity of the SmartCache pool. **Unit:**Sectors
userConsumedCapacity	Mandatory	uint64	Used capacity of the SmartCache pool. **Unit:**Sectors
name	Mandatory	string	SmartCache pool name. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.).
smartCacheSwitch	Mandatory	bool	Whether to enable the SmartCache pool. **The value is described as follows:** 1: open; 0: close
userFreeCapacity	Mandatory	uint64	Free capacity of the SmartCache pool. **Unit:**Sectors
description	Mandatory	string	Description of the SmartCache pool. **The value is described as follows:** -

Example

- Querying the basic information about a SmartCache pool by ID.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePool/1

Response: {
   "data": {
```

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```
        "id": "1",
        "description": "smartcache pool",
        "name": "newsmart",
        "smartCacheSwitch": "1",
        "readHitCount": "20000",
        "readHitRatio": "90",
        "userTotalCapacity": "65536",
        "userConsumedCapacity": "10240",
        "userFreeCapacity": "55296",
        "userConsumedCapacityPercentage": "15"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Querying the basic information about a SmartCache pool by name.

```
Request: GET /deviceManager/rest/210235843710E7000007/SmartCachePool?nameIndex=newsmart

Response: {
    "data": {
        "id": "1",
        "description": "smartcache pool",
        "name": "newsmart",
        "smartCacheSwitch": "1",
        "readHitCount": "20000",
        "readHitRatio": "90",
        "userTotalCapacity": "65536",
        "userConsumedCapacity": "10240",
        "userFreeCapacity": "55296",
        "userConsumedCapacityPercentage": "15"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.10.3.5 Others

2.10.3.5.1 Interface for Enabling or Disabling the SmartCache Pool

Function

This interface is used to enable or disable the SmartCache pool.

HighRisk

You are about to modify the SmartCache pool switch configuration. This operation will delete the cache data of the SmartCache pool without affecting the main memory data, and will change the original SmartCache policy.

Suggestion: Before performing this operation, read the SmartCache pool switch prompt carefully.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SmartCachePool

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
smartCacheSwitch	Mandatory	bool	Whether to enable the SmartCache pool. **The value is described as follows:** 1: open; 0: close
id	Conditional	string	SmartCache pool ID. **The value is described as follows:** 1 to 16 **Note:**At least one of "id" and "nameIndex" must be specified.
nameIndex	Conditional	string	Name index. **The value is described as follows:** The value can contain only digits, letters, hyphens (-), underscores (_), and periods (.). **Length:**255 **Note:**The name index is delivered as the name.

Result

N/A

Example

- Enabling or disabling the SmartCache pool by ID.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePool
{
    "id": "1",
    "smartCacheSwitch":"1"
}

Response: {
    "data": {

    },
```

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```
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Enabling or disabling the SmartCache pool by name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/SmartCachePool
{
    "nameIndex": "newsmartcache",
    "smartCacheSwitch":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11 File system storage service

2.11.1 file_system

2.11.1.1 Add

2.11.1.1.1 Interface for Creating a Clone File System

Function

This interface is used to create a clone file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	uint32	ID of a clone file system. **The value is described as follows:** The value is an integer between 1 and 65535. If the value is not specified, the system automatically allocates an ID to the newly created file system. **Range:**1..65535
NAME	Mandatory	string	Name of a clone file system. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Length:**1~255
DESCRIPTION	Optional	string	Description. **Length:**0~255
ALLOCTYPE	Optional	enum	Space allocation type. **The value is described as follows:** 0: thick file system 1: thin file system **Default:**1: thin file system
PARENTSNAPSHOTID	Optional	string	Parent snapshot ID.
PARENTSNAPSHOTNAME	Optional	string	Snapshot name of the parent file system. **The value is described as follows:** Name of an existing read-only snapshot. **Range:**^([A-Za-z0-9_-]{1,255})$
PARENTFILESYSTEMID	Mandatory	string	Parent file system ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTFILESYSTEM-NAME	Optional	string	Parent file system name. **The value is described as follows:** To obtain the value, run "show file_system general". **Range:**^[0-9a-zA-Z_.-]{1,255}
parentFileSystemV-storeId	Optional	uint32	vStore ID of the parent file system. **The value is described as follows:** The value ranges from 0 to 1023. To obtain the value, run the "show vstore" command without parameters. **Length:**31 **Range:**0..1023
parentFileSystemV-storeName	Optional	string	vStore name of the parent file system. **The value is described as follows:** The value contains 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256 **Range:**^[0-9a-zA-Z_.-]{1,256}
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value contains 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256 **Range:**^[0-9a-zA-Z_.-]{1,256}
scheduleName	Optional	string	Name of a HyperCDP schedule. **The value is described as follows:** If this parameter is set to NAS_DEFAULT_BUILDIN, the created file system is automatically added to the default schedule. If this parameter is set to NONE, the created file system is not added to any schedule. If this parameter is set to any value, the created file system is automatically added to the specified schedule. **Default:**NAS_DEFAULT_BUILDIN
useExistFs	Optional	bool	Indicates whether to use an existing file system. **The value is described as follows:** true: Use an existing file system. false: Do not use an existing file system. **Default:**false

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system
ID	Mandatory	string	ID of a clone file system.
NAME	Mandatory	string	Name of a clone file system. **The value is described as follows:** The value contains only 1 to 255 digits, letters, and underscores (_).
ENABLEDEDUP	Mandatory	string(bool)	Enables or disables deduplication. **The value is described as follows:** true: enabled false: disabled
RECYCLESWITCH	Mandatory	string(enum)	Recycle bin switch. **The value is described as follows:** 0: off 1: on **Note:**Currently, this field is not supported.
IOCLASSID	Mandatory	string	I/O class.
ENABLEDEDUPCHECK	Mandatory	string(bool)	Whether to enable the function of checking byte by byte. **The value is described as follows:** true: yes false: no **Note:**This field is valid for the CLI only.

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITYTHRESHOLD	Mandatory	string(uint64)	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 95%. The default value is 90%.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool
PARENTID	Mandatory	string	Storage pool ID.
PARENTNAME	Mandatory	string	Storage pool name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal 2: Faulty 15: Write protected
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 35: Invalid 53: Initializing 96: Partition migrating
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(enum)	File system type. **The value is described as follows:** 0: common file system 1: WORM file system
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 0: thick file system 1: thin file system

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITY	Mandatory	string(uint64)	Configured capacity.
INITIALALLOCCAPACITY	Mandatory	string(uint64)	Initially allocated capacity.
SNAPSHOTRESERVEPER	Mandatory	string(uint32)	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%.
AUTODELSNAPSHOTENABLE	Mandatory	string(bool)	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: yes false: no
SNAPSHOTUSECAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity.
SECTORSIZE	Mandatory	string(uint32)	Block size. **The value is described as follows:** The value can only be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB.
OWNINGCONTROLLER	Mandatory	string	ID of the owning controller.
WORKINGCONTROLLER	Mandatory	string	ID of the working controller.
CHECKSUMENABLE	Mandatory	string(bool)	Data parity switch. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ATIME	Mandatory	string(bool)	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: on false: off
READONLY	Mandatory	string(bool)	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes
IOPRIORITY	Mandatory	string(enum)	File system I/O priority. **The value is described as follows:** 1: low 2: middle 3: high
CACHEPARTITIONID	Mandatory	string	Cache partition ID.
ISCLONEFS	Mandatory	string(bool)	Indicates whether this is a clone file system. **The value is described as follows:** true: yes false: no
ENABLECOMPRESSION	Mandatory	string(bool)	Compression enabled or not. **The value is described as follows:** true: enabled false: disabled
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
WORMTYPE	Mandatory	string(enum)	WORM service type. **The value is described as follows:** Currently only the compliance mode is supported. 1: compliance mode 2: audit log 3: enterprise mode
WORMMINPROTECTPERIOD	Mandatory	string(uint64)	Minimum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. In addition, infinite is supported.
WORMMAXPROTECTPERIOD	Mandatory	string(uint64)	Maximum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. The default value is 70 years. In addition, infinite is supported.
WORMDEFPROTECTPERIOD	Mandatory	string(uint64)	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period.
WORMAUTOLOCK	Mandatory	string(bool)	Automatic lock mode of WORM. **The value is described as follows:** true: on false: off

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Parameter	Mandatory/ Conditional	Type	Description
WORMAUTOLOCKTIME	Mandatory	string(uint32)	Automatic lock time. **The value is described as follows:** The default value is 2 hours. The value ranges from 2 hours to 7 days.
WORMAUTODEL	Mandatory	string(bool)	Automatic deletion mode of WORM. **The value is described as follows:** true: on false: off
WRITECHECK	Mandatory	string(bool)	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: enabled false: disabled
TIMINGSNAPSHOTMAXNUM	Mandatory	string(uint32)	Maximum number of periodic snapshots.
ISSHOWSNAPDIR	Mandatory	string(bool)	Snapshot directory visible or not. **The value is described as follows:** true: yes false: no
DATATRANSFERPOLICY	Mandatory	string(enum)	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier

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Parameter	Mandatory/ Conditional	Type	Description
INITIALDISTRIBUTE-POLICY	Mandatory	string(enum)	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity
PARENTSNAPSHOTID	Mandatory	string	ID of the parent read-only snapshot.
PARENTSNAPSHOTNAME	Conditional	string	Snapshot name of the parent file system. **The value is described as follows:** Name of an existing read-only snapshot.
PARENTFILESYSTEMID	Conditional	string	ID of the parent file system. **Note:**This field must be returned if the specified file system is a clone file system.
PARENTFILESYSTEM-NAME	Mandatory	string	Name of the parent file system.
SMARTCACHEPARTI-TIONID	Mandatory	string	SmartCache partition ID.
ENABLEROLLBACKMODE	Conditional	string(bool)	Rollback mode of read-only snapshots. **The value is described as follows:** true: on false: off **Note:**This field has been discarded.
AVAILABLECAPCITY	Mandatory	string(uint64)	Available file system capacity.
AVAILABLEANDALLOCCAPACITYRATIO	Mandatory	string(uint32)	Percentage of used file system capacity to the total capacity.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLETIMINGSNAP-SHOT	Mandatory	string(bool)	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: enabled false: disabled
TIMINGSNAPSHOTSC HEDULEID	Mandatory	string	Timing policy ID of file system read-only snapshots.
ROOT	Mandatory	string	Root path.
LOCALACCESSDEFINI-TIONREQUIRED	Mandatory	string(enum)	Local access options are supported. **The value is described as follows:** 2: A file system needs to be defined in the local access. 3: A file system needs to be defined at a fixed directory in the local access. 4: A file system does not need to be defined in the local access.
PATHNAMESEPARATO RSTRING	Mandatory	string	Directory separator.
CASESENSITIVE	Mandatory	string(bool)	Indicates whether a file name is case-sensitive. **The value is described as follows:** true: yes false: no
CASEPRESERVED	Mandatory	string(bool)	Indicates whether the file name size is reserved. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
MAXFILENAMELENGTH	Mandatory	string(uint32)	Maximum file name length.
ACTUALFILESYSTEM-TYPE	Mandatory	string(enum)	Actual file system type. **The value is described as follows:** 1: Wushan file system 2: NOFS
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by deduplication.
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Capacity saved by compression.
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total capacity saved.
SMARTCACHESTATE	Mandatory	string(enum)	SmartCache status. **The value is described as follows:** 0: disabled 1: enabled 2: pool status inherited
SC_CACHEDSIZE	Mandatory	string(uint32)	SmartCache size.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio (%).
MINPROTECTTIMEU-NIT	Mandatory	string(enum)	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year
MAXPROTECTTIMEU-NIT	Mandatory	string(enum)	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year

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Parameter	Mandatory/ Conditional	Type	Description
DEFPROTECTTIMEU-NIT	Mandatory	string(enum)	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**"0" indicates an invalid value.
AUTOLOCKTIMEUNIT	Mandatory	string(enum)	Automatic lock time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**"0" indicates an invalid value.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication.
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression.
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio.
WORMCLOCKTIME	Mandatory	string(uint64)	WORM clock time.
WORMEXPIREDTIME	Mandatory	string(uint64)	WORM expiration time.
MINSIZEFSCAPACITY	Mandatory	string(uint64)	Minimum space that can be reduced for a thin file system.
inodeTotalCount	Mandatory	string(uint32)	Total number of inodes.
inodeUsedCount	Mandatory	string(uint32)	Number of used inodes.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	Remote replication IDs.
APPLICATIONSCENAR-IO	Mandatory	string(enum)	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined
HYPERMETROPAIRIDS	Mandatory	string(array)	HyperMetro pair IDs.
HYPERVAULTPAIRIDS	Mandatory	string(array)	HyperVault pair IDs.
CHILDRENCLONEFS-NUM	Mandatory	string(uint32)	Number of child clone file systems.
ISDELETEPARENTS-NAPSHOT	Mandatory	string(bool)	Whether to delete the read-only snapshots associated with the parent file system. **The value is described as follows:** true: yes false: no
SPLITENABLE	Mandatory	string(bool)	Splitting switch. **The value is described as follows:** true: starts splitting. false: stops splitting.
SPLITPROGRESS	Mandatory	string(uint32)	Splitting progress.
SPLITSPEED	Mandatory	enum	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The other values returned are invalid.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSTATUS	Mandatory	enum	Splitting status. **The value is described as follows:** 1: not started 2: splitting 3: queuing 4: interrupted **Note:**The other values returned are invalid.
SPACESELFADJUSTINGMODE	Mandatory	string(enum)	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: off 1: automatic capacity expansion 2: automatic capacity expansion and reduction
AUTOSIZEENABLE	Mandatory	string(enum)	Switch of automatic capacity adjustment. **The value is described as follows:** 0: off 1: on
AUTOSHRINKTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1~99 **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
AUTOGROWTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 1~99 **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.
MINAUTOSIZE	Mandatory	string(uint64)	Lower limit of the automatic reduction. **The value is described as follows:** 1GB~16PB **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.
MAXAUTOSIZE	Mandatory	string(uint64)	Upper limit of the automatic expansion. **The value is described as follows:** 1GB~16PB **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.
SPACERECYCLEMODE	Mandatory	string(enum)	Capacity recycle mode. **The value is described as follows:** 0: automatic capacity expansion preferred 1: automatic snapshot deletion preferred

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Parameter	Mandatory/ Conditional	Type	Description
AUTOSIZEINCREMENT	Mandatory	string(uint64)	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64MB~100GB
SNAPSHOTRESERVE-CAPACITY	Mandatory	string(uint64)	Reserved snapshot capacity.
ALTERNATEDATASTREAMS	Mandatory	string(enum)	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: no 1: yes
createTime	Mandatory	string(uint64)	Time when a clone file system is created.
parentFileSystemV-storeId	Mandatory	string(uint32)	vStore ID of the parent file system.
parentFileSystemV-storeName	Mandatory	string	vStore name of the parent file system.
scheduleName	Mandatory	string	HyperCDP schedule name.

Usage Guidelines

Multiple clone file systems can be created for a file system.

Example

- Creating a clone file system.

```
Request: POST /deviceManager/rest/210235843910E6000009/filesystem
{
   "NAME": "shl0000_Clone_1708070241082",
   "DESCRIPTION": "",
   "ALLOCTYPE": "1",
   "PARENTFILESYSTEMID": "5"
}

Response: {
        "data": {
            "ACTUALFILESYSTEMTYPE": "2",
            "ALLOCCAPACITY": "0",
            "ALLOCTYPE": "1",
            "APPLICATIONSCENARIO": "3",
            "ATIME": "false",
            "AUTODELSNAPSHOTENABLE": "false",
```

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```
    "AUTOGROWTHRESHOLDPERCENT": "85",
    "AUTOLOCKTIMEUNIT": "0",
    "AUTOSHRINKTHRESHOLDPERCENT": "50",
    "AUTOSIZEENABLE": "1",
    "AUTOSIZEINCREMENT": "2097152",
    "AVAILABLEANDALLOCCAPACITYRATIO": "0",
    "AVAILABLECAPCITY": "0",
    "CACHEPARTITIONID": "",
    "CAPACITY": "2097152",
    "CAPACITYTHRESHOLD": "90",
    "CASEPRESERVED": "true",
    "CASESENSITIVE": "true",
    "CHECKSUMENABLE": "true",
    "CHILDRENCLONEFSNUM": "0",
    "COMPRESSION": "0",
    "COMPRESSIONSAVEDCAPACITY": "0",
    "COMPRESSIONSAVEDRATIO": "0",
    "DATATRANSFERPOLICY": "0",
    "DEDUPSAVEDCAPACITY": "0",
    "DEDUPSAVEDRATIO": "0",
    "DEFPROTECTTIMEUNIT": "0",
    "DESCRIPTION": "",
    "ENABLECOMPRESSION": "false",
    "ENABLEDEDUP": "false",
    "ENABLEDEDUPCHECK": "false",
    "ENABLEROLLBACKMODE": "false",
    "ENABLETIMINGSNAPSHOT": "false",
    "HEALTHSTATUS": "1",
    "HYPERMETROPAIRIDS": "[]",
    "HYPERVAULTPAIRIDS": "[]",
    "ID": "33",
    "INITIALALLOCCAPACITY": "20480",
    "INITIALDISTRIBUTEPOLICY": "0",
    "IOCLASSID": "",
    "IOPRIORITY": "1",
    "ISCLONEFS": "true",
    "ISDELETEPARENTSNAPSHOT": "false",
    "ISSHOWSNAPDIR": "true",
    "LOCALACCESSDEFINITIONREQUIRED": "4",
    "MAXAUTOSIZE": "2516582",
    "MAXFILENAMELENGTH": "256",
    "MAXPROTECTTIMEUNIT": "0",
    "MINAUTOSIZE": "2097152",
    "MINPROTECTTIMEUNIT": "0",
    "MINSIZEFSCAPACITY": "0",
    "NAME": "shl0000_Clone_1708070241082",
    "OWNINGCONTROLLER": "0B",
    "PARENTFILESYSTEMNAME": "shl0000",
    "PARENTID": "0",
    "PARENTNAME": "StoragePool001",
    "PARENTSNAPSHOTID": "",
    "PARENTSNAPSHOTNAME":"",
    "PARENTTYPE": 216,
    "PATHNAMESEPARATORSTRING": "/",
    "READONLY": "false",
    "RECYCLESWITCH": "33",
    "REMOTEREPLICATIONIDS": "[]",
    "ROOT": "/shl0000_Clone_1708070241082",
    "RUNNINGSTATUS": "53",
    "SC_CACHEDSIZE": "0",
    "SC_HITRAGE": "0",
    "SECTORSIZE": "16384",
    "SMARTCACHEPARTITIONID": "",
    "SMARTCACHESTATE": "0",
    "SNAPSHOTRESERVECAPACITY": "419430",
    "SNAPSHOTRESERVEPER": "20",
    "SNAPSHOTUSECAPACITY": "0",
    "SPACERECYCLEMODE": "0",
    "SPACESELFADJUSTINGMODE": "0",
```


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```
        "SPLITENABLE": "false",
        "SPLITPROGRESS": "0",
        "SPLITSPEED": "2",
        "SPLITSTATUS": "0",
        "SUBTYPE": "0",
        "TIMINGSNAPSHOTMAXNUM": "16",
        "TIMINGSNAPSHOTSCHEDULEID": "",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 40,
        "WORKINGCONTROLLER": "0B",
        "WORMAUTODEL": "false",
        "WORMAUTOLOCK": "false",
        "WORMAUTOLOCKTIME": "0",
        "WORMCLOCKTIME": "0",
        "WORMDEFPROTECTPERIOD": "0",
        "WORMEXPIREDTIME": "0",
        "WORMMAXPROTECTPERIOD": "0",
        "WORMMINPROTECTPERIOD": "0",
        "WORMTYPE": "0",
        "WRITECHECK": "false",
        "inodeTotalCount": "0",
        "inodeUsedCount": "0",
        "vstoreId": "1",
        "ALTERNATEDATASTREAMS":"0",
        "vstoreName": "vStore001",
        "scheduleName":"aa",
        "createTime":"1611110410",
        "parentFileSystemVstoreId":"0",
        "parentFileSystemVstoreName":"System_vStore",
        "PARENTFILESYSTEMID": "5"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.1.1.2 Interface for Creating a File System

Function

This interface is used to create a file system.

HighRisk

WARNING : You are about to create a file system. When the capacity of file system is no greater than 3 GB, the valued-added services and host services related to the file system may time out, and switching the working controller of the file system may also time out. Suggestion: The capacity of the file system is greater than 3 GB.
You are about to set the audit log configuration items of the file system. This operation may interrupt services. If too many audit logs are generated and the audit log collection speed on the background is slower than the audit log writing speed on the foreground, the temporary buffer space may be insufficient and services may be interrupted. Suggestion: Configure the items properly. For example, configure only delete, create, and write items.

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You are about to create an audit log file system. This operation may cause the following problem:

If the local vStore is a HyperMetro vStore and no audit log file system is created for the remote vStore, audit logs may be incomplete.

Suggestion:

Create an audit log file system for the remote vStore as well if you create an audit log file system for a HyperMetro vStore, and turn on the audit switch of the corresponding remote vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	File system name. **The value is described as follows:** The value contains only digits, letters, underscores (_), periods (.), and hyphens (-). **Length:**1-255
PARENTTYPE	Optional	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool **Default:**216: storage pool **Note:**This field is not supported in the current version.
PARENTID	Mandatory	string	Storage pool ID. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255
SUBTYPE	Optional	uint32	File system type. **The value is described as follows:** 0: common file system 1: WORM file system **Default:**0: common file system
ALLOCTYPE	Optional	enum	Space allocation type. **The value is described as follows:** 1: thin file system **Default:**1: thin file system **Note:**This field is not supported in the current version.
CAPACITY	Optional	uint64	Configured capacity. **The value is described as follows:** - **Default:**The default value of the thin file system is 32 TB.
INITIALALLOCCAPACITY	Optional	uint64	Initially allocated capacity. **The value is described as follows:** - **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SNAPSHOTRESERVEPER	Optional	uint32	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%. **Default:**20
AUTODELSNAPSHOTENABLE	Optional	bool	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: yes false: no **Default:**false: no
CAPACITYTHRESHOLD	Optional	uint64	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 99%. **Default:**90
APPLICATIONSCENARIO	Optional	enum	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined **Default:**3: user-defined **Note:**This field has been discarded.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SECTORSIZE	Conditional	uint32	Block size. **The value is described as follows:** The value can be 8 KB, 16 KB, 32 KB, or 64 KB. **Default:**16384 **Note:**When "APPLICATIONSCENARIO" is "1" and storage pools to which file systems belong use all SSDs, this field is "16384" by default; otherwise, the default value is "8192". When the "APPLICATIONSCENARIO" is "2", this field is "16384" by default.
OWNINGCONTROLLER	Optional	string	ID of the owning controller. **The value is described as follows:** -
CHECKSUMENABLE	Optional	bool	Data parity switch. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This field is not supported in the current version.
ATIME	Optional	bool	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
ATIMEUPDATEMODE	Conditional	uint32	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day **Default:**4294967295: update disabled **Note:**If the value of the "ATIME" field is "true", this field must be set to 3600 or 86400. If the "ATIME" field is set to "false", the default value of this field is 4294967295.
READONLY	Optional	bool	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes **Default:**false: yes **Note:**This field is not supported in the current version.
IOPRIORITY	Optional	enum	File system I/O priority. **The value is described as follows:** 1: low 2: medium 3: high **Default:**1: low **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISCLONEFS	Optional	bool	Indicates whether this is a clone file system. **The value is described as follows:** true: yes false: no **Default:**false: no **Note:**This field is not supported in the current version.
ENABLECOMPRESSION	Optional	bool	Indicates whether compression is enabled. **The value is described as follows:** true: on false: off **Default:**false: off
COMPRESSION	Optional	enum	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression **Default:**0: rapid compression **Note:**This field is not supported in the current version.
WORMTYPE	Conditional	enum	WORM service type. **The value is described as follows:** 1: regulatory compliance mode [NOTE:The current version supports only the regulatory compliance mode.] **Note:**This parameter must be delivered when a WORM file system is created.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WORMMINPROTECTPERIOD	Optional	uint64	Minimum protection period. **The value is described as follows:** 0 to 70 years. In addition, infinite is supported. The value of infinite is 18446744073709551615. **Default:**3
WORMMAXPROTECTPERIOD	Optional	uint64	Maximum protection period. **The value is described as follows:** The value ranges from 0 to 70. The value cannot be 0. In addition, infinite must be supported. The value is 18446744073709551615. **Default:**70 years
WORMDEFPROTECTPERIOD	Optional	uint64	Default protection period. **The value is described as follows:** Minimum protection period <= Default protection period <= Maximum protection period. In addition, infinite needs to be supported. The value of infinite is 18446744073709551615. **Default:**Maximum protection period.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WORMAUTOLOCK	Optional	bool	Automatic lock mode of WORM. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled
WORMAUTOLOCKTIME	Optional	uint32	Automatic lock time. **The value is described as follows:** Value range: 1 minute to 10 years. **Default:**2 hours
WORMAUTODEL	Optional	bool	Automatic deletion mode of WORM. **The value is described as follows:** true: on false: off **Default:**false: off
WRITECHECK	Optional	bool	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: on false: off **Default:**false: off **Note:**This field is not supported in the current version.
TIMINGSNAPSHOTMAXNUM	Optional	uint32	Maximum number of periodic snapshots. **The value is described as follows:** 1 to 2048 **Default:**21 **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ISSHOWSNAPDIR	Optional	bool	Indicates whether the snapshot directory is visible. **The value is described as follows:** true: yes false: no **Default:**true: yes
INITIALDISTRIBUTE-POLICY	Optional	enum	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity **Default:**0: automatic **Note:** The prefetch policy is specified based on site requirements. This field is not supported by OceanStor Dorado V3 all-flash array series.
ENABLEROLLBACKMODE	Optional	bool	Rollback mode of read-only snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This field has been discarded.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLETIMINGSNAPSHOT	Optional	bool	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled **Note:**This field is not supported in the current version.
SMARTCACHESTATE	Optional	enum	SmartCache status. **The value is described as follows:** 0: off 1: on 2: pool status inherited **Default:**0: off **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
MINPROTECTTIMEUNIT	Conditional	enum	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Default:**48: year **Note:**This field must be delivered when a WORM file system is specified and the delivered value of the WORMMINPROTECTPERIOD field is a digit.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MAXPROTECTTIMEUNIT	Conditional	enum	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Default:**48: year **Note:**This field must be delivered when a WORM file system is specified and the delivered value of the WORMMAXPROTECTPERIOD field is a digit.
DEFPROTECTTIMEUNIT	Conditional	enum	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Default:**48: year **Note:**This field must be delivered when a WORM file system is specified and the delivered value of the WORMDEFPROTECTPERIOD field is a digit.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUTOLOCKTIMEUNIT	Conditional	enum	Automatic lock time unit. **The value is described as follows:** 44: minute 45: hour 46: day 47: month 48: year **Default:**45: hour **Note:**This field must be delivered when a WORM file system is specified and the "WORMAUTOLOCKTIME" field is delivered.
ENABLEDEDUP	Optional	bool	Enables or disables deduplication. **The value is described as follows:** true: enabled false: disabled **Default:**false: disable
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.
SPACESELFADJUSTINGMODE	Optional	enum	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: off 1: automatic capacity expansion 2: automatic capacity expansion and reduction **Default:**0: off

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUTOSIZEENABLE	Optional	enum	Switch of automatic capacity adjustment. **The value is described as follows:** 0: disabled 1: enabled **Default:**1: enabled **Note:**This field is not supported in the current version.
AUTOSHRINKTHRESHOLDPERCENT	Optional	uint32	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1 to 97 **Default:**50 **Note:**The auto reduction trigger threshold (%) must be less than the auto expansion trigger threshold (%).
AUTOGROWTHRESHOLDPERCENT	Optional	uint32	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 2 to 98 **Default:**85 **Note:**The auto expansion trigger threshold (%) must be greater than the auto reduction trigger threshold (%), and less than the total capacity alarm threshold (%).

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Parameter	Mandatory/Optional/Conditional	Type	Description
MINAUTOSIZE	Optional	uint64	Lower limit of the automatic reduction. **The value is described as follows:** 1 GB to 32 PB **Default:**Total capacity of the file system. **Note:**The auto reduction lower limit must be less than or equal to the auto expansion upper limit, and less than or equal to the total capacity of the file system.
MAXAUTOSIZE	Optional	uint64	Upper limit of the automatic expansion. **The value is described as follows:** 1 GB to 32 PB **Default:**1.2 times of the total capacity of the file system **Note:**The auto expansion upper limit must be greater than or equal to the auto reduction lower limit, and greater than or equal to the total capacity of the file system.
AUTOSIZEINCREMENT	Optional	uint64	Capacity change of a single expansion/reduction. **The value is described as follows:** 64 MB to 100 GB **Default:**1 GB **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPACERECYCLEMODE	Optional	enum	Capacity recycle mode. **The value is described as follows:** 0: preferentially expands capacity. 1: preferentially deletes earlier snapshots. **Default:**0: preferentially expands capacity. **Note:**This field is not supported in the current version.
ALTERNATEDATASTREAMS	Optional	enum	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: disabled 1: enabled **Default:**yes **Note:**This field is not supported in the current version.
ssdCapacityUpperLimit	Optional	uint64	SSD capacity upper limit. **The value is described as follows:** - **Note:**This field is not supported in the current version.
securityStyle	Optional	enum	Security style. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 0: Mixed **Default:**3: UNIX

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Parameter	Mandatory/Optional/Conditional	Type	Description
nasLockingPolicy	Optional	enum	NAS lock policy. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Default:**0: Mandatory **Note:**This parameter is delivered when the security style is Native.
workloadTypeId	Optional	uint32	ID of the application type. **The value is described as follows:** 0 to 2048.
userView	Optional	uint32	User view. **The value is described as follows:** 0 to 2. **Note:** 0: user 1: engineer 2: developer
longFilenameEnabled	Optional	bool	Indicates whether to enable the long file name function. **The value is described as follows:** 0: disabled 1: enabled **Default:**1: enabled **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
support32BitInode	Optional	bool	Whether 32-bit inodes are supported. **The value is described as follows:** true: yes false: no
unixPermissions	Optional	string	UNIX permissions of the file system root directory. **The value is described as follows:** The value consists of three digits whose meanings are as follows: The first digit refers to the permissions of the owner. The second digit refers to the permissions of the user group to which the file belongs. The last digit refers to the permissions of everyone else. The digits are from 0 to 7 whose meanings are as follows: 0: No permission; 1: Execute permission; 2: Write permission; 3: Write and execute permissions; 4: Read permission; 5: Read and execute permissions; 6: Read and write permissions; 7: All permissions (read, write, and execute). **Default:**755 **Length:**3

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Parameter	Mandatory/Optional/Conditional	Type	Description
isAuditLogFs	Optional	bool	Whether the file system is an audit log file system. **The value is described as follows:** true: yes false: no
scheduleName	Optional	string	Name of a HyperCDP schedule. **The value is described as follows:** - **Default:**NAS_DEFAULT_BUILDIN **Note:**If "NAS_DEFAULT_BUILDIN" is delivered, the file system is automatically added to the default schedule. If "NONE" is delivered or this parameter is not delivered, the file system is not added to any schedule. If this parameter is not delivered, the created file system will not be added to any schedule. If a created file system needs to be automatically added to a specified schedule, you must have the hyper_cdp_w and fs_snapshot_w permissions.

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Parameter	Mandatory/Optional/Conditional	Type	Description
distAlg	Optional	enum	Distribution algorithm. **The value is described as follows:** 0: performance mode; 1: capacity balance mode; 2: directory balance mode; 3: directory shuffle mode; 4: controller affinity mode **Default:**0
variableSegment	Optional	uint64	Variable-length segment. **The value is described as follows:** The value can be 8 (8 KB) or 16 (16 KB). **Default:**8
fileSystemMode	Optional	uint8	Usage mode of the file system. **The value is described as follows:** 0: local 1: HyperMetro **Note:**A file system in HyperMetro mode can be used only after a HyperMetro pair is created.
isWormAuditLogFs	Optional	bool	Whether to create a WORM audit log file system. **The value is described as follows:** false: no true: yes **Default:**false: no **Note:**This field can be delivered only for WORM file systems.

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Parameter	Mandatory/Optional/Conditional	Type	Description
QUOTASWITCH	Optional	bool	Quota switch. **The value is described as follows:** 0: off 1: on **Default:**0: off

Parameter	Mandatory/Optional/Conditional	Type	Description
auditItems	Optional	enum	Audit item of the file system. **The value is described as follows:** 0:"none": indicates that no operation is audited. This parameter cannot be set together with other audit items. 1:"set_security": audits the set security operation. 2:"get_security": audit the get security operation. 4:"set_attr": audits the set attr operation. 8: "get_attr": audits the get attr operation. 16: "set_xattr": audits the set xattr operation. 32: "get_xattr": audits the get xattr operation. 64: "open": audits the open operation. 128: "close": audits the close operation. 256: "read": audits the read operation. 512: "write": audits the write operation. 1024: "create": audits the create operation. 2048: "delete": audits the delete operation. 4096: "rename": audits the rename operation. 8192: "list_folder": audits the list folder operation. 0xFFFFFFFF: "all": All the preceding operations are

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Parameter	Mandatory/Optional/Conditional	Type	Description
			audited. If you need to set multiple audit items, separate them with commas (,). For example: audit_items=set_security,get_security. **Default:**0
oidReuseSwitch	Optional	uint8	OID reuse switch. **The value is described as follows:** 0: off 1: on **Default:**0: off
inodeLow32DtreeBit	Optional	uint32	Specifies the number of dtree ID bits in the low 32 bits of an inode ID. **The value is described as follows:** 0..5
vaaiSwitch	Optional	uint8	Whether to enable the VAAI feature. **The value is described as follows:** 0: Off; 1: On **Default:**0: Off

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Parameter	Mandatory/Optional/Conditional	Type	Description
fsCapacitySwitch	Optional	uint8	Switch for displaying the file system capacity. **The value is described as follows:** 0: off 1: on **Default:**0: off **Note:**After this function is enabled, the configured capacity instead of the actual available capacity is displayed when you query the capacity information about a thin file system.
characterSet	Optional	uint32	Character set. **The value is described as follows:** 0: UTF8 1: UTF8-MB4 **Default:**0:UTF8
metaOidReuseSwitch	Optional	uint8	Specifies whether to enable metadata OID reuse. **The value is described as follows:** 1:on; 0:off **Default:**0: off

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -
NAME	Mandatory	string	File system name. **The value is described as follows:** The value contains 1 to 255 characters, including letters, digits, and underscores (_).
ENABLEDEDUP	Mandatory	string(bool)	Enables or disables deduplication. **The value is described as follows:** true: enabled false: disabled
RECYCLESWITCH	Mandatory	string(enum)	Recycle bin switch. **The value is described as follows:** 0: disabled 1: enabled **Note:**Currently, this field is not supported.
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** -
ENABLEDEDUPCHECK	Mandatory	string(bool)	Whether to enable the function of checking byte by byte. **The value is described as follows:** true: yes false: no **Note:**This field is valid for the CLI only.

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Parameter	Mandatory/ Conditional	Type	Description
CAPACITYTHRESHOLD	Mandatory	string(uint64)	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 99%. The default value is 90%.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool
PARENTID	Mandatory	string	Storage pool ID. **The value is described as follows:** -
PARENTNAME	Mandatory	string	Storage pool name. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** -
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 35: Invalid 53: Initializing
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
SUBTYPE	Mandatory	string(enum)	File system type. **The value is described as follows:** 0: common file system 1: WORM file system

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Parameter	Mandatory/ Conditional	Type	Description
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin file system
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** -
INITIALALLOCCAPACITY	Mandatory	string(uint64)	Initially allocated capacity. **The value is described as follows:** -
SNAPSHOTRESERVEPER	Mandatory	string(uint32)	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%.
AUTODELSNAPSHOTENABLE	Mandatory	string(bool)	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: yes false: no
SNAPSHOTUSECAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **The value is described as follows:** -
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
SECTORSIZE	Mandatory	string(uint32)	Block size. **The value is described as follows:** The value can only be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB.
OWNINGCONTROLLER	Mandatory	string	ID of the owning controller. **The value is described as follows:** -
WORKINGCONTROLLER	Mandatory	string	ID of the working controller. **The value is described as follows:** -
CHECKSUMENABLE	Mandatory	string(bool)	Data parity switch. **The value is described as follows:** true: enabled false: disabled
ATIME	Mandatory	string(bool)	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: enabled false: disabled
ATIMEUPDATEMODE	Mandatory	string(uint32)	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day

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Parameter	Mandatory/ Conditional	Type	Description
READONLY	Mandatory	string(bool)	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes
IOPRIORITY	Mandatory	string(enum)	File system I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
CACHEPARTITIONID	Mandatory	string	Cache partition ID. **The value is described as follows:** -
ISCLONEFS	Mandatory	string(bool)	Indicates whether this is a clone file system. **The value is described as follows:** true: yes false: no
ENABLECOMPRESSION	Mandatory	string(bool)	Compression enabled or not. **The value is described as follows:** true: on false: off
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression

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Parameter	Mandatory/ Conditional	Type	Description
WORMTYPE	Mandatory	string(enum)	WORM service type. **The value is described as follows:** 1: regulatory compliance mode 3: enterprise compliance mode
WORMMINPROTECTPERIOD	Conditional	string(uint64)	Minimum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. In addition, infinite is supported.
WORMMAXPROTECTPERIOD	Mandatory	string(uint64)	Maximum protection period. **The value is described as follows:** The value ranges from 1 to 70 years. The default value is 70 years. In addition, infinite is supported.
WORMDEFPROTECTPERIOD	Mandatory	string(uint64)	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period.
WORMAUTOLOCK	Mandatory	string(bool)	Automatic lock mode of WORM. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
WORMAUTOLOCKTIME	Mandatory	string(uint32)	Automatic lock time. **The value is described as follows:** The default value is 2 hours. The value ranges from 2 hours to 7 days.
WORMAUTODEL	Mandatory	string(bool)	Automatic deletion mode of WORM. **The value is described as follows:** true: on false: off
WRITECHECK	Mandatory	string(bool)	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: on false: off
TIMINGSNAPSHOTMAXNUM	Mandatory	string(uint32)	Maximum number of periodic snapshots. **The value is described as follows:** -
ISSHOWSNAPDIR	Mandatory	string(bool)	Snapshot directory visible or not. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
DATATRANSFERPOLICY	Mandatory	string(enum)	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
INITIALDISTRIBUTEPOLICY	Mandatory	string(enum)	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
PARENTSNAPSHOTID	Mandatory	string	ID of the parent read-only snapshot. **The value is described as follows:** -
PARENTSNAPSHOTNAME	Conditional	string	Name of the parent read-only snapshot. **The value is described as follows:** - **Note:**This field must be returned if the specified file system is a clone file system.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTFILESYSTEM-NAME	Mandatory	string	Name of the parent file system. **The value is described as follows:** -
SMARTCACHEPARTI-TIONID	Mandatory	string	SmartCache partition ID. **The value is described as follows:** - **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
ENABLEROLLBACKMODE	Conditional	string(bool)	Rollback mode of read-only snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This field has been discarded.
AVAILABLECAPCITY	Mandatory	string(uint64)	Available file system capacity. **The value is described as follows:** -
AVAILABLEANDALLOCCAPACITYRATIO	Mandatory	string(uint32)	Percentage of used file system capacity to the total capacity. **The value is described as follows:** -
ENABLETIMINGSNAP-SHOT	Mandatory	string(bool)	Whether to enable the periodic snapshot. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ROOT	Mandatory	string	Root path. **The value is described as follows:** -
TIMINGSNAPSHOTSCHEDULEID	Mandatory	string	Timing policy ID of file system read-only snapshots. **The value is described as follows:** -
LOCALACCESSDEFINITIONREQUIRED	Mandatory	string(enum)	Local access options are supported. **The value is described as follows:** 2: A file system needs to be defined in the local access. 3: A file system needs to be defined at a fixed directory in the local access. 4: A file system does not need to be defined in the local access.
PATHNAMESEPARATORSTRING	Mandatory	string	Directory separator. **The value is described as follows:** -
CASESENSITIVE	Mandatory	string(bool)	Indicates whether a file name is case-sensitive. **The value is described as follows:** true: yes false: no
CASEPRESERVED	Mandatory	string(bool)	Indicates whether the file name size is reserved. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
MAXFILENAMELENGTH	Mandatory	string(uint32)	Maximum file name length. **The value is described as follows:** -
ACTUALFILESYSTEM-TYPE	Mandatory	string(enum)	Actual file system type. **The value is described as follows:** 1: Wushan file system 2: NOFS
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by deduplication. **The value is described as follows:** -
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Capacity saved by compression. **The value is described as follows:** -
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total capacity saved. **The value is described as follows:** -
SMARTCACHESTATE	Mandatory	string(enum)	SmartCache status. **The value is described as follows:** 0: off 1: on 2: pool status inherited **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
SC_CACHEDSIZE	Mandatory	string(uint32)	SmartCache size. **The value is described as follows:** - **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio (%). **The value is described as follows:** - **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
MINPROTECTTIMEU-NIT	Mandatory	string(enum)	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year
MAXPROTECTTIMEU-NIT	Mandatory	string(enum)	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year
DEFPROTECTTIMEU-NIT	Mandatory	string(enum)	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year

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Parameter	Mandatory/ Conditional	Type	Description
AUTOLOCKTIMEUNIT	Mandatory	string(enum)	Automatic lock time unit. **The value is described as follows:** 46: day 47: month 48: year
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** -
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** -
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** -
WORMCLOCKTIME	Mandatory	string(uint64)	WORM clock time. **The value is described as follows:** -
WORMEXPIREDTIME	Mandatory	string(uint64)	WORM expiration time. **The value is described as follows:** -
MINSIZEFSCAPACITY	Mandatory	string(uint64)	Minimum space that can be reduced for a thin file system. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
inodeTotalCount	Mandatory	string(uint32)	Total number of inodes. **The value is described as follows:** -
inodeUsedCount	Mandatory	string(uint32)	Number of used inodes. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	IDs of remote replication tasks. **The value is described as follows:** -
APPLICATIONSCENAR-IO	Mandatory	string(enum)	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined
HYPERMETROPAIRIDS	Mandatory	string(array)	HyperMetro pair IDs. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
HYPERVAULTPAIRIDS	Mandatory	string(array)	HyperVault pair IDs. **The value is described as follows:** -
SNAPSHOTRESERVE-CAPACITY	Mandatory	string(uint64)	Reserved snapshot space. **The value is described as follows:** -
CHILDRENCLONEFS-NUM	Mandatory	string(uint32)	Number of child clone file systems. **The value is described as follows:** -
ISDELETEPARENTS-NAPSHOT	Mandatory	string(bool)	Whether to delete the read-only snapshots associated with the parent file system. **The value is described as follows:** true: yes false: no
SPLITENABLE	Mandatory	string(bool)	Splitting switch. **The value is described as follows:** true: starts splitting. false: stops splitting.
SPLITPROGRESS	Mandatory	string(uint32)	Splitting progress. **The value is described as follows:** - **Note:**-1 indicates that no splitting is performed.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSPEED	Mandatory	string(enum)	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The other values returned are invalid.
SPLITSTATUS	Mandatory	string(enum)	Splitting status. **The value is described as follows:** 1: not started 2: splitting 3: queuing 4: interrupted **Note:**The other values returned are invalid.
SPACESELFADJUSTINGMODE	Mandatory	string(enum)	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: off 1: automatic capacity expansion 2: automatic capacity expansion and reduction
AUTOSIZEENABLE	Mandatory	string(enum)	Switch of automatic capacity adjustment. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
AUTOSHRINKTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1 to 99 **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.
AUTOGROWTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 1 to 99 **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.
MINAUTOSIZE	Mandatory	string(uint64)	Lower limit of the automatic reduction. **The value is described as follows:** 1 GB to 16 PB **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
MAXAUTOSIZE	Mandatory	string(uint64)	Upper limit of the automatic expansion. **The value is described as follows:** 1 GB to 16 PB **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.
AUTOSIZEINCREMENT	Mandatory	string(uint64)	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64 MB to 100 GB
SPACERECYCLEMODE	Mandatory	string(enum)	Capacity recycle mode. **The value is described as follows:** 0: preferentially expands capacity. 1: preferentially deletes earlier snapshots.
ALTERNATEDATASTREAMS	Mandatory	enum	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: disabled 1: enabled
IsSupportAutoTier	Mandatory	string(bool)	Whether the tiering feature is supported. **The value is described as follows:** 0: no 1: yes
usedSSDCapacity	Mandatory	string(uint64)	Used SSD capacity. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ssdCapacityUpperLimit	Mandatory	string(uint64)	SSD capacity upper limit. **The value is described as follows:** -
rwStatus	Mandatory	enum	File system read-write status. **The value is described as follows:** 0: no access 1: read-only 3: read and write
securityStyle	Mandatory	enum	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 0: Mixed
enableBgrCompression	Mandatory	enum	Whether the background compression function is enabled. **The value is described as follows:** 0: disabled 1: enabled
enableBgrDedup	Mandatory	enum	Whether the background deduplication function is enabled. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
fileSystemMode	Mandatory	uint8	Usage mode of the file system. **The value is described as follows:** 1: HyperMetro 0: local
PARENTFILESYSTEMID	Mandatory	string	ID of a file system.
distAlg	Mandatory	enum	Directory distribution mode of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode 4: controller affinity mode
scheduleName	Mandatory	string	Name of a HyperCDP schedule.
isWormAuditLogFs	Mandatory	bool	Whether the file system is a WORM audit log file system. **The value is described as follows:** false: no true: yes
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** false: off true: on

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Parameter	Mandatory/ Conditional	Type	Description
QUOTASWITCHSTATUS	Mandatory	enum	Indicates the quota running status. **The value is described as follows:** 0: Off 1: On 2: Initializing 3: --

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Parameter	Mandatory/ Conditional	Type	Description
auditItems	Mandatory	enum	Audit item of the file system. **The value is described as follows:** 0:"none": indicates that no operation is audited. This parameter cannot be set together with other audit items. 1:"set_security": audits the set security operation. 2:"get_security": audits the get security operation. 4:"set_attr": audits the set attr operation. 8: "get_attr": audits the get attr operation. 16: "set_xattr": audits the set xattr operation. 32: "get_xattr": audits the get xattr operation. 64: "open": audits the open operation. 128: "close": audits the close operation. 256: "read": audits the read operation. 512: "write": audits the write operation. 1024: "create": audits the create operation. 2048: "delete": audits the delete operation. 4096: "rename": audits the rename operation. 8192: "list_folder": audits the list folder operation. 0xFFFFFFFF: "all": All the preceding operations are

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Parameter	Mandatory/ Conditional	Type	Description
			audited. If you need to set multiple audit items, separate them with commas (,). For example: audit_items=set_security,get_security.
oidReuseSwitch	Mandatory	uint8	OID reuse switch.
inodeLow32DtreeBit	Mandatory	uint32	Specifies the number of dtree ID bits in the low 32 bits of an inode ID. **The value is described as follows:** 0..5
fsCapacitySwitch	Mandatory	uint8	Switch for displaying the file system capacity. **The value is described as follows:** 0: off 1: on **Note:**After this function is enabled, the configured capacity instead of the actual available capacity is displayed when you query the capacity information about a thin file system.
characterSet	Mandatory	uint32	Character set. **The value is described as follows:** 0: UTF8 1: UTF8-MB4
metaOidReuseSwitch	Mandatory	uint8	Specifies whether to enable metadata OID reuse. **The value is described as follows:** 1:on; 0:off

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Parameter	Mandatory/ Conditional	Type	Description
vaaiSwitch	Mandatory	uint8	Whether to enable the VAAI feature. **The value is described as follows:** 0: Off; 1: On

Example

- Creating a file system.

```
Request: POST/deviceManager/rest/210235843910E6000009/filesystem
{
   "NAME": "FileSystem111",
   "DESCRIPTION": "",
   "ALLOCTYPE": "1",
   "SECTORSIZE": "8192",
   "APPLICATIONSCENARIO": "3",
   "PARENTID": "0",
   "INITIALALLOCCAPACITY": "20480",
   "PARENTTYPE": "216",
   "SNAPSHOTRESERVEPER": "20",
   "INITIALDISTRIBUTEPOLICY": "0",
   "ENABLEDEDUP": "false",
   "ISSHOWSNAPDIR": "true",
   "ssdCapacityUpperLimit": "2097152",
   "scheduleName":"haha",
   "fsCapacitySwitch":"1",
   "vaaiSwitch":"1"
}
Response:
{
   "data": {
      "ACTUALFILESYSTEMTYPE": "2",
      "ALLOCCAPACITY": "0",
      "ALLOCTYPE": "1",
      "ALTERNATEDATASTREAMS": "1",
      "APPLICATIONSCENARIO": "3",
      "ATIME": "false",
      "ATIMEUPDATEMODE": "4294967295",
      "AUTODELSNAPSHOTENABLE": "false",
      "AUTOGROWTHRESHOLDPERCENT": "85",
      "AUTOLOCKTIMEUNIT": "0",
      "AUTOSHRINKTHRESHOLDPERCENT": "50",
      "AUTOSIZEENABLE": "1",
      "AUTOSIZEINCREMENT": "1048576",
      "AVAILABLEANDALLOCCAPACITYRATIO": "0",
      "AVAILABLECAPCITY": "0",
      "CACHEPARTITIONID": "",
      "CAPACITY": "35184372088832",
      "CAPACITYTHRESHOLD": "90",
      "CASEPRESERVED": "true",
      "CASESENSITIVE": "true",
      "CHECKSUMENABLE": "true",
      "CHILDRENCLONEFSNUM": "0",
      "COMPRESSION": "0",
      "COMPRESSIONSAVEDCAPACITY": "0",
      "COMPRESSIONSAVEDRATIO": "0",
      "DATATRANSFERPOLICY": "0",
      "DEDUPSAVEDCAPACITY": "0",
      "DEDUPSAVEDRATIO": "0",
      "DEFPROTECTTIMEUNIT": "0",
```

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```
"DESCRIPTION": "",
"ENABLECOMPRESSION": "false",
"ENABLEDEDUP": "false",
"ENABLEDEDUPCHECK": "false",
"ENABLEROLLBACKMODE": "false",
"ENABLETIMINGSNAPSHOT": "false",
"HEALTHSTATUS": "1",
"HYPERMETROPAIRIDS": "[]",
"HYPERVAULTPAIRIDS": "[]",
"ID": "110",
"INITIALALLOCCAPACITY": "20480",
"INITIALDISTRIBUTEPOLICY": "0",
"IOCLASSID": "",
"IOPRIORITY": "1",
"ISCLONEFS": "false",
"ISDELETEPARENTSNAPSHOT": "false",
"ISSHOWSNAPDIR": "true",
"LOCALACCESSDEFINITIONREQUIRED": "4",
"MAXAUTOSIZE": "35184372088832",
"MAXFILENAMELENGTH": "256",
"MAXPROTECTTIMEUNIT": "0",
"MINAUTOSIZE": "35184372088832",
"MINPROTECTTIMEUNIT": "0",
"MINSIZEFSCAPACITY": "0",
"NAME": "FileSystem111",
"OWNINGCONTROLLER": "0B",
"PARENTFILESYSTEMID":"",
"PARENTFILESYSTEMNAME": "--",
"PARENTID": "0",
"PARENTNAME": "pool0",
"PARENTSNAPSHOTID": "",
"PARENTSNAPSHOTNAME":"",
"PARENTTYPE": 216,
"PATHNAMESEPARATORSTRING": "/",
"READONLY": "false",
"RECYCLESWITCH": "110",
"REMOTEREPLICATIONIDS": "[]",
"ROOT": "/FileSystem111",
"RUNNINGSTATUS": "53",
"SC_CACHEDSIZE": "0",
"SC_HITRAGE": "0",
"SECTORSIZE": "8192",
"SMARTCACHEPARTITIONID": "",
"SMARTCACHESTATE": "0",
"SNAPSHOTRESERVECAPACITY": "7036874417766",
"SNAPSHOTRESERVEPER": "20",
"SNAPSHOTUSECAPACITY": "0",
"SPACERECYCLEMODE": "0",
"SPACESELFADJUSTINGMODE": "0",
"SPLITENABLE": "false",
"SPLITPROGRESS": "-1",
"SPLITSPEED": "5",
"SPLITSTATUS": "0",
"SUBTYPE": "0",
"TIMINGSNAPSHOTMAXNUM": "21",
"TIMINGSNAPSHOTSCHEDULEID": "",
"TOTALSAVEDCAPACITY": "0",
"TOTALSAVEDRATIO": "0",
"TYPE": 40,
"WORKINGCONTROLLER": "0B",
"WORMAUTODEL": "false",
"WORMAUTOLOCK": "false",
"WORMAUTOLOCKTIME": "0",
"WORMCLOCKTIME": "0",
"WORMDEFPROTECTPERIOD": "0",
"WORMEXPIREDTIME": "0",
"WORMMAXPROTECTPERIOD": "0",
"WORMMINPROTECTPERIOD": "0",
"WORMTYPE": "0",
```


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```
        "WRITECHECK": "false",
        "inodeTotalCount": "0",
        "inodeUsedCount": "0",
        "IsSupportAutoTier": "1",
        "usedSSDCapacity": "0",
        "ssdCapacityUpperLimit": "2097152",
        "securityStyle": "0",
        "enableBgrCompression": "0",
        "enableBgrDedup": "0",
        "support32BitInode":"false",
        "rwStatus": "3",
        "distAlg":"2",
        "fileSystemMode": "0",
        "scheduleName":"haha",
        "vstoreId":"0",
        "vstoreName":"System_vStore",
        "isWormAuditLogFs":"false",
        "QUOTASWITCH": "false",
        "QUOTASWITCHSTATUS": "0",
        "auditItems":"0",
        "oidReuseSwitch":"1",
        "inodeLow32DtreeBit":"5",
        "fsCapacitySwitch":"1",
        "characterSet":"0",
        "metaOidReuseSwitch":"0",
        "vaaiSwitch":"1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.1.2 Delete

2.11.1.2.1 Interface for Deleting a File System

Function

This interface is used to delete a file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID.

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
forceDeleteFs	Optional	bool	Whether to forcibly delete the file system. **The value is described as follows:** 1: yes 0: no **Note:**This field is delivered only in developer mode.
SUBTYPE	Optional	uint32	Whether to delete the WORM file system. **The value is described as follows:** 1: yes 0: no

Result

N/A

Example

- Deleting a file system.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/filesystem/113

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.3 Modify

2.11.1.3.1 Interface for Changing the Scanning Status of the File System

Function

This interface is used to change the scanning status of the file system.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/change_file_system_scrub

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
file_system_id	Mandatory	string	File system ID. **The value is described as follows:** -
action	Mandatory	enum	Scan operation. **The value is described as follows:** 0: stop; 1: start
scan_range	Optional	enum	File system scan range. **The value is described as follows:** 1: all metadata; 2: all metadata and data; 7: CSS raw object

Result

N/A

Example

- Scan all metadata of the file system whose ID is "1".

```
Request: POST /deviceManager/rest/210235982610E7873965/change_file_system_scrub
{
   "file_system_id": "1",
   "action": "1",
      "scan_range":"1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Stop scanning the file system whose ID is "1".

```
Request: POST /deviceManager/rest/210235982610E7873965/change_file_system_scrub
{
    "file_system_id": "1",
    "action": "0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.3.2 Interface for Modifying a File System Object

Function

Modify a file system object.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/change_fs_object

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	uint32	File system ID. **The value is described as follows:** The value is an integer from 1 to 65535.
dtreeId	Mandatory	uint32	Dtree ID. **The value is described as follows:** The value is an integer ranging from 0 to 4294967296.

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Parameter	Mandatory/Optional/Conditional	Type	Description
objectType	Mandatory	uint32	Object type. **The value is described as follows:** The parameter value is cow, where: 1:"cow": The cow object is modified.
pfid		uint64	Parent object PFID. **The value is described as follows:** The value is an integer ranging from 0 and 18446744073709551615.
fid		uint64	Object FID. **The value is described as follows:** The value is an integer ranging from 0 and 18446744073709551615.
version		uint64	Object version number. **The value is described as follows:** The value is an integer ranging from 0 and 18446744073709551615.

Result

N/A

Example

- Modify a file system object.

```
Request: PUT /deviceManager/rest/201406091000000000000/change_fs_object
{
    "ID": 1,
    "dtreeId": 0,
    "objectType": 0,
    "pfid": 12675381151234260993,
    "fid": 15708555500268400644,
    "version": 3
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.3.3 Interface for Modifying File System Information

Function

This interface is used to modify a file system.

HighRisk

You are about to change the priority or the cache prefetch policy of file system ({0}). This operation may affect the file system performance. Suggestion: Before performing this operation, ensure that the preceding risk is acceptable and the correct file system is selected.
You are about to run a command to set the auto delete snapshot switch used by the system to delete the snapshot in this filesystem when the filesystem has insufficient capacity. If the switch is set to yes, there may be risks. Before running this command, ensure that you have selected the correct filesystem.
You are about to set the file system security style to NTFS. This operation may affect file system operations. Suggestion: If NTFS is selected, you are advised to set the mapping mode to support only user mapping in the current system and configure the default Windows user in the NFS service. The Windows user must be an existing local resource user or AD domain user.
You are about to set the file system security style to UNIX. This operation may affect file system operations. Suggestion: If UNIX is selected, you are advised to set the mapping mode to support only user mapping in the current system and configure the default UNIX user in the CIFS service. The UNIX user must be an existing local resource user or NIS or LDAP domain user.
You are about to set the audit log configuration items of the file system. This operation may interrupt services. If too many audit logs are generated and the audit log collection speed on the background is slower than the audit log writing speed on the foreground, the temporary buffer space may be insufficient and services may be interrupted. Suggestion: Configure the items properly. For example, configure only delete, create, and write items.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -
NAME	Optional	string	File system name. **The value is described as follows:** The value contains only digits, letters, underscores (_), periods (.), and hyphens (-). **Length:**1~255
DESCRIPTION	Optional	string	Description. **The value is described as follows:** - **Length:**0~255
CAPACITY	Optional	uint64	Configured capacity. **The value is described as follows:** - **Unit:**sectors
SNAPSHOTRESERVEP-ER	Optional	uint32	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%. **Unit:**%

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUTODELSNAPSHOTENABLE	Optional	bool	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: yes false: no
CAPACITYTHRESHOLD	Optional	uint64	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 99%. The default value is 90%.
SECTORSIZE	Optional	uint32	Block size. **The value is described as follows:** The value can be 8 KB, 16 KB, 32 KB, or 64 KB. **Unit:**bytes
OWNINGCONTROLLER	Optional	string	ID of the owning controller. **The value is described as follows:** - **Note:**This field is not supported in the current version.
CHECKSUMENABLE	Optional	bool	Data parity switch. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ATIME	Optional	bool	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: enabled false: disabled
ATIMEUPDATEMODE	Conditional	uint32	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day **Note:**If the value of the "ATIME" field is "true", this field must be set to 3600 or 86400. If the "ATIME" field is set to "false", the default value of this field is 4294967295.
READONLY	Optional	bool	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
IOPRIORITY	Optional	enum	I/O priority of the file system. **The value is described as follows:** 1: low 2: medium 3: high **Note:**This field is not supported in the current version.
ENABLECOMPRESSION	Optional	bool	Indicates whether compression is enabled. **The value is described as follows:** true: enabled false: disabled
COMPRESSION	Optional	enum	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression **Note:**This field is not supported in the current version.
ENABLEDEDUP	Optional	bool	Enables or disables deduplication. **The value is described as follows:** true: enabled false: disabled
WORMMINPROTECTPERIOD	Optional	uint64	Minimum protection period. **The value is described as follows:** infinite is supported. The value of infinite is 18446744073709551615.

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Parameter	Mandatory/Optional/Conditional	Type	Description
WORMMAXPROTECTPERIOD	Optional	uint64	Maximum protection period. **The value is described as follows:** In addition, infinite is supported. The value of infinite is 18446744073709551615.
WORMDEFPROTECTPERIOD	Optional	uint64	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period.
WORMAUTOLOCK	Optional	bool	Automatic lock mode of WORM. **The value is described as follows:** true: enabled false: disabled
WORMAUTOLOCKTIME	Optional	uint32	Automatic lock time. **The value is described as follows:** Value range: 1 minute to 10 years.
WORMAUTODEL	Optional	bool	Automatic deletion mode. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
WRITECHECK	Optional	bool	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported in the current version.
TIMINGSNAPSHOTMAXNUM	Optional	uint32	Maximum number of periodic snapshots. **The value is described as follows:** 1 to 2048 **Note:**This field is not supported in the current version.
ISSHOWSNAPDIR	Optional	bool	Whether the snapshot directory is visible. **The value is described as follows:** true: yes false: no
DATATRANSFERPOLICY	Optional	enum	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEROLLBACKMODE	Optional	bool	Rollback mode of read-only snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This field has been discarded.
SNAPSHOTRESERVE-CAPACITY	Optional	uint64	Reserved snapshot space. **The value is described as follows:** - **Note:**This field is not supported in the current version.
ENABLETIMINGSNAP-SHOT	Optional	bool	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported in the current version.
SMARTCACHESTATE	Optional	enum	SmartCache status. **The value is described as follows:** 0: disabled 1: enabled 2: pool status inherited **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MINPROTECTTIMEUNIT	Conditional	enum	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is delivered only when the specified file system is a WORM file system.
MAXPROTECTTIMEUNIT	Conditional	enum	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is delivered only when the specified file system is a WORM file system.
DEFPROTECTTIMEUNIT	Conditional	enum	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is delivered only when the specified file system is a WORM file system.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUTOLOCKTIMEUNIT	Conditional	enum	Automatic lock time unit. **The value is described as follows:** 44: minute 45: hour 46: day 47: month 48: year **Note:**This field is delivered only when the specified file system is a WORM file system.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.
SPACESELFADJUSTINGMODE	Optional	enum	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: disabled 1: automatic capacity expansion 2: automatic capacity expansion and reduction
AUTOSIZEENABLE	Optional	enum	Switch of automatic capacity adjustment. **The value is described as follows:** 0: disabled 1: enabled **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUTOSHRINKTHRESHOLDPERCENT	Optional	uint32	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1 to 97 **Unit:**% **Note:**The auto reduction trigger threshold (%) must be less than the auto expansion trigger threshold (%).
AUTOGROWTHRESHOLDPERCENT	Optional	uint32	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 2 to 98 **Unit:**% **Note:**The auto expansion trigger threshold (%) must be greater than the auto reduction trigger threshold (%), and less than the total capacity alarm threshold (%).
MINAUTOSIZE	Optional	uint64	Lower limit of the automatic reduction. **The value is described as follows:** 1 GB to 32 PB **Default:**Total capacity of the file system. **Unit:**sectors **Note:**The auto reduction lower limit must be less than or equal to the auto expansion upper limit, and less than or equal to the total capacity of the file system.

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Parameter	Mandatory/Optional/Conditional	Type	Description
MAXAUTOSIZE	Optional	uint64	Upper limit of the automatic expansion. **The value is described as follows:** 1 GB to 32 PB **Default:**1.2 times of the total capacity of the file system. **Unit:**sectors **Note:**The auto expansion upper limit must be greater than or equal to the auto reduction lower limit, and greater than or equal to the total capacity of the file system.
AUTOSIZEINCREMENT	Optional	uint64	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64 MB to 100 GB **Unit:**sectors **Note:**This field is not supported in the current version.
SPACERECYCLEMODE	Optional	enum	Capacity recycle mode. **The value is described as follows:** 0: preferentially expands capacity. 1: preferentially deletes earlier snapshots. **Note:**This field is not supported in the current version.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ALLOCTYPE	Optional	enum	Space allocation type. **The value is described as follows:** 1: thin file system **Note:**This field is not supported in the current version.
SPLITSPEED	Optional	enum	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest
ALTERNATEDATASTREAMS	Optional	enum	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: disabled 1: enabled **Note:**This field is not supported in the current version.
SSDCAPACITYUPPER-LIMIT	Optional	uint64	SSD capacity upper limit. **The value is described as follows:** - **Unit:**sectors **Note:**This field is not supported in the current version.
securityStyle	Optional	enum	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed

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Parameter	Mandatory/Optional/Conditional	Type	Description
enableBgrCompression	Optional	enum	Indicates whether to enable the background compression function. **The value is described as follows:** 0: disabled 1: enabled **Note:**This field is not supported in the current version.
enableBgrDedup	Optional	enum	Indicates whether to enable the background deduplication function. **The value is described as follows:** 0: disabled 1: enabled **Note:**This field is not supported in the current version.
userView	Optional	uint32	User view. **The value is described as follows:** 0 to 2. **Note:** 0: user 1: engineer 2: developer
support32BitInode	Optional	bool	Whether 32-bit inodes are supported. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/Optional/Conditional	Type	Description
unixPermissions	Optional	string	UNIX permissions of the file system root directory. **The value is described as follows:** The value consists of three digits whose meanings are as follows: The first digit refers to the permissions of the owner. The second digit refers to the permissions of the user group to which the file belongs. The last digit refers to the permissions of everyone else. The digits are from 0 to 7 whose meanings are as follows: 0: No permission; 1: Execute permission; 2: Write permission; 3: Write and execute permissions; 4: Read permission; 5: Read and execute permissions; 6: Read and write permissions; 7: All permissions (read, write, and execute). **Default:**755 **Length:**3

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Parameter	Mandatory/Optional/Conditional	Type	Description
distAlg	Optional	enum	Directory distribution mode of the file system. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode 4: controller affinity mode **Default:**0
isWormAuditLogFs	Optional	bool	Indicates whether the file system is a WORM audit log file system. **The value is described as follows:** false: no true: yes **Note:**This parameter is valid only for the WORM file system.
QUOTASWITCH	Optional	bool	Quota switch. **The value is described as follows:** 0: off 1: on **Default:**0: off

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Parameter	Mandatory/Optional/Conditional	Type	Description
auditItems	Optional	enum	Audit item of the file system. **The value is described as follows:** 0:"none": indicates that no operation is audited. This parameter cannot be set together with other audit items. 1:"set_security": audits the set security operation. 2:"get_security": audit the get security operation. 4:"set_attr": audits the set attr operation. 8: "get_attr": audits the get attr operation. 16: "set_xattr": audits the set xattr operation. 32: "get_xattr": audits the get xattr operation. 64: "open": audits the open operation. 128: "close": audits the close operation. 256: "read": audits the read operation. 512: "write": audits the write operation. 1024: "create": audits the create operation. 2048: "delete": audits the delete operation. 4096: "rename": audits the rename operation. 8192: "list_folder": audits the list folder operation. 0xFFFFFFFF: "all": All the preceding operations are

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Parameter	Mandatory/Optional/Conditional	Type	Description
			audited. If you need to set multiple audit items, separate them with commas (,). For example: audit_items=set_security,get_security. **Default:**0
oidReuseSwitch	Optional	uint8	OID reuse switch. **The value is described as follows:** 1: on; 0: off **Default:**1: on
inodeLow32DtreeBit	Optional	uint32	Specifies the number of dtree ID bits in the low 32 bits of an inode ID. **The value is described as follows:** 0..5
fsCapacitySwitch	Optional	uint8	Switch for displaying the file system capacity. **The value is described as follows:** 0: off 1: on **Default:**0: off **Note:**After this function is enabled, the configured capacity instead of the actual available capacity is displayed when you query the capacity information about a thin file system.

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Parameter	Mandatory/Optional/Conditional	Type	Description
nasLockingPolicy	Optional	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Default:**0: Mandatory
characterSet	Optional	uint32	Character set. **The value is described as follows:** 0: UTF8 1: UTF8-MB4 **Default:**0:UTF8
vaaiSwitch	Optional	uint8	Whether to enable the VAAI feature. **The value is described as follows:** 0: Off 1: On.
fsGen	Optional	uint32	Internal serial number of the file system. **The value is described as follows:** 0..255
vaaiSupportOffload-Switch	Optional	enum	Indicates whether to uninstall the VAAI capability. **The value is described as follows:** 0: Off; 1: On
metaOidReuseSwitch	Optional	uint8	Metadata OID reuse switch. **The value is described as follows:** 1:on; 0:off

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Result

N/A

Example

- Modifying a file system.

```
Request: PUT /deviceManager/rest/210235843910E6000009/filesystem/3
{
    "SECTORSIZE": "16384",
    "IOPRIORITY": "3",
    "DATATRANSFERPOLICY": "2"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.4 Query

2.11.1.4.1 Interface for Batch Querying File System Information

Function

This interface is used to batch query basic information about file systems.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: NAME, HEALTHSTATUS, RUNNINGSTATUS, ISCLONEFS, and isAuditLogFs.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
PARENTSNAPSHOTID	Optional	string	Snapshot ID. **The value is described as follows:** The value is the snapshot ID.
PARENTSNAPSHOTNAME	Optional	string	Name of the parent file system snapshot. **The value is described as follows:** Name of an existing read-only snapshot.
PARENTFILESYSTEMID	Optional	uint32	ID of the parent file system to be queried. **The value is described as follows:** You can run the show file_system general command to obtain the value.
PARENTFILESYSTEM-NAME	Optional	string	Name of the parent file system. **The value is described as follows:** To obtain the value, run "show file_system general".

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Parameter	Mandatory/Optional/Conditional	Type	Description
RSSTYPE	Optional	enum	Type of file systems that support value-added features. **The value is described as follows:** 23: primary file system that supports remote replication 24: secondary file system that supports remote replication 27: primary file system that supports NAS HyperMetro 28: secondary file system that supports NAS HyperMetro 29: primary file system that supports HyperVault 30: secondary file system that supports HyperVault **Note:**In version 6.1.5, only RSSTYPE = 27 can be used to query the primary file system for which NAS HyperMetro can be created.
parentFileSystemV-storeId	Optional	uint32	vStore ID of the parent file system. **The value is described as follows:** The value ranges from 0 to 1023. To obtain the value, run the "show vstore" command without parameters. **Length:**31

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Parameter	Mandatory/Optional/Conditional	Type	Description
parentFileSystemV-storeName	Optional	string	vStore name of the parent file system. **The value is described as follows:** The value is a string of 1 to 256 characters consisting of letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
selectFields	Optional	string	Column parameters in the command output. **Note:** Use commas (,) to separate column names that need to be displayed in the command output. Example: selectFields=ID,NAME,ALLOCTYPE
showGNSEnable	Optional	enum	Whether to display the global namespace. **The value is described as follows:** 0:OFF;1:ON

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system
ID	Mandatory	string	File system ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters, containing only digits, letters, and special characters: underscores (_), periods (.), and hyphens (-).
RECYCLESWITCH	Mandatory	string(enum)	Recycle bin switch. **The value is described as follows:** 0: disabled 1: enabled
ENABLEDEDUP	Mandatory	string(bool)	Whether deduplication is enabled. **The value is described as follows:** true: enabled false: disabled
CAPACITYTHRESHOLD	Mandatory	string(uint64)	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 95%. The default value is 90%.
IOCLASSID	Mandatory	string	I/O class.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool
PARENTID	Mandatory	string	Storage pool ID.
PARENTNAME	Mandatory	string	Storage pool name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 35: Invalid 53: Initializing
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(enum)	File system type. **The value is described as follows:** 0: common file system 1: WORM file system
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin file system
CAPACITY	Mandatory	string(uint64)	Configured capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
INITIALALLOCCAPACITY	Mandatory	string(uint64)	Initially allocated capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
SNAPSHOTRESERVEPER	Mandatory	string(uint32)	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%. **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELSNAPSHOTENABLE	Mandatory	string(bool)	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: enabled false: disabled
SNAPSHOTUSECAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **Unit:**sectors **Note:**The sector size is 512 bytes.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **Unit:**sectors **Note:**The sector size is 512 bytes. (This parameter is not used currently. The allocatedPoolQuota parameter is used actually.)
SECTORSIZE	Mandatory	string(uint32)	Block size. **The value is described as follows:** The value can only be 8 KB, 16 KB, 32 KB, or 64 KB. **Unit:**bytes
OWNINGCONTROLLER	Mandatory	string	ID of the owning controller.
WORKINGCONTROLLER	Mandatory	string	ID of the working controller.
CHECKSUMENABLE	Mandatory	string(bool)	Data parity switch. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ATIME	Mandatory	string(bool)	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: enabled false: disabled
SPLITPROGRESS	Mandatory	string(uint32)	Splitting progress. **The value is described as follows:** - **Unit:**%
ATIMEUPDATEMODE	Mandatory	string(uint32)	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day
READONLY	Mandatory	string(bool)	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes
IOPRIORITY	Mandatory	string(enum)	File system I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
CACHEPARTITIONID	Mandatory	string	Cache partition ID.

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Parameter	Mandatory/ Conditional	Type	Description
ISCLONEFS	Mandatory	string(bool)	Indicates whether this is a clone file system. **The value is described as follows:** true: yes false: no
ENABLECOMPRESSION	Mandatory	string(bool)	Compression enabled or not. **The value is described as follows:** true: enabled false: disabled
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
WORMTYPE	Mandatory	string(enum)	WORM service type. **The value is described as follows:** 1: regulatory compliance mode 3: enterprise compliance mode
WORMMINPROTECTPERIOD	Mandatory	string(uint64)	Minimum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. In addition, infinite is supported. **Unit:**days

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Parameter	Mandatory/ Conditional	Type	Description
WORMMAXPROTECTPERIOD	Mandatory	string(uint64)	Maximum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. The default value is 70 years. In addition, infinite is supported. **Unit:**days
WORMDEFPROTECTPERIOD	Mandatory	string(uint64)	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period.
WORMAUTOLOCK	Mandatory	string(bool)	Automatic lock mode of WORM. **The value is described as follows:** true: enabled false: disabled
WORMAUTOLOCKTIME	Mandatory	string(uint32)	Automatic lock time. **The value is described as follows:** The default value is 2 hours. The value ranges from 2 hours to 7 days.
WORMAUTODEL	Mandatory	string(bool)	Automatic deletion mode of WORM. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
WRITECHECK	Mandatory	string(bool)	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: enabled false: disabled
TIMINGSNAPSHOTMAXNUM	Mandatory	string(uint32)	Maximum number of periodic snapshots.
ISSHOWSNAPDIR	Mandatory	string(bool)	Snapshot directory visible or not. **The value is described as follows:** true: yes false: no
DATATRANSFERPOLICY	Mandatory	string(enum)	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
INITIALDISTRIBUTE-POLICY	Mandatory	string(enum)	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
PARENTSNAPSHOTNAME	Mandatory	string	Name of the parent read-only snapshot. **Note:**This field must be returned if the specified file system is a clone file system.
PARENTFILESYSTEMID	Mandatory	string	Parent file system ID.
PARENTFILESYSTEM-NAME	Mandatory	string	Name of the parent file system.
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: no protection 1: based on capacity 2: based on performance 3: based on high performance 4: based on tiers
SMARTCACHEPARTI-TIONID	Mandatory	string	SmartCache partition ID. **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEROLLBACKMODE	Conditional	string(bool)	Rollback mode of read-only snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This field has been discarded.
AVAILABLECAPCITY	Mandatory	string(uint64)	Available file system capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
AVAILABLEANDALLOCCAPACITYRATIO	Mandatory	string(uint32)	Percentage of used file system capacity to the total capacity. **Unit:**%
ENABLETIMINGSNAP-SHOT	Mandatory	string(bool)	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: enabled false: disabled
TIMINGSNAPSHOTSCHEDULEID	Mandatory	string	Timing policy ID of file system read-only snapshots.
ROOT	Mandatory	string	Root path.
LOCALACCESSDEFINI-TIONREQUIRED	Mandatory	string(enum)	Local access options are supported. **The value is described as follows:** 2: A file system needs to be defined in the local access. 3: A file system needs to be defined at a fixed directory in the local access. 4: A file system does not need to be defined in the local access.

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Parameter	Mandatory/ Conditional	Type	Description
litigationFileNum	Mandatory	uint64	Number of regulatory documents.
PATHNAMESEPARATORSTRING	Mandatory	string	Directory separator.
CASESENSITIVE	Mandatory	string(bool)	Indicates whether a file name is case-sensitive. **The value is described as follows:** true: yes false: no
CASEPRESERVED	Mandatory	string(bool)	Indicates whether the file name size is reserved. **The value is described as follows:** true: yes false: no
MAXFILENAMELENGTH	Mandatory	string(uint32)	Maximum file name length.
ACTUALFILESYSTEM-TYPE	Mandatory	string(enum)	Actual file system type. **The value is described as follows:** 1: Wushan file system 2: NOFS
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by deduplication. **Unit:**sectors **Note:**The sector size is 512 bytes.
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Capacity saved by compression. **Unit:**sectors **Note:**The sector size is 512 bytes.
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total capacity saved. **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
SMARTCACHESTATE	Mandatory	string(enum)	SmartCache status. **The value is described as follows:** 0: disabled 1: enabled 2: pool status inherited **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_CACHEDSIZE	Mandatory	string(uint32)	SmartCache size. **Unit:**KB **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio (%). **Unit:**% **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
MINPROTECTTIMEUNIT	Mandatory	string(enum)	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year
MAXPROTECTTIMEUNIT	Mandatory	string(enum)	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year

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Parameter	Mandatory/ Conditional	Type	Description
DEFPROTECTTIMEU-NIT	Mandatory	string(enum)	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year
AUTOLOCKTIMEUNIT	Mandatory	string(enum)	Automatic lock time unit. **The value is described as follows:** 44: minute 45: hour 46: day 47: month 48: year
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **Unit:**%
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **Unit:**%
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **Unit:**%
WORMCLOCKTIME	Mandatory	string(uint64)	WORM clock time. **Unit:**seconds
WORMEXPIREDTIME	Conditional	string(uint64)	WORM expiration time. **Unit:**seconds **Note:**This field is returned only when the specified file system is a WORM file system.
MINSIZEFSCAPACITY	Mandatory	string(uint64)	Minimum space that can be reduced for a thin file system. **Unit:**sectors

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Parameter	Mandatory/ Conditional	Type	Description
inodeTotalCount	Mandatory	string(uint32)	Total number of inodes.
inodeUsedCount	Mandatory	string(uint32)	Number of used inodes.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
PARENTSNAPSHOTID	Mandatory	string	ID of the parent read-only snapshot.
ENABLEDEDUPCHECK	Conditional	string	Whether to enable the function of checking byte by byte. **The value is described as follows:** The default value is false. **Note:**This field is valid for the CLI only.
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	IDs of remote replication tasks.
APPLICATIONSCENAR-IO	Mandatory	string(enum)	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined
HYPERVAULTPAIRIDS	Mandatory	string(array)	HyperVault pair IDs.
HYPERMETROPAIRIDS	Mandatory	string(array)	HyperMetro pair IDs.
SNAPSHOTRESERVE-CAPACITY	Mandatory	string(uint64)	Reserved snapshot space.
CHILDRENCLONEFS-NUM	Mandatory	string(uint32)	Number of child clone file systems.

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Parameter	Mandatory/ Conditional	Type	Description
ISDELETEPARENTS-NAPSHOT	Mandatory	string(bool)	Whether to delete the read-only snapshots associated with the parent file system. **The value is described as follows:** true: yes false: no
SPLITENABLE	Mandatory	string(bool)	Splitting switch. **The value is described as follows:** true: starts splitting. false: stops splitting.
SPLITSPEED	Mandatory	string(enum)	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The other values returned are invalid.
SPLITSTATUS	Mandatory	string(enum)	Splitting status. **The value is described as follows:** 1: Not started 2: Splitting 3: Queuing 4: Terminated abnormally 5: Pausing **Note:**The other values returned are invalid.

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Parameter	Mandatory/ Conditional	Type	Description
SPACESELFADJUSTINGMODE	Mandatory	string(enum)	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: disabled 1: automatic capacity expansion 2: automatic capacity expansion and reduction
AUTOSIZEENABLE	Mandatory	string(enum)	Switch of automatic capacity adjustment. **The value is described as follows:** 0: disabled 1: enabled
AUTOSHRINKTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1 to 99 **Unit:**% **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
AUTOGROWTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 1 to 99 **Unit:**% **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.
MINAUTOSIZE	Mandatory	string(uint64)	Lower limit of the automatic reduction. **The value is described as follows:** 1 GB to 16 PB **Unit:**sectors **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.
MAXAUTOSIZE	Mandatory	string(uint64)	Upper limit of the automatic expansion. **The value is described as follows:** 1 GB to 16 PB **Unit:**sectors **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
SPACERECYCLEMODE	Mandatory	string(enum)	Capacity reclamation mode. **The value is described as follows:** 0: automatic capacity expansion preferred 1: automatic snapshot deletion preferred
AUTOSIZEINCREMENT	Mandatory	string(uint64)	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64 MB to 100 GB **Unit:**sectors
allocatedPoolQuota	Mandatory	string(uint64)	Capacity quota in the pool that a file system has applied for. **Unit:**sectors
tierCnt	Mandatory	string(uint32)	Number of disk types in the storage pool to which the file system belongs. **The value is described as follows:** 0..2
rwStatus	Mandatory	enum	File system read-write status. **The value is described as follows:** 0: no access 1: read-only 3: read and write
ALTERNATEDATASTREAMS	Mandatory	string(enum)	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
dtreeCount	Mandatory	uint32	Number of dtrees for the file system. **The value is described as follows:** 0..4096
quotaCfgCount	Mandatory	uint32	Number of configured quotas. **The value is described as follows:** 0..33554432
replicationCount	Mandatory	uint32	Number of remote replication pairs. **The value is described as follows:** 0..16
fsSnapCount	Mandatory	uint32	Number of snapshots. **The value is described as follows:** 0..4096
workloadTypeId	Conditional	uint32	ID of the application type. **The value is described as follows:** 0 to 143.
shareNumbers	Mandatory	array	Number of shares of each type. **The value is described as follows:** [Number of NFS shares,Number of CIFS shares]
securityStyle	Mandatory	enum	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed

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Parameter	Mandatory/ Conditional	Type	Description
nasLockingPolicy	Conditional	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Note:**This parameter is returned only when the security style is Native.
support32BitInode	Mandatory	bool	Whether 32-bit inodes are supported. **The value is described as follows:** true: yes false: no
isAuditLogFs	Mandatory	bool	Whether it is an audit log file system. **The value is described as follows:** true: yes false: no
fileSystemMode	Mandatory	uint8	Usage mode of the file system. **The value is described as follows:** 1: HyperMetro 0: local
IsSupportAutoTier	Mandatory	bool	Whether the tiering feature is supported. **The value is described as follows:** 0: does not support the tiering feature. 1: supports the storage tiering feature.

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Parameter	Mandatory/ Conditional	Type	Description
distAlg	Mandatory	enum	Distribution algorithm. **The value is described as follows:** 0: performance mode 1: capacity balance mode
enableBgrCompression	Mandatory	bool	Indicates whether to enable the background compression function. **The value is described as follows:** 0: disabled 1: enabled
enableBgrDedup	Mandatory	bool	Indicates whether to enable the background deduplication function. **The value is described as follows:** 0: disabled 1: enabled
ssdCapacityUpperLimit	Mandatory	string(uint64)	SSD capacity upper limit. **The value is described as follows:** - **Unit:**sectors
usedSSDCapacity	Mandatory	string(uint64)	Used SSD capacity. **Unit:**sectors
isWormAuditLogFs	Mandatory	uint	Whether it is a WORM file system for storing audit logs. **The value is described as follows:** 0: no 1: yes

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Parameter	Mandatory/ Conditional	Type	Description
createTime	Conditional	string(uint64)	Time when the file system is created. **Note:**This parameter is returned only when the file system has the creation time field.
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: disabled 1: enabled
QUOTASWITCHSTATUS	Mandatory	enum	Indicates the quota running status. **The value is described as follows:** 0: disabled 1: enabled 2: initializing 3: --

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Parameter	Mandatory/ Conditional	Type	Description
auditItems	Mandatory	enum	Audit item of the file system. **The value is described as follows:** 1:"none": indicates that no operation is audited. This parameter cannot be set together with other audit items. 2:"set_security": audits the set security operation. 3:"get_security": audits the get security operation. 4:"set_attr": audits the set attr operation. 5:"get_attr": audits the get attr operation. 6:"set_xattr": audits the set xattr operation. 7:"get_xattr": audits the get xattr operation. 8:"open": audits the open operation. 9:"close": audits the close operation. 10:"read": audits the read operation. 11:"write": audits the write operation. 12:"create": audits the create operation. 13:"delete": audits the delete operation. 14:"rename": audits the rename operation. 15:"list_folder": audits the list folder operation. 16:"all": All the preceding operations are audited.

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Parameter	Mandatory/ Conditional	Type	Description
			If you need to set multiple audit items, separate them with commas (,). For example: audit_items=set_security,get_security.
oidReuseSwitch	Mandatory	uint8	OID reuse switch. **The value is described as follows:** 1: enabled 0: disabled
inodeLow32DtreeBit	Mandatory	uint32	Specifies the number of dtree ID bits in the low 32 bits of an inode ID. **The value is described as follows:** 0..5
fsCapacitySwitch	Mandatory	uint8	Switch for displaying the file system capacity. **The value is described as follows:** 0: off 1: on **Note:**After this function is enabled, the configured capacity instead of the actual available capacity is displayed when you query the capacity information about a thin file system.
vaaiSwitch	Mandatory	uint8	Whether to enable the VAAI feature. **The value is described as follows:** 0: Off 1: On

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Parameter	Mandatory/ Conditional	Type	Description
metaOidReuseSwitch	Mandatory	uint8	Specifies whether to enable metadata OID reuse. **The value is described as follows:** 1:on; 0:off
vaaiSupportOffload-Switch	Mandatory	enum	Indicates whether to uninstall the VAAI capability. **The value is described as follows:** 0: Off; 1: On

Example

- Batch querying basic information about file systems.

```
Request: GET /deviceManager/rest/210235843910E6000009/filesystem?filter=HEALTHSTATUS:1

Response: {
   "data":[
{
        "ACTUALFILESYSTEMTYPE": "2",
        "ALLOCCAPACITY": "21293484",
        "ALLOCTYPE": "1",
        "APPLICATIONSCENARIO": "3",
        "ATIME": "false",
        "ATIMEUPDATEMODE": "off",
        "AUTODELSNAPSHOTENABLE": "false",
        "AUTOGROWTHRESHOLDPERCENT": "85",
        "AUTOLOCKTIMEUNIT": "46",
        "AUTOSHRINKTHRESHOLDPERCENT": "50",
        "AUTOSIZEENABLE": "1",
        "AUTOSIZEINCREMENT": "2097152",
        "AVAILABLEANDALLOCCAPACITYRATIO": "20",
        "AVAILABLECAPCITY": "83564112",
        "CACHEPARTITIONID": "",
        "CAPABILITY": "2",
        "CAPACITY": "104857600",
        "CAPACITYTHRESHOLD": "90",
        "CASEPRESERVED": "true",
        "CASESENSITIVE": "true",
        "CHECKSUMENABLE": "true",
        "CHILDRENCLONEFSNUM": "0",
        "COMPRESSION": "0",
        "COMPRESSIONSAVEDCAPACITY": "0",
        "COMPRESSIONSAVEDRATIO": "0",
        "DATATRANSFERPOLICY": "0",
        "DEDUPSAVEDCAPACITY": "0",
        "DEDUPSAVEDRATIO": "0",
        "DEFPROTECTTIMEUNIT": "48",
        "DESCRIPTION": "",
        "ENABLECOMPRESSION": "true",
        "ENABLEDEDUP": "true",
        "ENABLEDEDUPCHECK": "false",
        "ENABLEROLLBACKMODE": "false",
        "ENABLETIMINGSNAPSHOT": "false",
        "HEALTHSTATUS": "1",
```

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```
"HYPERMETROPAIRIDS": "[\"223c1e09335a0027\"]",
"HYPERVAULTPAIRIDS": "[]",
"ID": "40",
"INITIALALLOCCAPACITY": "0",
"INITIALDISTRIBUTEPOLICY": "0",
"IOCLASSID": "",
"IOPRIORITY": "1",
"ISCLONEFS": "false",
"ISDELETEPARENTSNAPSHOT": "false",
"ISSHOWSNAPDIR": "true",
"IsSupportAutoTier":"false",
"LOCALACCESSDEFINITIONREQUIRED": "4",
"MAXAUTOSIZE": "125829120",
"MAXFILENAMELENGTH": "256",
"MAXPROTECTTIMEUNIT": "48",
"MINAUTOSIZE": "104857600",
"MINPROTECTTIMEUNIT": "48",
"MINSIZEFSCAPACITY": "22573056",
"NAME": "fs40",
"OWNINGCONTROLLER": "0A",
"PARENTFILESYSTEMNAME": "--",
"PARENTID": "0",
"PARENTNAME": "pool0",
"PARENTSNAPSHOTID": "",
"PARENTSNAPSHOTNAME":"",
"PARENTFILESYSTEMID":"",
"PARENTTYPE": 216,
"PATHNAMESEPARATORSTRING": "/",
"READONLY": "false",
"RECYCLESWITCH": "40",
"REMOTEREPLICATIONIDS": "[]",
"ROOT": "/fs40",
"RUNNINGSTATUS": "27",
"SC_CACHEDSIZE": "0",
"SC_HITRAGE": "0",
"SECTORSIZE": "8192",
"SMARTCACHEPARTITIONID": "",
"SMARTCACHESTATE": "0",
"SNAPSHOTRESERVECAPACITY": "20971520",
"SNAPSHOTRESERVEPER": "20",
"SNAPSHOTUSECAPACITY": "0",
"SPACERECYCLEMODE": "0",
"SPACESELFADJUSTINGMODE": "0",
"SPLITENABLE": "false",
"SPLITPROGRESS": "-1",
"SPLITSPEED": "5",
"SPLITSTATUS": "5",
"SUBTYPE": "0",
"TIMINGSNAPSHOTMAXNUM": "16",
"TIMINGSNAPSHOTSCHEDULEID": "",
"TOTALSAVEDCAPACITY": "0",
"TOTALSAVEDRATIO": "0",
"TYPE": 40,
"WORKINGCONTROLLER": "0A",
"WORMAUTODEL": "false",
"WORMAUTOLOCK": "false",
"WORMAUTOLOCKTIME": "1",
"WORMCLOCKTIME": "646",
"WORMDEFPROTECTPERIOD": "30",
"WORMEXPIREDTIME": "9223372036854775807",
"WORMMAXPROTECTPERIOD": "40",
"WORMMINPROTECTPERIOD": "10",
"WORMTYPE": "1",
"WRITECHECK": "false",
"allocatedPoolQuota": "23068672",
"distAlg":"0",
"dtreeCount": "100",
"enableBgrCompression":"false",
"enableBgrDedup":"false",
```


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```
            "inodeTotalCount": "10485760",
            "inodeUsedCount": "0",
            "rwStatus": "3",
            "securityStyle": "3",
            "tierCnt": "2",
            "usedSSDCapacity":"100",
            "vstoreId": "1",
            "ALTERNATEDATASTREAMS": "0",
            "vstoreName": "vsUser1",
            "shareType": "['CIFS','NFS']",
            "quotaConfigured": "true",
            "protection": "[{
                             feature: 'Snapshot'
                            }, {
                             feature: 'AsyncReplication'
                           }]",
            "quotaCfgCount": "0",
            "replicationCount": "0",
            "fsSnapCount": "0",
            "workloadTypeId": "0",
            "shareNumbers": [0,0],
            "ssdCapacityUpperLimit":"100",
            "support32BitInode": "false",
            "isAuditLogFs": "false",
            "fileSystemMode": "0",
            "PARENTFILESYSTEMID": "5",
            "litigationFileNum": "5",
            "isWormAuditLogFs": "0",
            "createTime":"1628751492",
            "QUOTASWITCH": "false",
            "QUOTASWITCHSTATUS": "0",
            "auditItems":"0",
            "oidReuseSwitch":"1",
            "inodeLow32DtreeBit":"5",
            "fsCapacitySwitch":"1",
            "vaaiSwitch":"1",
            "metaOidReuseSwitch":"0",
            "vaaiSupportOffloadSwitch":"1"
        }
],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query basic file system information in batches by specifying column parameters.


```
Request: /deviceManager/rest/2102350RMG10GB000015/filesystem?selectFields=NAME,ALLOCTYPE

Response: {
    "data": [
        {
            "NAME": "file10017",
            "ALLOCTYPE": "1"
        },
        {
            "NAME": "file10018",
            "ALLOCTYPE": "1"
        },
        {
            "NAME": "file10019",
            "ALLOCTYPE": "1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
```


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```
    }
}
```

- Query basic file system information in batches by enabling global namespace display and specifying the range starting from 0.

```
Request: /deviceManager/rest/ST00000000000000219/filesystem?
vstoreId=1&showGNSEnable=1&range=[0-100]

Response: {
   "data": [
      {
         "ID": "18446744073709551613",
         "NAME": "/"
      },
      {
         "ACTUALFILESYSTEMTYPE": "2",
         "ALLOCCAPACITY": "21293484",
         "ALLOCTYPE": "1",
         "APPLICATIONSCENARIO": "3",
         "ATIME": "false",
         "ATIMEUPDATEMODE": "off",
         "AUTODELSNAPSHOTENABLE": "false",
         "AUTOGROWTHRESHOLDPERCENT": "85",
         "AUTOLOCKTIMEUNIT": "46",
         "AUTOSHRINKTHRESHOLDPERCENT": "50",
         "AUTOSIZEENABLE": "1",
         "AUTOSIZEINCREMENT": "2097152",
         "AVAILABLEANDALLOCCAPACITYRATIO": "20",
         "AVAILABLECAPCITY": "83564112",
         "CACHEPARTITIONID": "",
         "CAPABILITY": "2",
         "CAPACITY": "104857600",
         "CAPACITYTHRESHOLD": "90",
         "CASEPRESERVED": "true",
         "CASESENSITIVE": "true",
         "CHECKSUMENABLE": "true",
         "CHILDRENCLONEFSNUM": "0",
         "COMPRESSION": "0",
         "COMPRESSIONSAVEDCAPACITY": "0",
         "COMPRESSIONSAVEDRATIO": "0",
         "DATATRANSFERPOLICY": "0",
         "DEDUPSAVEDCAPACITY": "0",
         "DEDUPSAVEDRATIO": "0",
         "DEFPROTECTTIMEUNIT": "48",
         "DESCRIPTION": "",
         "ENABLECOMPRESSION": "true",
         "ENABLEDEDUP": "true",
         "ENABLEDEDUPCHECK": "false",
         "ENABLEROLLBACKMODE": "false",
         "ENABLETIMINGSNAPSHOT": "false",
         "HEALTHSTATUS": "1",
         "HYPERMETROPAIRIDS": "[\"223c1e09335a0027\"]",
         "HYPERVAULTPAIRIDS": "[]",
         "ID": "40",
         "INITIALALLOCCAPACITY": "0",
         "INITIALDISTRIBUTEPOLICY": "0",
         "IOCLASSID": "",
         "IOPRIORITY": "1",
         "ISCLONEFS": "false",
         "ISDELETEPARENTSNAPSHOT": "false",
         "ISSHOWSNAPDIR": "true",
         "IsSupportAutoTier":"false",
         "LOCALACCESSDEFINITIONREQUIRED": "4",
         "MAXAUTOSIZE": "125829120",
         "MAXFILENAMELENGTH": "256",
         "MAXPROTECTTIMEUNIT": "48",
         "MINAUTOSIZE": "104857600",
         "MINPROTECTTIMEUNIT": "48",
         "MINSIZEFSCAPACITY": "22573056",
```

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```
"NAME": "fs40",
"OWNINGCONTROLLER": "0A",
"PARENTFILESYSTEMNAME": "--",
"PARENTID": "0",
"PARENTNAME": "pool0",
"PARENTSNAPSHOTID": "",
"PARENTSNAPSHOTNAME":"",
"PARENTFILESYSTEMID":"",
"PARENTTYPE": 216,
"PATHNAMESEPARATORSTRING": "/",
"READONLY": "false",
"RECYCLESWITCH": "40",
"REMOTEREPLICATIONIDS": "[]",
"ROOT": "/fs40",
"RUNNINGSTATUS": "27",
"SC_CACHEDSIZE": "0",
"SC_HITRAGE": "0",
"SECTORSIZE": "8192",
"SMARTCACHEPARTITIONID": "",
"SMARTCACHESTATE": "0",
"SNAPSHOTRESERVECAPACITY": "20971520",
"SNAPSHOTRESERVEPER": "20",
"SNAPSHOTUSECAPACITY": "0",
"SPACERECYCLEMODE": "0",
"SPACESELFADJUSTINGMODE": "0",
"SPLITENABLE": "false",
"SPLITPROGRESS": "-1",
"SPLITSPEED": "5",
"SPLITSTATUS": "5",
"SUBTYPE": "0",
"TIMINGSNAPSHOTMAXNUM": "16",
"TIMINGSNAPSHOTSCHEDULEID": "",
"TOTALSAVEDCAPACITY": "0",
"TOTALSAVEDRATIO": "0",
"TYPE": 40,
"WORKINGCONTROLLER": "0A",
"WORMAUTODEL": "false",
"WORMAUTOLOCK": "false",
"WORMAUTOLOCKTIME": "1",
"WORMCLOCKTIME": "646",
"WORMDEFPROTECTPERIOD": "30",
"WORMEXPIREDTIME": "9223372036854775807",
"WORMMAXPROTECTPERIOD": "40",
"WORMMINPROTECTPERIOD": "10",
"WORMTYPE": "1",
"WRITECHECK": "false",
"allocatedPoolQuota": "23068672",
"distAlg":"0",
"dtreeCount": "100",
"enableBgrCompression":"false",
"enableBgrDedup":"false",
"inodeTotalCount": "10485760",
"inodeUsedCount": "0",
"rwStatus": "3",
"securityStyle": "3",
"tierCnt": "2",
"usedSSDCapacity":"100",
"vstoreId": "1",
"ALTERNATEDATASTREAMS": "0",
"vstoreName": "vsUser1",
"shareType": "['CIFS','NFS']",
"quotaConfigured": "true",
"protection": "[{
                 feature: 'Snapshot'
               }, {
                 feature: 'AsyncReplication'
               }]",
"quotaCfgCount": "0",
"replicationCount": "0",
```


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```
            "fsSnapCount": "0",
            "workloadTypeId": "0",
            "shareNumbers": [0,0],
            "ssdCapacityUpperLimit":"100",
            "support32BitInode": "false",
            "isAuditLogFs": "false",
            "fileSystemMode": "0",
            "PARENTFILESYSTEMID": "5",
            "litigationFileNum": "5",
            "isWormAuditLogFs": "0",
            "createTime":"1628751492",
            "QUOTASWITCH": "false",
            "QUOTASWITCHSTATUS": "0",
            "auditItems":"0",
            "oidReuseSwitch":"1",
            "inodeLow32DtreeBit":"5",
            "fsCapacitySwitch":"1",
            "vaaiSwitch":"1",
            "metaOidReuseSwitch":"0",
            "vaaiSupportOffloadSwitch":"1"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.1.4.2 Interface for Implementing Associated Query of File System Information

Function

This interface is used to implement associated query of basic information about file systems.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/associate

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJTYPE	Mandatory	enum	ID of an object type. **The value is described as follows:** 230: IOCLASS 268: cache partition 273: SmartCache partition

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Parameter	Mandatory/Optional/Conditional	Type	Description
ASSOCIATEOBJID	Mandatory	string	Associated object ID. Based on the object type, the associated object IDs are as follows: IOCLASS: ID of a SmartQoS policy. Cache: cache partition ID (If the object type is cache partition, you can query all file systems in the cache partition by specifying the associated object ID.) SmartCache partition: SmartCache partition ID.
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system
ID	Mandatory	string	File system ID.
NAME	Mandatory	string	File system name. **The value is described as follows:** The value contains only 1 to 255 characters, including digits, letters, or underscores (_).
ENABLEDEDUP	Mandatory	string(bool)	Enables or disables deduplication. **The value is described as follows:** true: enabled false: disabled
RECYCLESWITCH	Mandatory	string(enum)	Recycle bin switch. **The value is described as follows:** 0: off 1: on
IOCLASSID	Mandatory	string	I/O class.
CAPACITYTHRESHOLD	Mandatory	string(uint64)	Total capacity alarm threshold. **The value is described as follows:** The value ranges from 50% to 95%. The default value is 90%.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool
PARENTID	Mandatory	string	ID of a storage pool.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Storage pool name.
HEALTHSTATUS	Mandatory	string(enum)	Health status.
RUNNINGSTATUS	Mandatory	string(enum)	Running status.
DESCRIPTION	Mandatory	string	Description.
SUBTYPE	Mandatory	string(enum)	File system type. **The value is described as follows:** 0: common file system 1: WORM file system
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 0: thick file system 1: thin file system
CAPACITY	Mandatory	string(uint64)	Configured capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
INITIALALLOCCAPACITY	Mandatory	string(uint64)	Initially allocated capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
SNAPSHOTRESERVEPER	Mandatory	string(uint32)	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%. **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
AUTODELSNAPSHOTENABLE	Mandatory	string(bool)	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: yes false: no
SNAPSHOTUSECAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **Unit:**sectors **Note:**The sector size is 512 bytes.
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
SECTORSIZE	Mandatory	string(uint32)	Block size. **The value is described as follows:** The value can only be 4 KB, 8 KB, 16 KB, 32 KB, or 64 KB. **Unit:**bytes
OWNINGCONTROLLER	Mandatory	string	ID of the owning controller.
WORKINGCONTROLLER	Mandatory	string	ID of the working controller.
CHECKSUMENABLE	Mandatory	string(bool)	Data parity switch. **The value is described as follows:** true: on false: off

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Parameter	Mandatory/ Conditional	Type	Description
ATIME	Mandatory	string(bool)	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: yes false: off
READONLY	Mandatory	string(bool)	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes
IOPRIORITY	Mandatory	string(enum)	File system I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
CACHEPARTITIONID	Mandatory	string	Cache partition ID.
ISCLONEFS	Mandatory	string(bool)	Indicates whether a file system is a clone. **The value is described as follows:** true: yes false: no
ENABLECOMPRESSION	Mandatory	string(bool)	Compression enabled or not. **The value is described as follows:** true: enabled false: disabled
distAlg	Mandatory	enum	Distribution algorithm. **The value is described as follows:** 0: performance mode 1: capacity balance mode

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Parameter	Mandatory/ Conditional	Type	Description
allocatedPoolQuota	Mandatory	string(uint64)	Capacity quota in the pool that a file system has applied for. **The value is described as follows:** - **Unit:**sectors
SPLITSTATUS	Mandatory	string(enum)	Splitting status. **The value is described as follows:** 1: not started 2: splitting 3: queuing 4: interrupted **Note:**The other values returned are invalid.
SPLITSPEED	Mandatory	string(enum)	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The other values returned are invalid.
SPLITENABLE	Mandatory	string(bool)	Splitting switch. **The value is described as follows:** true: starts splitting. false: stops splitting.
SPACESELFADJUSTINGMODE	Mandatory	string(enum)	Automatic capacity adjustment mode. **The value is described as follows:** 0: off 1: automatic capacity expansion 2: automatic capacity expansion and reduction

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Parameter	Mandatory/ Conditional	Type	Description
SPACERECYCLEMODE	Mandatory	string(enum)	Capacity reclamation mode. **The value is described as follows:** 0: automatic capacity expansion preferred 1: automatic snapshot deletion preferred
SNAPSHOTRESERVE-CAPACITY	Mandatory	string(uint64)	Reserved snapshot space. **The value is described as follows:** -
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
WORMTYPE	Mandatory	string(enum)	WORM service type. **The value is described as follows:** 1: regulatory compliance mode 3: enterprise compliance mode
MAXAUTOSIZE	Mandatory	string(uint64)	Upper limit of automatic expansion. **The value is described as follows:** 1 GB to 16 PB **Unit:**sectors **Note:**The upper limit of automatic expansion must be greater than or equal to the lower limit of automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
WORMMINPROTECTPERIOD	Conditional	string(uint64)	Minimum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. In addition, infinite is supported.
WORMMAXPROTECTPERIOD	Conditional	string(uint64)	Maximum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. The default value is 70 years. In addition, infinite is supported.
WORMDEFPROTECTPERIOD	Conditional	string(uint64)	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period.
WORMAUTOLOCK	Conditional	string(bool)	Automatic lock mode of WORM. **The value is described as follows:** true: on false: off
WORMAUTOLOCKTIME	Conditional	string(uint32)	Automatic lock time. **The value is described as follows:** The default value is 2 hours. The value ranges from 2 hours to 7 days.

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Parameter	Mandatory/ Conditional	Type	Description
WORMAUTODEL	Conditional	string(bool)	Automatic deletion mode of WORM. **The value is described as follows:** true: on false: off
WRITECHECK	Mandatory	string(bool)	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: on false: off
TIMINGSNAPSHOTMAXNUM	Mandatory	string(uint32)	Maximum number of periodic snapshots.
ISSHOWSNAPDIR	Mandatory	string(bool)	Snapshot directory visible or not. **The value is described as follows:** true: yes false: no
DATATRANSFERPOLICY	Mandatory	string(enum)	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
INITIALDISTRIBUTE-POLICY	Mandatory	string(enum)	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
PARENTSNAPSHOTNAME	Conditional	string	Name of the parent read-only snapshot. **Note:**This field must be returned if the specified file system is a clone file system.
PARENTFILESYSTEM-NAME	Mandatory	string	Name of the parent file system.
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: no protection 1: based on capacity 2: based on performance 3: based on high performance 4: based on tiers
SMARTCACHEPARTI-TIONID	Mandatory	string	SmartCache partition ID. **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEROLLBACKMODE	Conditional	string(bool)	Rollback mode of read-only snapshots. **The value is described as follows:** true: on false: off **Note:**This field has been discarded.
AVAILABLECAPCITY	Mandatory	string(uint64)	Available file system capacity. **Unit:**sectors **Note:**The sector size is 512 bytes.
AVAILABLEANDALLOCCAPACITYRATIO	Mandatory	string(uint32)	Percentage of used file system capacity to the total capacity. **Unit:**%
ENABLETIMINGSNAP-SHOT	Mandatory	string(bool)	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: yes false: off
TIMINGSNAPSHOTSCHEDULEID	Mandatory	string	Timing policy ID of file system read-only snapshots.
ROOT	Mandatory	string	Root path.
LOCALACCESSDEFINI-TIONREQUIRED	Mandatory	string(enum)	Local access options are supported. **The value is described as follows:** 2: A file system needs to be defined in the local access. 3: A file system needs to be defined at a fixed directory in the local access. 4: A file system does not need to be defined in the local access.

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Parameter	Mandatory/ Conditional	Type	Description
PATHNAMESEPARATORSTRING	Mandatory	string	Directory separator.
CASESENSITIVE	Mandatory	string(bool)	Indicates whether a file name is case-sensitive. **The value is described as follows:** true: yes false: no
CASEPRESERVED	Mandatory	string(bool)	Indicates whether the file name size is reserved. **The value is described as follows:** true: yes false: no
MAXFILENAMELENGTH	Mandatory	string(uint32)	Maximum file name length.
ACTUALFILESYSTEM-TYPE	Mandatory	string(enum)	Actual file system type. **The value is described as follows:** 1: Wushan file system 2: NOFS
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by deduplication, expressed in sectors. **Unit:**sectors **Note:**The sector size is 512 bytes.
COMPRESSIONSAVEDCAPACITY	Mandatory	string(uint64)	Capacity saved by compression. **Unit:**sectors **Note:**The sector size is 512 bytes.
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total capacity saved. **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
SMARTCACHESTATE	Mandatory	string(enum)	SmartCache status. **The value is described as follows:** 0: disabled 1: enabled 2: pool status inherited **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_CACHEDSIZE	Conditional	string(uint32)	SmartCache size. **Unit:**KB **Note:** This field is returned only when the specified file system is added to SmartCache. This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_HITRAGE	Conditional	string(uint32)	SmartCache hit ratio (%). **Unit:**% **Note:** This field is returned only when the specified file system is added to SmartCache. This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
MINPROTECTTIMEU-NIT	Conditional	string(enum)	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.
MAXPROTECTTIMEU-NIT	Conditional	string(enum)	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.
DEFPROTECTTIMEU-NIT	Conditional	string(enum)	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description
AUTOLOCKTIMEUNIT	Conditional	string(enum)	Automatic lock time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **Unit:**%
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **Unit:**%
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **Unit:**%
WORMCLOCKTIME	Mandatory	string(uint64)	WORM clock time. **Unit:**seconds
WORMEXPIREDTIME	Conditional	string(uint64)	WORM expiration time. **Unit:**seconds **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description

ASSOCIATEMETADATA	Conditional	string	Additional data generated by the creation of an association relationship.
			The value is described as follows:
			1. When the associated object is a host, port, or mapping view, the following is returned:
			{"HostLUNID":XX}
			Note: The previous data is a complete string. XX indicates the host LUN ID.
			2. When the associated object is a host, the service port list can be used in the parameters:
			{
			"ports": {
			"fc": ["PORT_ID1","PORT_ID2","PORT_ID3"],
			"iscsi": ["PORT_ID1","PORT_ID2","PORT_ID3"]
			}
			}
			The previous data can be used to query LUNs that can be accessed by a host through the ports.
			Note: This field is not returned when the specified file system is a NAS file system.

MINSIZEFSCAPACITY	Mandatory	string(uint64)	Minimum space that can be reduced for a thin file system. **Unit:**sectors

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Parameter	Mandatory/ Conditional	Type	Description
inodeTotalCount	Mandatory	string(uint32)	Total number of inodes.
inodeUsedCount	Mandatory	string(uint32)	Number of used inodes.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
PARENTFILESYSTEMID	Conditional	string	ID of the parent file system. **Note:**This field must be returned if the specified file system is a clone file system.
PARENTSNAPSHOTID	Conditional	string	ID of the parent read-only snapshot. **Note:**This field must be returned if the specified file system is a clone file system.
ENABLEDEDUPCHECK	Mandatory	string(bool)	Whether to enable the function of checking byte by byte. **The value is described as follows:** true: yes false: no **Note:**This field is valid for the CLI only.
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	IDs of remote replication tasks.
APPLICATIONSCENAR-IO	Mandatory	string(enum)	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined

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Parameter	Mandatory/ Conditional	Type	Description
HYPERVAULTPAIRIDS	Conditional	string(array)	HyperVault pair IDs. **Note:**This field must be delivered when the specified file system is configured with HyperVault.
HYPERMETROPAIRIDS	Conditional	string(array)	HyperMetro pair IDs. **Note:**This field must be delivered when the specified file system is configured with HyperMetro.
CHILDRENCLONEFS-NUM	Mandatory	string(uint32)	Number of child clone file systems.
ALTERNATEDATASTREAMS	Mandatory	string(enum)	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: off 1: on
tierCnt	Mandatory	string(uint32)	Number of disk types in the storage pool to which the file system belongs. **The value is described as follows:** 0..2
rwStatus	Mandatory	enum	File system read-write status. **The value is described as follows:** 0: no access 1: read-only 3: read and write
SPLITPROGRESS	Mandatory	string(uint32)	Splitting progress. **The value is described as follows:** - **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
ATIMEUPDATEMODE	Mandatory	string(uint32)	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day
AUTOSIZEINCREMENT	Mandatory	string(uint64)	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64MB~100GB **Unit:**sectors
AUTOSIZEENABLE	Mandatory	string(enum)	Switch of automatic capacity adjustment. **The value is described as follows:** 0: off 1: on
AUTOSHRINKTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1~99 **Unit:**% **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.

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Parameter	Mandatory/ Conditional	Type	Description
AUTOGROWTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 1~99 **Unit:**% **Note:**The percentage threshold that triggers the automatic expansion must be bigger than the percentage threshold that triggers the automatic reduction.
securityStyle	Mandatory	enum	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed
support32BitInode	Mandatory	bool	Whether 32-bit inodes are supported. **The value is described as follows:** true: yes false: no
createTime	Conditional	string(uint64)	Time when the file system is created. **Note:**This parameter is returned only when the file system has the creation time field.

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Parameter	Mandatory/ Conditional	Type	Description
nasLockingPolicy	Conditional	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Note:**This parameter is returned only when the security style is Native.

Example

- Implementing associated query of basic information about file systems.

```
Request: GET/deviceManager/rest/210235843910E6000009/filesystem/associate?
ASSOCIATEOBJID=1&ASSOCIATEOBJTYPE=273&filter=HEALTHSTATUS:1&range=[0-100]

Response:
{
   "data": {
          "ACTUALFILESYSTEMTYPE": "2",
          "ALLOCCAPACITY": "796262",
          "ALLOCTYPE": "1",
          "ALTERNATEDATASTREAMS":"1",
          "APPLICATIONSCENARIO":"3",
          "ATIME": "false",
          "ATIMEUPDATEMODE": "off",
          "AUTODELSNAPSHOTENABLE": "false",
          "AUTOGROWTHRESHOLDPERCENT": "85",
          "AUTOLOCKTIMEUNIT": "0",
          "AUTOSHRINKTHRESHOLDPERCENT": "50",
          "AUTOSIZEENABLE": "1",
          "AUTOSIZEINCREMENT": "2097152",
          "AVAILABLEANDALLOCCAPACITYRATIO": "22",
          "AVAILABLECAPCITY": "1300864",
          "CACHEPARTITIONID": "",
          "CAPABILITY": "1",
          "CAPACITY": "2097152",
          "CAPACITYTHRESHOLD": "90",
          "CASEPRESERVED": "true",
          "CASESENSITIVE": "true",
          "CHECKSUMENABLE": "true",
          "CHILDRENCLONEFSNUM": "0",
          "COMPRESSION": "0",
          "COMPRESSIONSAVEDCAPACITY": "0",
          "COMPRESSIONSAVEDRATIO": "0",
          "DATATRANSFERPOLICY": "0",
          "DEDUPSAVEDCAPACITY": "0",
          "DEDUPSAVEDRATIO": "0",
          "DEFPROTECTTIMEUNIT": "0",
          "DESCRIPTION": "",
          "ENABLECOMPRESSION": "false",
```

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```
"ENABLEDEDUP": "false",
"ENABLEDEDUPCHECK": "false",
"ENABLEROLLBACKMODE": "false",
"ENABLETIMINGSNAPSHOT": "false",
"HEALTHSTATUS": "1",
"HYPERMETROPAIRIDS": "[223c1e09335a0003]",
"HYPERVAULTPAIRIDS": "[]",
"ID": "4",
"INITIALALLOCCAPACITY": "20480",
"INITIALDISTRIBUTEPOLICY": "0",
"IOCLASSID": "",
"IOPRIORITY": "1",
"ISCLONEFS": "false",
"ISSHOWSNAPDIR": "true",
"LOCALACCESSDEFINITIONREQUIRED": "4",
"MAXAUTOSIZE": "2576980377",
"MAXFILENAMELENGTH": "256",
"MAXPROTECTTIMEUNIT": "0",
"MINAUTOSIZE": "2147483648",
"MINPROTECTTIMEUNIT": "0",
"MINSIZEFSCAPACITY": "2097152",
"NAME": "FileSystem0050000",
"OWNINGCONTROLLER": "0A",
"PARENTFILESYSTEMID": "",
"PARENTFILESYSTEMNAME": "",
"PARENTID": "2",
"PARENTNAME": "StoragePool003",
"PARENTSNAPSHOTID": "",
"PARENTSNAPSHOTNAME": "",
"PARENTTYPE": 216,
"PATHNAMESEPARATORSTRING": "/",
"READONLY": "false",
"RECYCLESWITCH": "4",
"REMOTEREPLICATIONIDS": "[]",
"ROOT": "/FileSystem0050000",
"RUNNINGSTATUS": "27",
"SC_CACHEDSIZE": "0",
"SC_HITRAGE": "0",
"SECTORSIZE": "65536",
"SMARTCACHEPARTITIONID": "",
"SMARTCACHESTATE": "0",
"SNAPSHOTRESERVECAPACITY": "429496729",
"SPLITSPEED": "5",
"SPLITSTATUS": "5",
"SPLITPROGRESS": "-1",
"SNAPSHOTRESERVEPER": "20",
"SNAPSHOTUSECAPACITY": "0",
"SPACERECYCLEMODE": "0",
"SPACESELFADJUSTINGMODE": "0",
"SPLITENABLE": "false",
"SUBTYPE": "0",
"TIMINGSNAPSHOTMAXNUM": "16",
"TIMINGSNAPSHOTSCHEDULEID": "",
"TOTALSAVEDCAPACITY": "0",
"TOTALSAVEDRATIO": "0",
"TYPE": 40,
"WORKINGCONTROLLER": "0A",
"WORMAUTODEL": "false",
"WORMAUTOLOCK": "false",
"WORMAUTOLOCKTIME": "0",
"WORMCLOCKTIME": "18446612149339932304",
"WORMDEFPROTECTPERIOD": "0",
"WORMEXPIREDTIME": "9223372036854775807",
"WORMMAXPROTECTPERIOD": "0",
"WORMMINPROTECTPERIOD": "0",
"WORMTYPE": "0",
"WRITECHECK": "false",
"allocatedPoolQuota": "429916160",
"distAlg":"0",
```


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```
            "inodeTotalCount": "256",
            "inodeUsedCount": "0",
            "rwStatus":"3",
            "securityStyle": "0",
            "support32BitInode": "false",
            "vstoreId": "1",
            "vstoreName": "vsUser1",
            "tierCnt":"1",
            "createTime":"1628751564"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.1.4.3 Interface for Querying File System Config Ability Information

Function

This interface is used to query the file system configuration ability.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FILESYSTEM_CONFIG_ABILITY/${ACTUALFILESYSTEMTYPE}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ACTUALFILESYSTEM-TYPE	Mandatory	string	File system type supported by services. **The value is described as follows:** 1: Wushan file system 2: NOFS

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID.
ID	Mandatory	string	File system ID.

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Parameter	Mandatory/ Conditional	Type	Description
SUPPORTEDACTUAL-FILESYSTEMTYPES	Mandatory	string(array)	List of supported file system types.
SUPPORTEDSYNCHRONOUSMETHODS	Mandatory	string(array)	List of supported synchronous replication modes.
SUPPORTEDASYNCH-RONOUSMETHODS	Mandatory	string(array)	List of supported asynchronous replication modes.
INITIALAVAILABILITY	Mandatory	string(enum)	Whether to support file system creation by default. **The value is described as follows:** 2: supported 3: not supported
LOCALACCESSIBILITY-SUPPORT	Mandatory	string(enum)	Whether local access is mandatory. **The value is described as follows:** 2: The file system can be accessed locally by default. 3: The file system can be accessed locally but a file server that can access the file system must be specified during file system creation. 4: The file system cannot be accessed locally.

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Parameter	Mandatory/ Conditional	Type	Description
BLOCKSTORAGECREA-TIONSUPPORT	Mandatory	string(enum)	Whether logical disks and storage pools can be used in file systems. **The value is described as follows:** 2: Storage pools must be specified during file system creation. 3: Logical disks must be specified during file system creation. 4: Storage pools or logical disks must be specified during file system creation.
DIRECTORYSERVER-PARAMETERSUPPOR-TED	Mandatory	string(enum)	Whether the directory service is supported. **The value is described as follows:** 2: not supported 3: supported 4: supported by a file server by default 5: supported by a file system host by default

Example

- Querying the file system configuration ability.

```
Request: GET /deviceManager/rest/210235843910E6000009/FILESYSTEM_CONFIG_ABILITY/2

Response:
{
   "data": {
      "BLOCKSTORAGECREATIONSUPPORT": "2",
      "DIRECTORYSERVERPARAMETERSUPPORTED": "2",
      "ID": "1",
      "INITIALAVAILABILITY": "3",
      "LOCALACCESSIBILITYSUPPORT": "4",
      "SUPPORTEDACTUALFILESYSTEMTYPES": 0,
      "SUPPORTEDASYNCHRONOUSMETHODS": "",
      "SUPPORTEDSYNCHRONOUSMETHODS": "",
      "TYPE": 16486
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.1.4.4 Interface for Querying File System Extension Information

Function

The interface is used to query file system extension information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/get_fs_extend_info?ID=${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	File system ID.

Result

Parameter	Mandatory/Conditional	Type	Description
type	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system
id	Mandatory	string	File system ID.
name	Mandatory	string	File system name. **The value is described as follows:** The value contains only 1 to 255 characters, including digits, letters, or underscores (_).
maxSizeFsCapacity	Mandatory	uint64	Maximum space that the file system can be expanded to. **Unit:**sectors

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Example

- Querying file system extension information.

```
Request: GET /deviceManager/rest/210235843910E6000009/filesystem/get_fs_extend_info?ID=12

Response: {
   "data": {
      "TYPE": 40,
      "ID": "12",
      "NAME": "fs1",
      "maxSizeFsCapacity": "2147483648"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.1.4.5 Interface for Querying File System Information

Function

This interface is used to query basic information about a file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
userView	Optional	uint32	User view. **The value is described as follows:** 0 to 2. **Note:** 0: user 1: engineer 2: developer
selectFields	Optional	string	Column parameters in the command output. **The value is described as follows:** - **Note:** Use commas (,) to separate column names that need to be displayed in the command output. Example: selectFields=ID,NAME,ALLOCTYPE

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 40: file system
ID	Mandatory	string	File system ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	File system name. **The value is described as follows:** The value contains only 1 to 255 characters, including digits, letters, or underscores (_).
ENABLEDEDUP	Mandatory	string(bool)	Whether deduplication is enabled. **The value is described as follows:** true: enabled false: disabled
RECYCLESWITCH	Mandatory	string(enum)	Recycle bin switch. **The value is described as follows:** 0: disabled 1: enabled
IOCLASSID	Mandatory	string	I/O class. **The value is described as follows:** -
CAPACITYTHRESHOLD	Mandatory	string(uint64)	Total capacity alarm threshold. **The value is described as follows:** The default alarm threshold is 90%. The value ranges from 50 to 99.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 216: storage pool
PARENTID	Mandatory	string	Storage pool ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
PARENTNAME	Mandatory	string	Storage pool name. **The value is described as follows:** -
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 1: Normal
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 27: Online 28: Offline 35: Invalid 53: Initializing
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** -
SUBTYPE	Mandatory	string(enum)	File system type. **The value is described as follows:** 0: common file system 1: WORM file system
ALLOCTYPE	Mandatory	string(enum)	Space allocation type. **The value is described as follows:** 1: thin file system
CAPACITY	Mandatory	string(uint64)	Configured capacity. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
INITIALALLOCCAPACITY	Mandatory	string(uint64)	Initially allocated capacity. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.
SNAPSHOTRESERVEPER	Mandatory	string(uint32)	Percentage of the reserved snapshot space. **The value is described as follows:** The value ranges from 0% to 50%. **Unit:**%
AUTODELSNAPSHOTENABLE	Mandatory	string(bool)	Indicates whether the earliest snapshots (manual snapshots and periodic snapshots) can be automatically deleted. **The value is described as follows:** true: enabled false: disabled
SNAPSHOTUSECAPACITY	Mandatory	string(uint64)	Capacity consumed by snapshots. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
ALLOCCAPACITY	Mandatory	string(uint64)	Used capacity. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes. (This parameter is not used currently. The allocatedPoolQuota parameter is used actually.)
SECTORSIZE	Mandatory	string(uint32)	Block size. **The value is described as follows:** The value can only be 8 KB, 16 KB, 32 KB, 64 KB, or > 64 KB. **Unit:**bytes
OWNINGCONTROLLER	Mandatory	string	ID of the owning controller. **The value is described as follows:** -
WORKINGCONTROLLER	Mandatory	string	ID of the working controller. **The value is described as follows:** -
CHECKSUMENABLE	Mandatory	string(bool)	Data parity switch. **The value is described as follows:** true: enabled false: disabled
ATIME	Mandatory	string(bool)	Indicates whether the access time is updated after a file is read. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
litigationFileNum	Mandatory	uint	Number of regulatory documents. **Note:**This field is returned only when the specified file system is a WORM file system.
ATIMEUPDATEMODE	Mandatory	string(uint32)	Access time (atime) update mode. **The value is described as follows:** 4294967295: update disabled 3600: update every hour 86400: update every day
READONLY	Mandatory	string(bool)	Indicates whether the data set can be modified. **The value is described as follows:** true: no false: yes
createTime	Conditional	string(uint64)	Time when the file system is created. **Note:**This parameter is returned only when the file system has the creation time field.
IOPRIORITY	Mandatory	string(enum)	File system I/O priority. **The value is described as follows:** 1: low 2: medium 3: high
CACHEPARTITIONID	Mandatory	string	Cache partition ID. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
ISCLONEFS	Mandatory	string(bool)	Indicates whether this is a clone file system. **The value is described as follows:** true: yes false: no
ENABLECOMPRESSION	Mandatory	string(bool)	Compression enabled or not. **The value is described as follows:** true: enabled false: disabled
COMPRESSION	Mandatory	string(enum)	Compression algorithm. **The value is described as follows:** 0: rapid compression 1: deep compression
TIMINGSNAPSHOTMAXNUM	Mandatory	string(uint32)	Maximum number of periodic snapshots. **The value is described as follows:** -
ISSHOWSNAPDIR	Mandatory	string(bool)	Snapshot directory visible or not. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
DATATRANSFERPOLICY	Mandatory	string(enum)	Data block migration policy. **The value is described as follows:** 0: no migration 1: automatic migration 2: migration to a higher performance tier 3: migration to a lower performance tier **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
INITIALDISTRIBUTEPOLICY	Mandatory	string(enum)	Initial allocation policy. **The value is described as follows:** 0: automatic 1: highest performance 2: performance 3: capacity **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
PARENTSNAPSHOTNAME	Conditional	string	Name of the parent read-only snapshot. **The value is described as follows:** - **Note:**This field must be returned if the specified file system is a clone file system.
PARENTFILESYSTEMNAME	Mandatory	string	Name of the parent file system. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
CAPABILITY	Mandatory	string(enum)	VASA: storage capability level. **The value is described as follows:** 0: no protection 1: based on capacity 2: based on performance 3: based on high performance 4: based on tiers
SMARTCACHEPARTI-TIONID	Mandatory	string	SmartCache partition ID. **The value is described as follows:** - **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
ENABLEROLLBACKMODE	Conditional	string(bool)	Rollback mode of read-only snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This field has been discarded.
AVAILABLECAPCITY	Mandatory	string(uint64)	Available file system capacity. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
AVAILABLEANDALLOCCAPACITYRATIO	Mandatory	string(uint32)	Percentage of used file system capacity to the total capacity. **The value is described as follows:** - **Unit:**%
ENABLETIMINGSNAP-SHOT	Mandatory	string(bool)	Indicates whether the periodic snapshot is enabled. **The value is described as follows:** true: enabled false: disabled
TIMINGSNAPSHOTSCHEDULEID	Mandatory	string	Timing policy ID of file system read-only snapshots. **The value is described as follows:** -
ROOT	Mandatory	string	Root path. **The value is described as follows:** -
LOCALACCESSDEFINI-TIONREQUIRED	Mandatory	string(enum)	Local access options are supported. **The value is described as follows:** 2: A file system needs to be defined in the local access. 3: A file system needs to be defined at a fixed directory in the local access. 4: A file system does not need to be defined in the local access.
PATHNAMESEPARATORSTRING	Mandatory	string	Directory separator. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
CASESENSITIVE	Mandatory	string(bool)	Indicates whether a file name is case-sensitive. **The value is described as follows:** true: yes false: no
CASEPRESERVED	Mandatory	string(bool)	Indicates whether the file name size is reserved. **The value is described as follows:** true: yes false: no
MAXFILENAMELENGTH	Mandatory	string(uint32)	Maximum file name length. **The value is described as follows:** -
ACTUALFILESYSTEM-TYPE	Mandatory	string(enum)	Actual file system type. **The value is described as follows:** 1: Wushan file system 2: NOFS
DEDUPSAVEDCAPACI-TY	Mandatory	string(uint64)	Capacity saved by deduplication. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.
COMPRESSIONSAVED CAPACITY	Mandatory	string(uint64)	Capacity saved by compression. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.

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Parameter	Mandatory/ Conditional	Type	Description
TOTALSAVEDCAPACI-TY	Mandatory	string(uint64)	Total capacity saved. **The value is described as follows:** - **Unit:**sectors **Note:**The sector size is 512 bytes.
SMARTCACHESTATE	Mandatory	string(enum)	SmartCache status. **The value is described as follows:** 0: disabled 1: enabled 2: pool status inherited **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_CACHEDSIZE	Mandatory	string(uint32)	SmartCache size. **The value is described as follows:** - **Unit:**KB **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.
SC_HITRAGE	Mandatory	string(uint32)	SmartCache hit ratio (%). **The value is described as follows:** - **Unit:**% **Note:**This field is not supported by OceanStor Dorado V3 all-flash array series.

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Parameter	Mandatory/ Conditional	Type	Description
DEDUPSAVEDRATIO	Mandatory	string(uint32)	Space saving ratio of deduplication. **The value is described as follows:** - **Unit:**%
COMPRESSIONSAVE-DRATIO	Mandatory	string(uint32)	Space saving ratio of compression. **The value is described as follows:** - **Unit:**%
TOTALSAVEDRATIO	Mandatory	string(uint32)	Total space saving ratio. **The value is described as follows:** - **Unit:**%
MINSIZEFSCAPACITY	Mandatory	string(uint64)	Minimum space that can be reduced for a thin file system. **The value is described as follows:** - **Unit:**sectors
inodeTotalCount	Mandatory	string(uint32)	Total number of inodes. **The value is described as follows:** -
inodeUsedCount	Mandatory	string(uint32)	Number of used inodes. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
PARENTSNAPSHOTID	Mandatory	string	ID of the parent read-only snapshot. **The value is described as follows:** - **Note:**This field must be returned if the specified file system is a clone file system.
ENABLEDEDUPCHECK	Mandatory	string(bool)	Whether to enable the function of checking byte by byte. **The value is described as follows:** true: enabled false: disabled **Note:**This field is valid for the CLI only.
REMOTEREPLICATIO-NIDS	Mandatory	string(array)	IDs of remote replication tasks. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
APPLICATIONSCENAR-IO	Mandatory	string(enum)	Application scenario. **The value is described as follows:** 1: database 2: VM 3: user-defined
HYPERMETROPAIRIDS	Mandatory	string(array)	HyperMetro pair IDs. **The value is described as follows:** -
HYPERVAULTPAIRIDS	Mandatory	string(array)	HyperVault pair IDs. **The value is described as follows:** -
SNAPSHOTRESERVE-CAPACITY	Mandatory	string(uint64)	Reserved snapshot space. **The value is described as follows:** -
CHILDRENCLONEFS-NUM	Mandatory	string(uint32)	Number of child clone file systems. **The value is described as follows:** -
ISDELETEPARENTS-NAPSHOT	Mandatory	string(bool)	Whether to delete the read-only snapshots associated with the parent file system. **The value is described as follows:** true: yes false: no
SPLITENABLE	Mandatory	string(bool)	Splitting switch. **The value is described as follows:** true: starts splitting. false: stops splitting.

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Parameter	Mandatory/ Conditional	Type	Description
SPLITSPEED	Mandatory	string(enum)	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Note:**The other values returned are invalid.
SPLITSTATUS	Mandatory	string(enum)	Splitting status. **The value is described as follows:** 1: Not started 2: Splitting 3: Queuing 4: Terminated abnormally 5: Pausing **Note:**The other values returned are invalid.
SPACESELFADJUSTINGMODE	Mandatory	string(enum)	Sets the automatic capacity adjustment mode. **The value is described as follows:** 0: disabled 1: automatic capacity expansion 2: automatic capacity expansion and reduction
AUTOSIZEENABLE	Mandatory	string(enum)	Switch of automatic capacity adjustment. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
AUTOSHRINKTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic reduction. **The value is described as follows:** 1 to 97 **Unit:**% **Note:**The auto reduction trigger threshold (%) must be less than the auto expansion trigger threshold (%).
AUTOGROWTHRESHOLDPERCENT	Mandatory	string(uint32)	Percentage threshold that triggers the automatic expansion. **The value is described as follows:** 2 to 98 **Unit:**% **Note:**The auto expansion trigger threshold (%) must be greater than the auto reduction trigger threshold (%), and less than the total capacity alarm threshold (%).
MINAUTOSIZE	Mandatory	string(uint64)	Lower limit of automatic reduction. **The value is described as follows:** 1 GB to 32 PB **Unit:**sectors **Note:**The auto reduction lower limit must be less than or equal to the auto expansion upper limit, and less than or equal to the total capacity of the file system.

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Parameter	Mandatory/ Conditional	Type	Description
MAXAUTOSIZE	Mandatory	string(uint64)	Upper limit of automatic expansion. **The value is described as follows:** 1 GB to 32 PB **Unit:**sectors **Note:**The auto expansion upper limit must be greater than or equal to the auto reduction lower limit, and greater than or equal to the total capacity of the file system.
AUTOSIZEINCREMENT	Mandatory	string(uint64)	Capacity change of a single expansion/ reduction. **The value is described as follows:** 64 MB to 100 GB **Unit:**sectors
SPACERECYCLEMODE	Mandatory	string(enum)	Capacity reclamation mode. **The value is described as follows:** 0: automatic capacity expansion preferred 1: automatic snapshot deletion preferred
allocatedPoolQuota	Mandatory	string(uint64)	Capacity quota in the pool that a file system has applied for. **The value is described as follows:** - **Unit:**sectors
IsSupportAutoTier	Mandatory	string(bool)	Whether the tiering feature is supported. **The value is described as follows:** false: not supported true: supported

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Parameter	Mandatory/ Conditional	Type	Description
usedSSDCapacity	Mandatory	string(uint64)	Used SSD capacity. **The value is described as follows:** - **Unit:**sectors
ssdCapacityUpperLimit	Mandatory	string(uint64)	SSD capacity upper limit. **The value is described as follows:** - **Unit:**sectors
tierCnt	Mandatory	string(uint32)	Number of disk types in the storage pool to which the file system belongs. **The value is described as follows:** 0..2
ALTERNATEDATASTREAMS	Mandatory	string(enum)	Indicates whether to enable the alternate data streams function. **The value is described as follows:** 0: disabled 1: enabled
rwStatus	Mandatory	enum	File system read-write status. **The value is described as follows:** 0: no access 1: read-only 3: read and write
securityStyle	Mandatory	enum	Multiple security styles supported by the NAS protocol. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed

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Parameter	Mandatory/ Conditional	Type	Description
enableBgrCompression	Mandatory	enum	Indicates whether to enable the background compression function. **The value is described as follows:** 0: disabled 1: enabled
enableBgrDedup	Mandatory	enum	Indicates whether to enable the background deduplication function. **The value is described as follows:** 0: disabled 1: enabled
workloadTypeId	Conditional	uint32	ID of the application type. **The value is described as follows:** 0 to 143.
workloadTypeName	Mandatory	string	Name of the application type.
shareNumbers	Mandatory	array	Number of shares of each type. **Note:**[Number of NFS shares,Number of CIFS shares]
support32BitInode	Mandatory	bool	Whether 32-bit inodes are supported. **The value is described as follows:** true: yes false: no

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Parameter	Mandatory/ Conditional	Type	Description
unixPermissions	Mandatory	string	UNIX permissions of the file system root directory. **The value is described as follows:** The value consists of three digits whose meanings are as follows: The first digit refers to the permissions of the owner. The second digit refers to the permissions of the user group to which the file belongs. The last digit refers to the permissions of everyone else. The digits are from 0 to 7 whose meanings are as follows: 0: No permission; 1: Execute permission; 2: Write permission; 3: Write and execute permissions; 4: Read permission; 5: Read and execute permissions; 6: Read and write permissions; 7: All permissions (read, write, and execute).
isAuditLogFs	Mandatory	bool	Whether it is an audit log file system. **The value is described as follows:** true: yes false: no
fileSystemMode	Mandatory	uint8	Usage mode of the file system. **The value is described as follows:** 1: HyperMetro 0: local

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Parameter	Mandatory/ Conditional	Type	Description
PARENTFILESYSTEMID	Mandatory	string(uint32)	ID of the parent file system.
scheduleName	Mandatory	string	Name of a schedule. **The value is described as follows:** 1 to 256
isShowDedupAndCompression	Mandatory	bool	Whether to display the deduplication and compression switch. **The value is described as follows:** 0: no 1: yes
SPLITPROGRESS	Mandatory	string(uint32)	Splitting progress. **The value is described as follows:** - **Unit:**%
AUTOLOCKTIMEUNIT	Conditional	string(enum)	Unit of the automatic lock time. **The value is described as follows:** 44: minute 45: hour 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description
DEFPROTECTTIMEU-NIT	Conditional	string(enum)	Default protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.
MAXPROTECTTIMEU-NIT	Conditional	string(enum)	Maximum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.
MINPROTECTTIMEU-NIT	Conditional	string(enum)	Minimum protection time unit. **The value is described as follows:** 46: day 47: month 48: year **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description
WORMAUTODEL	Conditional	string(bool)	Automatic deletion mode of WORM. **The value is described as follows:** true: enabled false: disabled **Note:**This field is returned only when the specified file system is a WORM file system.
WORMAUTOLOCK	Conditional	string(bool)	Automatic lock mode of WORM. **The value is described as follows:** true: enabled false: disabled **Note:**This field is returned only when the specified file system is a WORM file system.
WORMAUTOLOCKTIME	Conditional	string(uint32)	Automatic lock time. **The value is described as follows:** The default value is 2 hours. The value ranges from 2 hours to 7 days. **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description
WORMDEFPROTECTPERIOD	Conditional	string(uint64)	Default protection period. **The value is described as follows:** Range: minimum protection period ≤ default protection period ≤ maximum protection period. **Note:**This field is returned only when the specified file system is a WORM file system.
WORMEXPIREDTIME	Conditional	string(uint64)	WORM expiration time. **The value is described as follows:** - **Unit:**seconds **Note:**This field is returned only when the specified file system is a WORM file system.
WORMMAXPROTECTPERIOD	Conditional	string(uint64)	Maximum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. The default value is 70 years. In addition, infinite is supported. **Note:**This field is returned only when the specified file system is a WORM file system.

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Parameter	Mandatory/ Conditional	Type	Description
WORMMINPROTECTPERIOD	Conditional	string(uint64)	Minimum protection period. **The value is described as follows:** The value ranges from 0 to 70 years. In addition, infinite is supported. **Note:**This field is returned only when the specified file system is a WORM file system.
WORMTYPE	Mandatory	string(enum)	WORM service type. **The value is described as follows:** 1: regulatory compliance mode 3: enterprise compliance mode
WRITECHECK	Mandatory	string(bool)	Write check. The value remains off in enterprise WORM mode and cannot be changed by users. **The value is described as follows:** true: enabled false: disabled
distAlg	Mandatory	enum	Distribution algorithm. **The value is described as follows:** 0: performance mode 1: capacity balance mode 2: directory balance mode 3: directory shuffle mode 4: controller affinity mode

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Parameter	Mandatory/ Conditional	Type	Description
WORMCLOCKTIME	Mandatory	uint64	WORM file system clock. **Unit:**Seconds **Note:**This field is returned only when the specified file system is a WORM file system.
isWormAuditLogFs	Mandatory	uint	Whether the file system is a WORM audit log file system. **Note:**This field is returned only when the specified file system is a WORM file system.
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: disabled 1: enabled
QUOTASWITCHSTATUS	Mandatory	enum	Indicates the quota running status. **The value is described as follows:** 0: disabled 1: enabled 2: initializing 3: --

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Parameter	Mandatory/ Conditional	Type	Description
auditItems	Mandatory	enum	Audit item of the file system. **The value is described as follows:** 1:"none": indicates that no operation is audited. This parameter cannot be set together with other audit items. 2:"set_security": audits the set security operation. 3:"get_security": audits the get security operation. 4:"set_attr": audits the set attr operation. 5:"get_attr": audits the get attr operation. 6:"set_xattr": audits the set xattr operation. 7:"get_xattr": audits the get xattr operation. 8:"open": audits the open operation. 9:"close": audits the close operation. 10:"read": audits the read operation. 11:"write": audits the write operation. 12:"create": audits the create operation. 13:"delete": audits the delete operation. 14:"rename": audits the rename operation. 15:"list_folder": audits the list folder operation. 16:"all": All the preceding operations are audited.

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Parameter	Mandatory/ Conditional	Type	Description
			If you need to set multiple audit items, separate them with commas (,). For example: audit_items=set_security,get_security.
oidReuseSwitch	Mandatory	uint8	OID reuse switch. **The value is described as follows:** 1: on; 0: off
inodeLow32DtreeBit	Mandatory	uint32	Specifies the number of dtree ID bits in the low 32 bits of an inode ID. **The value is described as follows:** 0..5
fsCapacitySwitch	Mandatory	uint8	Switch for displaying the file system capacity. **The value is described as follows:** 0: off 1: on **Note:**After this function is enabled, the configured capacity instead of the actual available capacity is displayed when you query the capacity information about a thin file system.

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Parameter	Mandatory/ Conditional	Type	Description
nasLockingPolicy	Mandatory	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy.
characterSet	Mandatory	uint32	Character set. **The value is described as follows:** 0: UTF8 1: UTF8-MB4
vaaiSwitch	Mandatory	uint8	Whether to enable the VAAI feature. **The value is described as follows:** 0: Off 1: On
vaaiSupportOffload-Switch	Mandatory	enum	Indicates whether to uninstall the VAAI capability. **The value is described as follows:** 0:Off; 1:On

Example

- Querying basic information about a file system.

```
Request: GET /deviceManager/rest/210235843910E6000009/filesystem/12

Response: {
   "data": {
      "ACTUALFILESYSTEMTYPE": "2",
      "ALLOCCAPACITY": "429880163",
      "ALLOCTYPE": "1",
      "APPLICATIONSCENARIO": "3",
      "ATIME": "false",
      "ATIMEUPDATEMODE": "off",
      "AUTODELSNAPSHOTENABLE": "false",
      "AUTOGROWTHRESHOLDPERCENT": "85",
      "AUTOLOCKTIMEUNIT": "0",
      "AUTOSHRINKTHRESHOLDPERCENT": "50",
      "AUTOSIZEENABLE": "1",
      "AUTOSIZEINCREMENT": "2097152",
```

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```
    "AVAILABLEANDALLOCCAPACITYRATIO": "20",
    "AVAILABLECAPCITY": "1717603456",
    "CACHEPARTITIONID": "",
    "CAPABILITY": "2",
    "CAPACITY": "2147483648",
    "CAPACITYTHRESHOLD": "90",
    "CASEPRESERVED": "true",
    "CASESENSITIVE": "true",
    "CHECKSUMENABLE": "true",
    "CHILDRENCLONEFSNUM": "0",
    "COMPRESSION": "0",
    "COMPRESSIONSAVEDCAPACITY": "0",
    "COMPRESSIONSAVEDRATIO": "0",
    "DATATRANSFERPOLICY": "0",
    "DEDUPSAVEDCAPACITY": "0",
    "DEDUPSAVEDRATIO": "0",
    "DEFPROTECTTIMEUNIT": "0",
    "DESCRIPTION": "",
    "ENABLECOMPRESSION": "true",
    "ENABLEDEDUP": "true",
    "ENABLEDEDUPCHECK": "false",
    "ENABLEROLLBACKMODE": "false",
    "ENABLETIMINGSNAPSHOT": "false",
    "HEALTHSTATUS": "1",
    "HYPERMETROPAIRIDS": "[\"223c1e09335a0003\"]",
    "HYPERVAULTPAIRIDS": "[]",
    "ID": "12",
    "INITIALALLOCCAPACITY": "0",
    "INITIALDISTRIBUTEPOLICY": "0",
    "IOCLASSID": "",
    "IOPRIORITY": "1",
    "ISCLONEFS": "false",
    "ISDELETEPARENTSNAPSHOT": "false",
    "ISSHOWSNAPDIR": "true",
    "IsSupportAutoTier": "false",
    "LOCALACCESSDEFINITIONREQUIRED": "4",
    "MAXAUTOSIZE": "2576980377",
    "MAXFILENAMELENGTH": "256",
    "MAXPROTECTTIMEUNIT": "0",
    "MINPROTECTTIMEUNIT": "0",
    "MINAUTOSIZE": "2147483648",
    "MINSIZEFSCAPACITY": "432016793",
    "NAME": "fs4",
    "OWNINGCONTROLLER": "0B",
    "PARENTFILESYSTEMNAME": "--",
    "PARENTID": "0",
    "PARENTNAME": "pool0",
    "PARENTSNAPSHOTID": "",
    "PARENTSNAPSHOTNAME": "",
    "PARENTTYPE": 216,
    "PATHNAMESEPARATORSTRING": "/",
    "READONLY": "false",
    "RECYCLESWITCH": "4",
    "REMOTEREPLICATIONIDS": "[]",
    "ROOT": "/fs4",
    "RUNNINGSTATUS": "27",
    "SC_CACHEDSIZE": "0",
    "SC_HITRAGE": "0",
    "SECTORSIZE": "65536",
    "SMARTCACHEPARTITIONID": "",
    "SMARTCACHESTATE": "0",
    "SNAPSHOTRESERVECAPACITY": "429496729",
    "SNAPSHOTRESERVEPER": "20",
    "SNAPSHOTUSECAPACITY": "0",
    "SPACERECYCLEMODE": "0",
    "SPACESELFADJUSTINGMODE": "0",
    "SPLITENABLE": "false",
    "SPLITPROGRESS": "-1",
    "SPLITSPEED": "5",
```


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```
        "SPLITSTATUS": "5",
        "SUBTYPE": "0",
        "TIMINGSNAPSHOTMAXNUM": "16",
        "TIMINGSNAPSHOTSCHEDULEID": "",
        "TOTALSAVEDCAPACITY": "0",
        "TOTALSAVEDRATIO": "0",
        "TYPE": 40,
        "WORKINGCONTROLLER": "0B",
        "WORMAUTODEL": "false",
        "WORMAUTOLOCK": "false",
        "WORMAUTOLOCKTIME": "0",
        "WORMCLOCKTIME": "18446612149339932304",
        "WORMDEFPROTECTPERIOD": "0",
        "WORMEXPIREDTIME": "9223372036854775807",
        "WORMMAXPROTECTPERIOD": "0",
        "WORMMINPROTECTPERIOD": "0",
        "WORMTYPE": "0",
        "WRITECHECK": "false",
        "allocatedPoolQuota": "429916160",
        "inodeTotalCount": "214748364",
        "inodeUsedCount": "0",
        "usedSSDCapacity": "1024000",
        "ssdCapacityUpperLimit": "4194304",
        "rwStatus": "3",
        "tierCnt": "2",
        "vstoreId": "1",
        "ALTERNATEDATASTREAMS": "0",
        "securityStyle": "0",
        "enableBgrCompression": "0",
        "enableBgrDedup": "0",
        "vstoreName": "vsUser1",
        "shareNumbers": [0,0],
        "workloadTypeId":"11",
        "workloadTypeName":"NAS_Default",
        "support32BitInode": "false",
        "unixPermissions": "755",
        "isAuditLogFs": "false",
        "isShowDedupAndCompression":"0",
        "distAlg":"0",
        "fileSystemMode": "0",
        "PARENTFILESYSTEMID": "5",
        "scheduleName": "--",
        "litigationFileNum":"0",
        "isWormAuditLogFs":"0",
        "createTime":"1628751492",
        "QUOTASWITCH": "false",
        "QUOTASWITCHSTATUS": "0",
        "auditItems":"0",
        "oidReuseSwitch":"1",
        "inodeLow32DtreeBit":"5",
        "fsCapacitySwitch":"1",
        "characterSet":"0",
        "vaaiSwitch":"1",
        "vaaiSupportOffloadSwitch": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Query basic file system information by specifying column parameters.

```
Request: /deviceManager/rest/2102350RMG10GB000015/filesystem/31?selectFields=NAME,ALLOCTYPE

Response: {
    "data": {
        "ALLOCTYPE": "1",
        "NAME": "file10001"
    },
    "error": {
```

```
    "code": 0,
    "description": "0"
  }
}
```

2.11.1.4.6 Interface for Querying File System Reduction Information

Function

This interface is used to query the capacity reduction information of a file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FILESYSTEM/get_fs_reduction_info?ID=${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	File system ID.

Result

Parameter	Mandatory/Conditional	Type	Description
totalWriteCapacity	Mandatory	uint64	Total write capacity. **Unit:**byte
reductionRatio	Mandatory	string	Capacity reduction ratio. **The value is described as follows:** The value contains a maximum of 32 characters.
capacityBeforReduction	Mandatory	uint64	Shared capacity before reduction. **Unit:**byte
capacityAfterReduction	Mandatory	uint64	Shared capacity after reduction. **Unit:**byte

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Parameter	Mandatory/ Conditional	Type	Description
exclCapBeforRed	Mandatory	uint64	Exclusive capacity before reduction. **Unit:**byte
exclCapAfterRed	Mandatory	uint64	Exclusive capacity after reduction. **Unit:**byte
incompressibleCap	Mandatory	uint64	Non-compressible capacity. **Unit:**byte
sharedCapRatio	Mandatory	string	Percentage of shared capacity. **The value is described as follows:** The value contains a maximum of 32 characters.
exclCapRatio	Mandatory	string	Exclusive capacity percentage. **The value is described as follows:** The value contains a maximum of 32 characters.
incompressibleRatio	Mandatory	string	Percentage of non-compressible capacity. **The value is described as follows:** The value contains a maximum of 32 characters.

Example

- Querying the capacity reduction information of a file system.

```
Request: GET /deviceManager/rest/ST000000000000000130/FILESYSTEM/get_fs_reduction_info?ID=1

Response: {
   "data": {
      "totalWriteCapacity": "0",
      "reductionRatio": "1.00:1",
      "capacityBeforReduction": "0",
      "capacityAfterReduction": "0",
      "exclCapBeforRed": "0",
      "exclCapAfterRed": "0",
      "incompressibleCap": 0,
      "sharedCapRatio": "1.00:1",
```

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```
        "exclCapRatio": "0.00%",
        "incompressibleRatio": "1.00:1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.1.4.7 Interface for Querying the File Clone Mode

Function

Query the file clone mode.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/show_file_clone

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the target file system. **The value is described as follows:** 1..65535
filePath	Mandatory	string	Specifies the file path. **The value is described as follows:** Absolute path of a file. **Length:**1-4096

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** The value is an integer from 1 to 65535.

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Parameter	Mandatory/ Conditional	Type	Description
filePath	Mandatory	string	Specifies the file path. **The value is described as follows:** Absolute path of a file.
cloneSourceMode	Mandatory	enum	Source file clone mode. **The value is described as follows:** 0:none;1:lazySrc;2:fullSrc;6:lazyAndFullSrc
cloneDestMode	Mandatory	enum	Clone mode of the target file. **The value is described as follows:** 0:none;3:lazyDest;4:fullDest;5:crossFullDest

Example

- Query the file clone mode.

```
Request: GET /deviceManager/rest/210235982610E7873965/show_file_clone?ID=1&filePath=/test.txt

Response: {
    "data": {
        "ID": "1",
        "filePath": "/test.txt",
        "cloneSourceMode": 1,
        "cloneDestMode": 0
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.4.8 Interface for Querying the Number of File Systems

Function

This interface is used to query the number of file systems.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/filesystem/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, HEALTHSTATUS, and RUNNINGSTATUS are supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
RSSTYPE	Optional	enum	Type of file systems that support value-added features. **The value is described as follows:** 23: primary file system that supports remote replication 24: secondary file system that supports remote replication 27: primary file system that supports NAS HyperMetro 28: secondary file system that supports NAS HyperMetro 29: primary file system that supports HyperVault 30: secondary file system that supports HyperVault
PARENTFILESYSTEMID	Optional	uint32	ID of the parent file system to be queried. **The value is described as follows:** To obtain the value, run "show file_system general".

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(int)	Number of queried file systems.

Example

- Querying the number of file systems.

```
Request: GET /deviceManager/rest/210235843910E6000009/filesystem/count

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.1.5 Others

2.11.1.5.1 Interface for Displaying the Scanning Information of the File System

Function

This interface is used to display the scanning information of the file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/show_fs_system_scrub?file_system_id=${file_system_id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
file_system_id	Mandatory	string	File system ID. **The value is described as follows:** -

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Result

Parameter	Mandatory/ Conditional	Type	Description
running_status	Mandatory	enum	Running status. **The value is described as follows:** 0: waiting; 1: finished; 2: running; 3: failed
scan_range	Mandatory	enum	File system scan range. **The value is described as follows:** 0: core metadata; 1: all metadata; 2: all metadata and data; 3: path; 4: object; 5: transaction; 6: object range; 7: CSS raw object
medium_errors	Mandatory	uint64	Number of medium errors. **The value is described as follows:** 0: no error occurs
other_errors	Mandatory	uint64	Number of other errors. **The value is described as follows:** 0: no error occurs
process	Mandatory	uint64	Scan progress. **The value is described as follows:** -
total_scaned_capacity	Mandatory	uint64	Total size of scanned data. **The value is described as follows:** -
scrubing_speed	Mandatory	uint64	Scan speed per second. **The value is described as follows:** -

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Parameter	Mandatory/ Conditional	Type	Description
start_time	Mandatory	uint64	Scan start time. **The value is described as follows:** -
end_time	Mandatory	uint64	Scan end time. **The value is described as follows:** -
file_system_id	Mandatory	string	File system ID. **The value is described as follows:** -

Example

- Query scanning information about the file system whose ID is "1".

```
Request: GET /deviceManager/rest/210235982610E7873965/show_fs_system_scrub?file_system_id=1

Response: {
   "data": {
      "end_time": "1664509167",
      "file_system_id": "1",
      "medium_errors": "0",
      "other_errors": "0",
      "running_status": "1",
      "process": "100",
      "scan_range": "1",
      "scrubing_speed": "69632",
      "start_time": "1664509165",
      "total_scaned_capacity": "139264"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.1.5.2 Interface for Splitting a Clone File System

Function

Start, stop, and unsplit a clone file system.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/clone_fs_split

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Conditional	string	ID of a clone file system. **The value is described as follows:** The value is an integer between 1 and 65535. **Note:**Select either id or name.
name	Conditional	string	Name. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Length:**1~255 **Note:**Select either id or name.
splitSpeed	Optional	enum	Splitting rate. **The value is described as follows:** 1: low 2: medium 3: high 4: highest **Default:**2: medium
deleteParentSnapshot	Optional	uint32	Whether to delete the associated snapshots in the parent file system. **The value is described as follows:** The value can be yes or no. The default value is no. **Default:**false: no
action	Mandatory	enum	Action. **The value is described as follows:** 1: Starts splitting. 2: Stops splitting. 3: Cancels splitting.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1023. **Length:**31
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters consisting of letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

N/A

Example

- Start, stop, and unsplit a clone file system.

```
Request: PUT /deviceManager/rest/210235982610E7873965/clone_fs_split
{
    "ID": "10",
    "action": 1,
    "SPLITSPEED": "2",
    "deleteParentSnapshot": false
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.1.5.3 Interface for Splitting the Lazy Clone of a File

Function

Split the lazy clone of a file.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/split_file_lazy_clone/

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fsId	Mandatory	uint32	File system ID.
path	Mandatory	string	File path specified for splitting the lazy clone of the file.
splitWhole	Mandatory	uint8	Whether to split the entire file.
position	Conditional	uint64	Start position of the specified area for splitting the lazy clone. The unit is KB. **Unit:**KB **Note:**None.
length	Conditional	uint32	Length of the specified area for splitting the lazy clone. The unit is KB and the maximum value is 1 MB. **Unit:**KB **Note:**None.

Result

N/A

Example

- Split the lazy clone of a file.

```
Request: PUT /deviceManager/rest/210235982610E7873965/split_file_lazy_clone
{
    "fsid": "1",
    "path": "/test.txt",
    "splitWhole": "1",
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
    }
}
```

2.11.1.5.4 Interface for Stopping the Background Copy Task of a File Clone

Function

Stop the background copy task of a file clone.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/abort_clone_copy_task

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fsId	Mandatory	uint32	Target file system ID. **The value is described as follows:** 1..65535
path	Mandatory	string	Specified file path.
deleteFile	Mandatory	uint8	Whether to delete the target file. **The value is described as follows:** 1: Yes; 0: No

Result

N/A

Example

- Stop the background copy task of a file clone.

```
Request: PUT /deviceManager/rest/210235982610E7873965/abort_clone_copy_task
{
    "fsid": "1",
    "deletefile": "1",
    "path": "/test.txt",
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
```

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```
    "description": "0"
  }
}
```

2.11.2 quota

2.11.2.1 Add

2.11.2.1.1 Interface for Creating a Directory Quota

Function

This interface is used to create a directory quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. For the default directory quota of a file system, PARENTID is the file system ID. For a dtree directory quota, PARENTID is the dtree ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
QUOTATYPE	Mandatory	enum	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
SPACESOFTQUOTA	Conditional	uint64	Space soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 16 PB. The value is an integer multiple of 1,048,576 bytes (1 MB). **Unit:**bytes **Note:** The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPACEHARDQUOTA	Conditional	uint64	Space hard quota. **The value is described as follows:** The maximum value is 16 PB. The value is an integer multiple of 1,048,576 bytes (1 MB). **Unit:**bytes **Note:** The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
FILESOFTQUOTA	Conditional	uint64	Soft quota of the file quantity. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 2 billion. **Note:** The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILEHARDQUOTA	Conditional	uint64	Hard quota of the file quantity. **The value is described as follows:** The maximum value is 2 billion. **Note:** The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
USRGRPOWNERNAME	Conditional	string	User/User group name. **Note:**This parameter must be delivered if "QUOTATYPE" is the user quota or user group quota.
USRGRPTYPE	Conditional	uint32	User/User group type. **The value is described as follows:** 1: local user or local user group 2: domain user or domain user group **Note:**This parameter must be delivered if "QUOTATYPE" is the user quota or user group quota.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SpaceUnitType	Optional	uint32	Space quota unit. **The value is described as follows:** 0: bytes; 1: KB; 2: MB; 3: GB

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaType.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. **The value is described as follows:** For the default directory quota of a file system, parentID is fsid. For a dtree directory quota, parentID is in the format of fsid@dtreeid.

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Parameter	Mandatory/ Conditional	Type	Description
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
RESUSENAME	Mandatory	string	dtree name. **The value is described as follows:** 1. This field can be left empty when you create a directory quota and must be configured when you create a user quota or user group quota. 2. If the default directory quota is returned, the field is left empty. 3. If the directory quota of the specified dtree is returned, the field value is the dtree name.
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes

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Parameter	Mandatory/ Conditional	Type	Description
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.). **Unit:**bytes
FILESOFTQUOTA	Mandatory	string(uint64)	Soft quota of the file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
FILEHARDQUOTA	Mandatory	string(uint64)	Hard quota of the file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.).

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Parameter	Mandatory/ Conditional	Type	Description
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid. **Unit:**bytes
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization. **Unit:**%
FILEUSEDRATE	Mandatory	string(uint32)	File utilization. **Unit:**%
USRGRPOWNERNAME	Mandatory	string	User/User group name.
USRGRPTYPE	Mandatory	string(uint32)	User/User group type. **The value is described as follows:** 1: local user or local user group 2: domain user or domain user group
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Creating a directory quota.

```
Request: POST /deviceManager/rest/210235843910E6000009/FS_QUOTA
{
```

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```
    "QUOTATYPE": 1,
    "FILEHARDQUOTA": 2000,
    "FILESOFTQUOTA": 1000,
    "PARENTID": "34",
    "PARENTTYPE": 40
}

Response: {
    "data": {
        "FILEHARDQUOTA": "2000",
        "FILESOFTQUOTA": "1000",
        "FILEUSED": "-1",
        "FILEUSEDRATE": "-1",
        "ID": "34@0@1",
        "PARENTID": "34",
        "PARENTTYPE": 40,
        "QUOTATYPE": "1",
        "RESUSENAME": "",
        "SPACEHARDQUOTA": "-1",
        "SPACESOFTQUOTA": "-1",
        "SPACEUSED": "-1",
        "SPACEUSEDRATE": "-1",
        "TYPE": 16458,
        "USRGRPOWNERNAME": "",
        "USRGRPTYPE": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.2.1.2 Interface for Creating a Quota

Function

This interface is used to create a quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 16445: dtree 40: file system

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** For the quota of a file system, parentID is fsid. For a dtree quota, parentID is in the format of fsid@dtreeid.
PARENTNAME	Optional	string	File system name. **The value is described as follows:** The value consists of 1 to 255 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.).
QUOTATYPE	Mandatory	enum	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
RESUSENAME	Optional	string	Dtree name. **The value is described as follows:** The value contains 1 to 255 characters, only including letters, digits, spaces, and special characters (! \"#&%$'()*+-.;<=>?@[]^_`{|}~).

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPACESOFTQUOTA	Conditional	uint64	Space soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 256 PB. **Note:**The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
SPACEHARDQUOTA	Conditional	uint64	Space hard quota. **The value is described as follows:** The maximum value is 256 PB. **Note:**The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
SPACEUNITTYPE	Optional	uint32	Space quota unit type. **The value is described as follows:** 0: bytes 1: KB 2: MB 3: GB 4: TB **Note:**The default value is bytes.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILESOFTQUOTA	Conditional	uint64	File quantity soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 2 billion. **Note:**The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
FILEHARDQUOTA	Conditional	uint64	File quantity hard quota. **The value is described as follows:** The maximum value is 2 billion. **Note:**The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
USRGRPOWNERNAME	Conditional	string	User/User group name. **Length:**1~128 **Note:**This parameter must be delivered when "QUOTATYPE" is set to the user quota or user group quota.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAMETYPE	Optional	enum	Name type, which specifies the user name or user group name. **The value is described as follows:** 0: user name 1: user group name
USRGRPTYPE	Conditional	uint32	User/User group type. **The value is described as follows:** 1: local user or local user group 2: domain user or domain user group **Note:**This parameter must be delivered when "QUOTATYPE" is set to the user quota or user group quota.
DOMAINTYPE	Optional	uint32	Domain type of the user. **The value is described as follows:** 0: local 1: AD domain 2: LDAP domain 3: NIS domain **Note:**This parameter must be delivered.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota
ID	Mandatory	string	ID. **The value is described as follows:** The format is parentID@quotaId.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** For the quota of a file system, parentID is fsid. For a dtree quota, parentID is in the format of fsid@dtreeid.
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
RESUSENAME	Mandatory	string	Dtree name. **The value is described as follows:** If the quota of the specified dtree is returned, the field value is the dtree name.

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Parameter	Mandatory/ Conditional	Type	Description
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.).
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.).
SPACEUNITTYPE	Mandatory	string(uint32)	Space quota unit. **The value is described as follows:** The default value is bytes.
FILESOFTQUOTA	Mandatory	string(uint64)	File quantity soft quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).

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Parameter	Mandatory/ Conditional	Type	Description
FILEHARDQUOTA	Mandatory	string(uint64)	File quantity hard quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.).
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization.
FILEUSEDRATE	Mandatory	string(uint32)	File utilization.
USRGRPOWNERNAME	Mandatory	string	Name of a user or user group.
USRGRPTYPE	Mandatory	string(uint32)	Type of a user or a user group. **The value is described as follows:** 1: local user or local user group 2: domain user or domain user group

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Parameter	Mandatory/ Conditional	Type	Description
DOMAINTYPE	Mandatory	string(uint32)	Domain type of the user. **The value is described as follows:** 0: local 1. AD domain 2. LDAP domain 3. NIS domain
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Creating a quota.

```
Request: POST /deviceManager/rest/210235843910E6000009/FS_QUOTA
{
   "QUOTATYPE": 1,
   "FILEHARDQUOTA": 2000,
   "FILESOFTQUOTA": 1000,
   "PARENTID": "34",
   "PARENTTYPE": 40
}

Response:
{
   "data": {
      "FILEHARDQUOTA": "2000",
      "FILESOFTQUOTA": "1000",
      "FILEUSED": "-1",
      "FILEUSEDRATE": "-1",
      "ID": "34@0@1",
      "PARENTID": "34",
      "PARENTTYPE": 40,
      "QUOTATYPE": "1",
      "RESUSENAME": "",
      "SPACEHARDQUOTA": "-1",
      "SPACESOFTQUOTA": "-1",
      "SPACEUSED": "-1",
      "SPACEUSEDRATE": "-1",
      "TYPE": 16458,
      "USRGRPOWNERNAME": "",
      "USRGRPTYPE": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

2.11.2.2 Delete

2.11.2.2.1 Interface for Deleting a Directory Quota

Function

This interface is used to delete a directory quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a directory quota.

```
Request: DELETE  /deviceManager/rest/210235843910E6000009/FS_QUOTA/34@4@1

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.2.2.2 Interface for Deleting a Quota

Function

This interface is used to delete a quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaId.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
forceFlag	Optional	bool	Whether to forcibly execute the configuration command. **The value is described as follows:** 0: does not forcibly perform the configuration operation. 1: forcibly performs the configuration operation. **Default:**0

Result

N/A

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Example

- Deleting a quota.

```
Request: DELETE  /deviceManager/rest/2102358439l0E6000009/FS_QUOTA/34@4@1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.2.3 Modify

2.11.2.3.1 Interface for Modifying Directory Quota Information

Function

This interface is used to modify directory quota information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPACESOFTQUOTA	Conditional	uint64	Space soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 16 PB. The value is an integer multiple of 1,048,576 bytes (1 MB). **Note:** The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
SPACEHARDQUOTA	Conditional	uint64	Space hard quota. **The value is described as follows:** The maximum value is 16 PB. The value is an integer multiple of 1,048,576 bytes (1 MB). **Note:** The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILESOFTQUOTA	Conditional	uint64	Soft quota of the file quantity. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 2 billion. **Note:** The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
FILEHARDQUOTA	Conditional	uint64	Hard quota of the file quantity. **The value is described as follows:** The maximum value is 2 billion. **Note:** The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

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Example

- Modifying directory quota information.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FS_QUOTA/10@0@1
{
    "FILEHARDQUOTA": 4000
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.2.3.2 Interface for Modifying Quota Information

Function

This interface is used to modify a quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaId.

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Parameter	Mandatory/Optional/Conditional	Type	Description
SPACESOFTQUOTA	Conditional	uint64	Space soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 256 PB. **Note:**The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
SPACEHARDQUOTA	Conditional	uint64	Space hard quota. **The value is described as follows:** The maximum value is 256 PB. **Note:**The space hard quota must be greater than the space soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
SPACEUNITTYPE	Optional	uint32	Space quota unit type. **The value is described as follows:** 0: bytes 1: KB 2: MB 3: GB 4: TB **Note:**The default value is bytes.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILESOFTQUOTA	Conditional	uint64	File quantity soft quota. An alarm is reported when the soft quota is exceeded. **The value is described as follows:** The maximum value is 2 billion. **Note:**The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
FILEHARDQUOTA	Conditional	uint64	File quantity hard quota. **The value is described as follows:** The maximum value is 2 billion. **Note:**The file quantity hard quota must be greater than the file quantity soft quota. At least one of SPACESOFTQUOTA, SPACEHARDQUOTA, FILESOFTQUOTA, and FILEHARDQUOTA must be delivered.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

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Example

- Modifying a quota.

```
Request: PUT /deviceManager/rest/210235843910E6000009/FS_QUOTA/10@0@1
{
   "FILEHARDQUOT": 4000
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.2.4 Query

2.11.2.4.1 Interface for Batch Querying Directory Quota Information

Function

This interface is used to batch query basic information about directory quotas.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	ID of a file system or dtree. For the default directory quota of a file system, PARENTID is the file system ID. For a dtree directory quota, PARENTID is the dtree ID.
range	Mandatory	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaType.
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. **The value is described as follows:** For the default directory quota of a file system, parentID is fsid. For a dtree directory quota, parentID is in the format of fsid@dtreeid.
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota

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Parameter	Mandatory/ Conditional	Type	Description
RESUSENAME	Mandatory	string	Dtree name. **The value is described as follows:** 1. This field can be left empty when you create a directory quota and must be configured when you create a user quota or user group quota. 2. If the default directory quota is returned, the field is left empty. 3. If the directory quota of the specified dtree is returned, the field value is the dtree name.
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes

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Parameter	Mandatory/ Conditional	Type	Description
FILESOFTQUOTA	Mandatory	string(uint64)	Soft quota of the file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
FILEHARDQUOTA	Mandatory	string(uint64)	Hard quota of the file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid. **Unit:**bytes
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization. **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
FILEUSEDRATE	Mandatory	string(uint32)	File utilization. **Unit:**%
USRGRPOWNERNAME	Mandatory	string	Name of a user or user group.
USRGRPTYPE	Mandatory	string(uint32)	Type of a user or a user group. **The value is described as follows:** 1: Local user or local user group 2: Domain user or domain user group
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
usrOsType	Mandatory	enum	User system type. **The value is described as follows:** 0: UNIX 1: Windows

Example

- Batch querying basic information about directory quotas.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA?
PARENTTYPE=40&PARENTID=1&range=[0-100]

Response: {
   "data": [
      {
         "TYPE": 16458,
         "ID": "1@3",
         "PARENTTYPE": 40,
         "PARENTID": "1",
         "vstoreId": "0",
         "vstoreName": "System_vStore",
         "QUOTATYPE": "1",
         "RESUSENAME": "",
         "SPACESOFTQUOTA": "-1",
         "SPACEHARDQUOTA": "-1",
         "FILESOFTQUOTA": "-1",
         "FILEHARDQUOTA": "-1",
         "SPACEUSED": "18446744073709551615",
         "FILEUSED": "1844674407370955161 5",
```

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```
            "SPACEUSEDRATE": "4294967295",
            "FILEUSEDRATE": "4294967295",
            "USRGRPOWNERNAME": "--",
            "USRGRPTYPE": "4294967295",
            "recordId": "",
            "DOMAINTYPE": "4294967295",
            "SPACEUNITTYPE": "1",
            "usrOsType": "0",
            "NAMETYPE": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.2.4.2 Interface for Batch Querying Quota Information

Function

This interface is used to batch query basic information about quotas.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. For a file system quota, PARENTID is the file system ID. For a dtree quota, PARENTID is the dtree ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTNAME	Optional	string	File system name. **The value is described as follows:** The value consists of 1 to 255 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.).
RESUSENAME	Optional	string	Dtree name. **The value is described as follows:** The value contains 1 to 255 characters, only including letters, digits, spaces, and special characters (! \"#&%$'()*+-.;<=>?@[]^_`{|}~).
QUERYTYPE		uint32	Query type. **The value is described as follows:** 0: all (default) 1: custom 2: report
SPACEUNITTYPE	Optional	uint32	Space quota unit type. **The value is described as follows:** 0: bytes 1: KB 2: MB 3: GB 4: TB **Note:**The default value is bytes.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Mandatory	string	Query range. **The value is described as follows:** Query range: [i-j]. "range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: QUOTATYPE and RESUSENAME.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaId.

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Parameter	Mandatory/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. **The value is described as follows:** For the quota of a file system, parentID is fsid. For a dtree quota, parentID is in the format of fsid@dtreeid.
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
RESUSENAME	Mandatory	string	Dtree name. **The value is described as follows:** If the quota of the specified dtree is returned, the field value is the dtree name.

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Parameter	Mandatory/ Conditional	Type	Description
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
SPACEUNITTYPE	Mandatory	string(uint32)	Space quota unit. **The value is described as follows:** The default value is bytes.
FILESOFTQUOTA	Mandatory	string(uint64)	File quantity soft quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).

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Parameter	Mandatory/ Conditional	Type	Description
FILEHARDQUOTA	Mandatory	string(uint64)	File quantity hard quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid. **Unit:**bytes
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization. **Unit:**%
FILEUSEDRATE	Mandatory	string(uint32)	File utilization. **Unit:**%
USRGRPOWNERNAME	Mandatory	string	Name of a user or user group.
USRGRPTYPE	Mandatory	string(uint32)	Type of a user or a user group. **The value is described as follows:** 1: local user and local user group 2: domain user and domain user group

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Parameter	Mandatory/ Conditional	Type	Description
NAMETYPE	Mandatory	enum	Name type. The value can be a user name or user group name. **The value is described as follows:** 0: user name 1: user group name
DOMAINTYPE	Mandatory	string(uint32)	Type of a domain user. **The value is described as follows:** 0: local 1: AD domain 2: LDAP domain 3: NIS domain
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
recordId	Mandatory	string	Record ID.
usrOsType	Mandatory	enum	User system type. **The value is described as follows:** 0: UNIX 1: Windows

Example

- Batch querying basic information about quotas.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA?
PARENTTYPE=40&PARENTID=10&range=[0-100]

Response:
{
   "data": [
      {
         "FILEHARDQUOTA": "2000",
         "FILESOFTQUOTA": "1000",
         "FILEUSED": "0",
         "FILEUSEDRATE": "0",
         "ID": "10@0@1",
         "PARENTID": "10",
         "PARENTTYPE": 40,
         "QUOTATYPE": "1",
         "RESUSENAME": "test10003",
         "SPACEHARDQUOTA": "2147483648",
         "SPACESOFTQUOTA": "1073741824",
         "SPACEUSED": "0",
         "SPACEUSEDRATE": "0",
         "TYPE": 16458,
```

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```
        "USRGRPOWNERNAME": "",
        "USRGRPTYPE": "0"
        "usrOsType":"0"
      }
],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```


2.11.2.4.3 Interface for Querying Directory Quota Information

Function

This interface is used to query information about a directory quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaType.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota

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Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaType.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. **The value is described as follows:** For the default directory quota of a file system, parentID is fsid. For a dtree directory quota, parentID is in the format of fsid@dtreeid.
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota

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Parameter	Mandatory/ Conditional	Type	Description
RESUSENAME	Mandatory	string	Dtree name. **The value is described as follows:** 1. This field can be left empty when you create a directory quota and must be configured when you create a user quota or user group quota. 2. If the default directory quota is returned, the field is left empty. 3. If the directory quota of the specified dtree is returned, the field value is the dtree name.
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** Supports a maximum of 16 PB (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.). **Unit:**bytes

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Parameter	Mandatory/ Conditional	Type	Description
FILESOFTQUOTA	Mandatory	string(uint64)	Soft quota of file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
FILEHARDQUOTA	Mandatory	string(uint64)	Hard quota of file quantity. **The value is described as follows:** Supports a maximum of 2 billion (This parameter is optional for hard quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no hard quota is configured.).
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid. **Unit:**bytes
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization. **Unit:**%

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Parameter	Mandatory/ Conditional	Type	Description
FILEUSEDRATE	Mandatory	string(uint32)	File utilization. **Unit:**%
USRGRPOWNERNAME	Mandatory	string	Name of a user or user group.
USRGRPTYPE	Mandatory	string(uint32)	Type of a user or a user group. **The value is described as follows:** 1: Local user or local user group 2: Domain user or domain user group
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
usrOsType	Mandatory	enum	User system type. **The value is described as follows:** 0: UNIX; 1: Windows

Example

- Querying information about a directory quota.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA/34@4@1

Response:
{
   "data": {
      "FILEHARDQUOTA": "2000",
      "FILESOFTQUOTA": "1000",
      "FILEUSED": "0",
      "FILEUSEDRATE": "0",
      "ID": "34@4@1",
      "PARENTID": "34@4",
      "PARENTTYPE": 16445,
      "QUOTATYPE": "1",
      "RESUSENAME": "test10003",
      "SPACEHARDQUOTA": "2147483648",
      "SPACESOFTQUOTA": "1073741824",
      "SPACEUSED": "0",
      "SPACEUSEDRATE": "0",
      "TYPE": 16458,
      "USRGRPOWNERNAME": "",
```

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```
        "USRGRPTYPE": "0"
        "usrOsType":"0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.2.4.4 Interface for Querying Quota Information

Function

This interface is used to query information about a quota.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaId.
SPACEUNITTYPE	Optional	uint32	Space quota unit type. **The value is described as follows:** 0: bytes 1: KB 2: MB 3: GB 4: TB **Note:**The default value is bytes.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16458: quota
ID	Mandatory	string	Quota ID. **The value is described as follows:** The format is parentID@quotaType.
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 16445: dtree 40: file system
PARENTID	Mandatory	string	ID of a file system or dtree. **The value is described as follows:** For the quota of a file system, parentID is fsid. For a dtree quota, parentID is in the format of fsid@dtreeid.
QUOTATYPE	Mandatory	string(enum)	Quota type. **The value is described as follows:** 1: directory quota 2: user quota 3: user group quota
RESUSENAME	Mandatory	string	Dtree name. **The value is described as follows:** If the quota of the specified dtree is returned, the field value is the dtree name.

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Parameter	Mandatory/ Conditional	Type	Description
SPACESOFTQUOTA	Mandatory	string(uint64)	Space soft quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
SPACEHARDQUOTA	Mandatory	string(uint64)	Space hard quota. **The value is described as follows:** The maximum value is 256 PB (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.). **Unit:**bytes
FILESOFTQUOTA	Mandatory	string(uint64)	File quantity soft quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).

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Parameter	Mandatory/ Conditional	Type	Description
FILEHARDQUOTA	Mandatory	string(uint64)	File quantity hard quota. **The value is described as follows:** The maximum value is 2 billion (This parameter is optional for soft quota creation and modification. If INVALID_VALUE64 is displayed in the query response, no soft quota is configured.).
SPACEUNITTYPE	Mandatory	string(uint32)	Space quota unit. **The value is described as follows:** The default value is bytes.
SPACEUSED	Mandatory	string(uint64)	Used space. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid. **Unit:**bytes
FILEUSED	Mandatory	string(uint64)	Number of used files. **The value is described as follows:** If INVALID_VALUE64 is displayed in the query response, the value is invalid.
SPACEUSEDRATE	Mandatory	string(uint32)	Space utilization. **Unit:**%
FILEUSEDRATE	Mandatory	string(uint32)	File utilization. **Unit:**%
USRGRPOWNERNAME	Mandatory	string	Name of a user or user group.

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Parameter	Mandatory/ Conditional	Type	Description
USRGRPTYPE	Mandatory	string(uint32)	Type of a user or a user group. **The value is described as follows:** 1: local user or local user group 2: domain user or domain user group
NAMETYPE	Mandatory	enum	Indicates the name type. The name type is user name or user group name. **The value is described as follows:** 0: user name 1: user group name
DOMAINTYPE	Mandatory	string(uint32)	Domain type of the user. **The value is described as follows:** 0: local 1: AD domain 2: LDAP domain 3: NIS domain
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
usrOsType	Mandatory	enum	User system type. **The value is described as follows:** 0: UNIX 1: Windows

Example

- Querying information about a quota.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA/34@4@1

Response:
{
   "data": {
      "FILEHARDQUOTA": "2000",
      "FILESOFTQUOTA": "1000",
      "FILEUSED": "0",
      "FILEUSEDRATE": "0",
```

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```
        "ID": "34@4@1",
        "PARENTID": "34@4",
        "PARENTTYPE": 16445,
        "QUOTATYPE": "1",
        "RESUSENAME": "test10003",
        "SPACEHARDQUOTA": "2147483648",
        "SPACESOFTQUOTA": "1073741824",
        "SPACEUSED": "0",
        "SPACEUSEDRATE": "0",
        "TYPE": 16458,
        "USRGRPOWNERNAME": "",
        "USRGRPTYPE": "0"
        "usrOsType":"0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.2.4.5 Interface for Querying the Number of Directory Quotas

Function

This interface is used to query the number of directory quotas.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type of the parent object. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	ID of the parent object.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried directory quotas.

Example

- Querying the number of directory quotas.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA/count?
PARENTTYPE=40&PARENTID=9

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.2.4.6 Interface for Querying the Number of Quotas

Function

This interface is used to query the number of quotas.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/FS_QUOTA/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/ Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 16445: dtree 40: file system

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	ID of the parent object. **The value is described as follows:** For the quota of a file system, parentID is fsid. For a dtree quota, parentID is in the format of fsid@dtreeid.
QUERYTYPE		uint32	Query type. **The value is described as follows:** 0: all (default) 1: custom 2: report
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried directory quotas.

Example

- Querying the number of quotas.

```
Request: GET /deviceManager/rest/210235843910E6000009/FS_QUOTA/count?
PARENTTYPE=40&PARENTID=9

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.2.5 Others

2.11.3 share

2.11.3.1 Add

2.11.3.1.1 Interface for Adding a CIFS Share User (Group)

Function

This interface is used to add a CIFS share user (user group).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of a user or user group. **Length:**1~256 **Note:**The user group name must start with an at sign (@).
PARENTID	Mandatory	string	CIFS share ID.
DOMAINTYPE	Optional	enum	Domain type. **The value is described as follows:** 0: AD domain user or user group. 2: Local user or user group. **Default:**2

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Parameter	Mandatory/Optional/Conditional	Type	Description
PERMISSION	Mandatory	enum	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read and write (cannot be deleted or renamed)
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Object ID.
NAME	Mandatory	string	Name of a user or user group.
PARENTID	Mandatory	string	CIFS share ID.
DOMAINTYPE	Mandatory	string(uint32)	Domain type. **The value is described as follows:** 0: AD domain user or user group. 2: Local user or user group.
PERMISSION	Mandatory	string(uint32)	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read and write

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be delivered in multi-vStore scenarios.

Example

- Adding a CIFS share user (user group).

```
Request: POST /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT
{
   "NAME": "jordan",
   "PARENTID": "1",
   "DOMAINTYPE": "2",
   "PERMISSION": "0"
}

Response:
 {
   "data": {
      "DOMAINTYPE": "2",
      "ID": "4294967297",
      "NAME": "jordan",
      "PARENTID": "1",
      "PERMISSION": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.2 Interface for Adding a Mapping Rule to the CIFS Homedir Share

Function

This interface is used to add a mapping rule to the CIFS homedir share.

HighRisk

You are about to set rules for the Homedir to support the path mapping of multiple file systems. Creating rules with high priority and improving the rule priority may cause interruption of services accessed by users that have been configured with mapping rules of low priority. Deleting mapping rules and lowering priority of existing rules may cause interruption of services accessed by users that have been configured with these mapping rules.

Suggestion: Before performing this operation, confirm that users that have been configured with mapping rules of low priority are not accessing the share.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Mapping rule name of the CIFS homedir share. **Length:**1~255
parentID	Mandatory	string	Homedir share ID.
fsId	Optional	string	File system ID.
fsPath	Mandatory	string	Share path. **Length:**1~1023
priority	Optional	uint32	Priority. **Default:**32 **Length:**1~1024
autoCreate	Optional	bool	Whether to automatically create the directory. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
parentID	Mandatory	string	Homedir share ID.
NAME	Mandatory	string	Mapping rule name of the CIFS homedir share.
fsId	Mandatory	string	File system ID.
fsPath	Mandatory	string	Share path.
priority	Mandatory	string(uint32)	Priority.
autoCreate	Mandatory	string (bool)	Whether to automatically create the directory. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreNAME	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Adding a mapping rule to the CIFS homedir share.

```
Request: POST /deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule
{
      "NAME": "adsfasdf",
      "autoCreate": "false",
      "fsId": "0",
      "fsPath": "/FileSystem001/",
      "parentID": "0",
      "priority": "20"
}

Response:
 {
   "data": {
      "ID": "0",
```

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```
    "NAME": "adsfasdf",
    "autoCreate": "false",
    "fsId": "0",
    "fsPath": "/FileSystem001/",
    "parentID": "0",
    "priority": "20",
    "vstoreId": "0"
  },
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.11.3.1.3 Interface for Adding a UNIX User to a UNIX User Group

Function

This interface is used to add a UNIX user to a UNIX user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER_GROUP_MAP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
user_name	Mandatory	string	Name of the UNIX user. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).

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Parameter	Mandatory/Optional/Conditional	Type	Description
group_name	Mandatory	string	Name of the UNIX user group. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Adding a UNIX user to a UNIX user group.

```
Request: POST /deviceManager/rest/210235843910E6000009/UNIX_USER_GROUP_MAP
{
   "user_name": "unixuser1",
   "group_name": "unixgroup1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.4 Interface for Adding a User or Group to a Windows User Group

Function

This interface is used to add a user or group to a Windows user group.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_GROUP_MAP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of the Windows user, AD domain user, or AD domain user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Length:**1-256
GROUPNAME	Mandatory	string	Name of the Windows user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Length:**1-256

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Parameter	Mandatory/Optional/Conditional	Type	Description
ACCOUNTTYPE	Mandatory	enum	Account type. **The value is described as follows:** 0: WINDOWS_USER 2: AD_USER 3: AD_GROUP **Note:**The "ACCOUNTTYPE" field indicates the Windows local user, AD domain user, or AD domain user group.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Length:**1-10 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Adding a Windows user to a Windows user group.

```
Request: POST /deviceManager/rest/210235843910E6000009/WINDOWS_USER_GROUP_MAP
{
    "NAME": "userWindows",
    "GROUPNAME": "groupWindows",
    "ACCOUNTTYPE": "0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.1.5 Interface for Adding an NFS Share Client

Function

This interface is used to add an NFS share client.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Client IP address, host name, or network group name. **The value is described as follows:** The host name must meet the following requirements: 1. The value contains 1 to 255 characters excluding spaces. 2. The value cannot start with a hyphen (-). The IP address must meet the following requirements: 1. You can enter a single client IP address, a client IP address segment, or use asterisk (*) that represents all client IP addresses. 2. You can enter IPv4, IPv6, or their mixed IP addresses. 3. The mask of IPv4 ranges from 1 to 32. The mask of IPv6 ranges from 1 to 128. For example, 192.168.0.10, 192.168.0.0/24, or *. " The network group name contains 1 to 254 letters, digits, underscores (_), hyphens (-), and periods (.), and must start with an at sign (@). **Length:**1~25600

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Mandatory	string	NFS share ID.
ACCESSVAL	Optional	uint32	Permission. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5	Optional	uint32	Access permission for the NFS share in krb5 security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5I	Optional	uint32	Access permission for the NFS share in krb5i security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5P	Optional	uint32	Access permission for the NFS share in krb5p security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
SYNC	Optional	uint32	Write mode. **The value is described as follows:** 0: synchronization 1: asynchronization **Note:**This parameter is not supported currently.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ALLSQUASH	Mandatory	uint32	Permission constraint. **The value is described as follows:** 0: all_squash 1: no_all_squash
ROOTSQUASH	Mandatory	uint32	root permission constraint. **The value is described as follows:** 0: root_squash 1: no_root_squash
TYPE	Optional	enum	Type number of the managed object. **The value is described as follows:** 16409: NFS_SHARE_AUTH_CLIENT **Default:**16409 **Note:**The field is not used.
SECURE	Optional	uint32	Source port verification. **The value is described as follows:** 0: secure 1: insecure **Default:**1
ANONYMOUSID	Optional	uint32	Anonymous user ID. **Default:**65534 **Length:**0~4294967294 **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	

Example

- Adding an NFS share client.

```
Request: POST /deviceManager/rest/210235843910E6000009/NFS_SHARE_AUTH_CLIENT
{
    "ACCESSVAL": 0,
    "ALLSQUASH": 1,
    "NAME": "*",
    "PARENTID": "1",
    "ROOTSQUASH": 0,
    "SYNC": 0
}

Response:
{
    "data": {
        "ID": "5"
     },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.1.6 Interface for Creating a CIFS Share

Function

This interface is used to create a CIFS share.

HighRisk

You are about to enable the SMB3 encryption service. This operation will cause the performance of the SMB3 service provided by the device to deteriorate, and you need to remount the share to make this function take effect. Suggestion: Ensure that you need to enable the SMB3 encryption service.
You are about to enable non-encryption client access. After this operation, clients of earlier versions (for example, Windows 7) can access shares with SMB3 encryption enabled in plaintext mode. Suggestion: Ensure that you want to perform this operation. This operation affects only shares with SMB3 encryption enabled.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value cannot include special characters including " / \ [ ] : | < > + ; , ? * =, and cannot be the name reserved by the system such as ipc$, autohome, ~, and print$. **Length:**1~80
subType	Optional	uint32	Share object subtype. **The value is described as follows:** 0: normal 1: homedir 2: all **Default:**0: normal
DESCRIPTION	Optional	string	Description. **Length:**0~255
SHAREPATH	Mandatory	string	Share path. **The value is described as follows:** /file system name/quota tree name. **Length:**2-1024

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Parameter	Mandatory/Optional/Conditional	Type	Description
ABEENABLE	Optional	bool	After this function is enabled, users can only access folders for which the users have access permission. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled **Note:**This field is not supported temporarily.
ENABLEOPLOCK	Optional	bool	Indicates whether oplock is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Optional	bool	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This field is not supported temporarily.
ENABLECA	Optional	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled **Note:**This field is not supported temporarily.
FSID	Optional	string	File system ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
OFFLINEFILEMODE	Optional	enum	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs **Default:**1: manual **Note:**This field is not supported temporarily.
smb3EncryptionEnable	Optional	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: on false: off **Default:**false: off
ENABLEIPCONTROL	Optional	bool	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUDITITEMS	Optional	array	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr **Default:**0: none
APPLYDEFAULTACL	Optional	bool	Whether to enable the default ACL. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Optional	bool	Whether to enable the file name extension filtering feature. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLESHOWPREVIOUSVERSIONS	Optional	bool	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
ENABLESHOWSNAPSHOT	Optional	bool	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
DTREEID	Optional	string	Dtree ID. **Length:**1-20
leaseEnable	Optional	bool	Lease lock switch. The client can use the lease key to lock the file, and the server can cancel the lock. SMB 2.1 and later versions support lease lock. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled

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Parameter	Mandatory/Optional/Conditional	Type	Description
unencryptedAccess	Optional	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: on false: off **Default:**false: off

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Conditional	string	Description.
SHAREPATH	Mandatory	string	Share path.
ABEENABLE	Conditional	string(bool)	After this function is enabled, users can only access folders for which the users have access permission.
FSID	Conditional	string	File system ID.
ENABLEOPLOCK	Conditional	string(bool)	Indicates whether oplock is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLENOTIFY	Conditional	string(bool)	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ENABLECA	Conditional	string(bool)	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLEIPCONTROL	Conditional	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled
OFFLINEFILEMODE	Conditional	string(enum)	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs
AUDITITEMS	Conditional	string(array)	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr

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Parameter	Mandatory/ Conditional	Type	Description
APPLYDEFAULTACL	Conditional	string(bool)	Whether to enable the default ACL. **The value is described as follows:** true: enabled false: disabled
ENABLEFILEEXTEN-SIONFILTER	Conditional	string(bool)	Whether to enable the file name extension filtering feature. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWPREVIO USVERSIONS	Conditional	string(bool)	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPS HOT	Conditional	string(bool)	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
DTREEID	Mandatory	string	Dtree ID.

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Parameter	Mandatory/ Conditional	Type	Description
leaseEnable	Mandatory	string(bool)	Lease lock switch. The client can use the lease key to lock the file, and the server can cancel the lock. SMB 2.1 and later versions support lease lock. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Conditional	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled
unencryptedAccess	Conditional	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: enabled false: disabled

Example

- Creating a CIFS share.

```
Request: POST /deviceManager/rest/210235843910E6000009/CIFSSHARE {
   "NAME": "G1",
   "SHAREPATH": "/FileSystem010/",
   "DESCRIPTION": "1",
   "FSID": "5",
   "AUDITITEMS": [
      0
   ],
   "ENABLESHOWPREVIOUSVERSIONS": true,
   "ENABLESHOWSNAPSHOT": true,
   "leaseEnable": true
}

Response: {
   "data": {
      "AUDITITEMS": "[0]",
      "DESCRIPTION": "1",
      "FSID": "5",
      "ID": "1",
      "vstoreId": "0",
      "NAME": "G1",
```

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```
        "SHAREPATH": "/FileSystem010/",
        "ENABLESHOWPREVIOUSVERSIONS": "true",
        "ENABLESHOWSNAPSHOT": "true",
        "leaseEnable": true,
        "DTREEID": "1@0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.1.7 Interface for Creating a File Name Extension Filtering Rule

Function

Create a file name extension filtering rule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SHARE_FILE_EXTENSION_FILTER

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share
PARENTID	Mandatory	string	Share ID. **The value is described as follows:** 0-2^64-1.

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILEEXTENSIONNAME	Mandatory	string	File name extension. **The value is described as follows:** The parameter value contains 1 to 127 visible ASCII characters, and contains only digits, letters, spaces, and special characters including (!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~). Wildcards (?) and (*) are supported. Wildcard (*) can only be the last character of each file name extension. Multiple file name extensions are separated by commas (,) and must be unique. On the CLI, the following characters must be entered in escape mode: "|" indicates "|", "\\" indicates "\", "\q" indicates "?", and "\s" indicates a space.
RULETYPE	Mandatory	uint32	Rule type. **The value is described as follows:** 0: reject only; 1: allow only
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
FILEOPERATIONS	Optional	string	File operation. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (close), 2 (create), 3 (create_dir), 4 (delete), 5 (delete_dir), 6 (getattr), 7 (link), 8 (lookup), 9 (open), 10 (read), 11 (write), 12 (rename), 13 (rename_dir), 14 (setattr), or 15 (symlink). Other values are invalid. If PARENTTYPE is set to 16402 (CIFS share), 7 (link), 8 (lookup), and 15 (symlink) are not supported. **Length:**128

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
PARENTTYPE	Mandatory	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share
PARENTID	Mandatory	string	Share ID. **The value is described as follows:** 0-18446744073709551615
FILEEXTENSIONNAME	Mandatory	string	File name extension.
RULETYPE	Mandatory	enum	Rule type. **The value is described as follows:** 0: reject only; 1: allow only
FILEOPERATIONS	Mandatory	string	File operation. **The value is described as follows:** The value is close, create, create_dir, delete, delete_dir, getattr, link, lookup, open, read, write, rename, rename_dir, setattr, or symlink.

Example

- Create a file name extension filtering rule.

```
Request: POST /deviceManager/rest/2102350BVB10FA000073/SHARE_FILE_EXTENSION_FILTER
{
   "vstoreId": "1",
   "PARENTTYPE": "16401",
   "PARENTID": "1",
   "FILEEXTENSIONNAME": "4",
   "RULETYPE":"0",
   "FILEOPERATIONS": "1"
```

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```
}

Response: {
   "data": {
      "ID": "1",
      "PARENTTYPE": "16401",
      "PARENTID": "1",
      "FILEEXTENSIONNAME": "txt",
      "RULETYPE": 0,
      "FILEOPERATIONS": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.8 Interface for Creating a UNIX User

Function

This interface is used to create a UNIX user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64

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Parameter	Mandatory/Optional/Conditional	Type	Description
description	Optional	string	Description. **The value is described as follows:** The value contains 0 to 255 characters. **Length:**0~255
primary_group_id	Conditional	string	ID of the primary group to which a user belongs. **The value is described as follows:** The value ranges from 0 to 4,294,967,295. **Note:**Either primary_group_id or primary_group_name must be specified. If both of them are specified, only primary_group_id takes effect.
primary_group_name	Conditional	string	Name of the primary group to which a user belongs. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64 **Note:**Either primary_group_id or primary_group_name must be specified. If both of them are specified, only primary_group_id takes effect.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.
id	Optional	string	ID of the UNIX user. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.

Result

N/A

Example

- Creating a UNIX user.

```
Request: POST /deviceManager/rest/210235843910E6000009/UNIX_USER
{
   "name": "test6",
   "primary_group_id": "100000",
   "primary_group_name": "default_group",
   "description": ""
}

Response:
 {
   "data": {
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.9 Interface for Creating a UNIX User Group

Function

This interface is used to create a UNIX user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of the UNIX user group. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64
description	Optional	string	Description. **The value is described as follows:** The value contains 0 to 255 characters. **Length:**0~255
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.
id	Optional	string	ID of the UNIX user group. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.

Result

N/A

Example

- Creating a UNIX user group.

```
Request: POST /deviceManager/rest/210235843910E6000009/UNIX_GROUP
{
```

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```
    "description": "xzczc",
    "name": "test00000"
}

Response:
 {
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.1.10 Interface for Creating a User Mapping

Function

This interface is used to create a user mapping.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
MAPPINGTYPE	Mandatory	enum	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows
FROMIDENTITY	Mandatory	string	Source user. **The value is described as follows:** The value cannot contain ""/][><+:;,?|=@" or two consecutive asterisks (*). **Length:**1~256

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Parameter	Mandatory/Optional/Conditional	Type	Description
TOIDENTITY	Mandatory	string	Target user. **The value is described as follows:** The value cannot contain ""/][><+:;,?*|=@". **Length:**1~256
RULEPRIORITY	Optional	uint32	Priority. **The value is described as follows:** 1 to 32. **Default:**10
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
FROMIDENTITY	Mandatory	string	Source user.
MAPPINGTYPE	Mandatory	string(enum)	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows
RULEPRIORITY	Mandatory	uint32	Priority.
TOIDENTITY	Mandatory	string	Target user.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

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Example

- Creating a user mapping.

```
Request: POST /deviceManager/rest/210235843910E6000009/identitymapping
{
   "MAPPINGTYPE": "0",
   "FROMIDENTITY": "user1",
   "TOIDENTITY": "user2",
   "RULEPRIORITY": 10
}

Response:
{
   "data": {
      "FROMIDENTITY": "user1",
      "ID": "9",
      "MAPPINGTYPE": "0",
      "RULEPRIORITY": "10",
      "TOIDENTITY": "user2",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.11 Interface for Creating a Windows User

Function

This interface is used to create a Windows user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Windows user name. **The value is described as follows:** The name contains a maximum of 20 letters, digits, hyphens (-), periods (.), and underscores (_), and cannot contain spaces, control characters, or any of the following special characters: "/\ []:|<>+=;?*@,. The minimum length of the name is controlled by security policies, and the last character cannot be a period (.). **Length:**1~20
RID	Optional	string	Windows user RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295.
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORD	Mandatory	string	Password. **The value is described as follows:** The password complexity is controlled by security policies. **Length:**6~32 **Note:** The password: 1:The value contains 6 to 32 characters. 2. "Normal": Contains at least any two types of special characters, uppercase letters, lowercase letters, and digits. 3. "High": Contains special characters, and at least any two types of uppercase letters, lowercase letters, and digits. 4. Cannot be the same as the user name or mirror writing of the user name.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
STATUSENABLE	Optional	bool	User status. **The value is described as follows:** true: enabled false: locked **Default:**true

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Parameter	Mandatory/Optional/Conditional	Type	Description
PRIVILEGES	Optional	string	Windows user privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Length:**1~256 **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory		Windows user name.
RID	Mandatory		Windows user RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295.
DESCRIPTION	Conditional		Description.
vstoreId	Conditional		vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
STATUSENABLE	Mandatory		User status. **The value is described as follows:** true: enabled false: locked
PASSWORDVALIDPERIOD	Mandatory		Remaining password validity period. **The value is described as follows:** The value ranges from 0 to 999. FFFFFFFF(4294967295) indicates disabled.
PRIVILEGES	Mandatory		Windows user privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Example

- Creating a Windows user.

```
Request: POST /deviceManager/rest/210235843910E6000009/WINDOWS_USER
{
   "NAME": "test",
```

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```
    "PASSWORD": "test@123",
    "DESCRIPTION": "",
    "PRIVILEGES":"1"
}

Response: {
    "data": {
        "DESCRIPTION": "",
        "RID": "100000",
        "NAME": "test",
        "PASSWORDVALIDPERIOD": "175",
        "STATUSENABLE": "true",
        "PRIVILEGES": "1",
        "vstoreId": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.1.12 Interface for Creating a Windows User Group

Function

This interface is used to create a Windows user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_GROUP

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Windows user group name. **The value is described as follows:** The value can neither include "/\[]:|<>+=;?*@, and control characters nor end with a period (.). **Length:**1~256
RID	Optional	string	Windows user group RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **Length:**0~255
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
PRIVILEGES	Optional	string	Windows user group privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Length:**1~256 **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory	string	Windows user group name.

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Parameter	Mandatory/ Conditional	Type	Description
RID	Mandatory	string	Windows user group RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295.
DESCRIPTION	Mandatory	string	Description.
vstoreId	Conditional	string	User group type. **The value is described as follows:** 1: default 2: created by an administrator
GROUPTYPE	Mandatory	string(enum)	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
PRIVILEGES	Mandatory	string	Windows user group privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

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Example

- Creating a Windows user group.

```
Request: POST /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP
{
   "DESCRIPTION": "xzczc",
   "NAME": "test00000",
   "RID": "1001",
  "PRIVILEGES":"1"
}

Response: {
   "data": {
      "DESCRIPTION": "xzczc",
      "NAME": "test00000",
      "RID": "1001",
      "vstoreId": "0",
      "GROUPTYPE": "2",
      "PRIVILEGES": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.13 Interface for Creating an IP Address Control Rule for a CIFS Share

Function

Create an IP address control rule for a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cifsShareID	Mandatory	string	CIFS share ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
rule	Mandatory	string	Rule. **Note:**The value is a string of 1 to 95 characters, which can contain only hexadecimal digits and special characters .:/-. Only one slash (/) or hyphen (-) can be contained in the value. For example, the fixed IP address is 100.200.32.5 or 1050:0:0:0:5:600:300c:326b, the network segment is 100.202.60.0/24 or 21DA:D3:0:2F3B:2AA:FF:FE28:9C5/64, and the IP address range is 192.168.1.1-192.168.1.100/24. In this case, ensure that the two IP addresses are in the same network segment. Otherwise, the setting fails. The IP address segment must contain a mask.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Create an IP address control rule for a CIFS share.

```
Request: POST /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE
{
    "cifsShareID": "0",
    "vstoreId":0,
    "rule": "192.168.2.2"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.1.14 Interface for Creating an NFS Share

Function

This interface is used to create an NFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **Length:**0~255
NAME	Optional	string	Share alias. **The value is described as follows:** The value must start with a slash (/). Apart from the starting slash (/), the value can contain 1 to 255 characters, including letters, digits, special characters (!\"#&% $'()*+-,.:;<=>? @[]^_`{|}~), and spaces. **Length:**1-255 **Note:**This field is not supported temporarily.
SHAREPATH	Mandatory	string	Share path. **Length:**1~1024
FSID	Optional	string	File system ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
LOCKPOLICY	Optional	enum	NFS lock policy. **The value is described as follows:** 0: Mandatory locking 1: Advisory locking **Default:**0: Mandatory locking **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHARACTERENCODING	Optional	enum	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 41: AR 42: CS 43: DA 44: FI 45: HE 46: HR 47: HU 48: NO 49: NL 50: PL 51: RO 52: RU 53: SK 54: SL 55: SV 56: TR 60: EN-US **Default:**0: UTF-8 **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUDITITEMS	Optional	array	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Default:**0 **Note:**This field is not supported temporarily.
ENABLESHOWSNAPSHOT	Optional	bool	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
DTREEID	Optional	string	Dtree ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fileHandleByteAlignmentSwitch	Optional	bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16401: NFSHARE
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
DTREEID	Mandatory	string	Dtree ID.
fileHandleByteAlign-mentSwitch		bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Example

- Creating an NFS share.

```
Request: POST /deviceManager/rest/210235843910E6000009/NFSSHARE
{
   "SHAREPATH": "/FileSystem0050001/",
   "DESCRIPTION": "",
   "DTREEID": "5@0",
   "FSID": "5"
}

Response: {
   "data": {
      "SHAREPATH": "/FileSystem0050001/",
      "ID": "1",
      "DTREEID": "5@0",
      "DESCRIPTION": "",
      "FSID": "5",
      "ENABLESHOWSNAPSHOT": "true",
      "TYPE": 16401,
      "vstoreId": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.15 (Not Recommended)Interface for Creating a CIFS Share

Function

Create a CIFS share.

HighRisk

You are about to enable the SMB3 encryption service. This operation will cause the performance of the SMB3 service provided by the device to deteriorate, and you need to remount the share to make this function take effect. Suggestion: Ensure that you need to enable the SMB3 encryption service.

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You are about to enable non-encryption client access. After this operation, clients of earlier versions (for example, Windows 7) can access shares with SMB3 encryption enabled in plaintext mode.

Suggestion: Ensure that you want to perform this operation. This operation affects only shares with SMB3 encryption enabled.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name. **The value is described as follows:** The value cannot contain "/\[]:|<>+;,? * =, and cannot be the name reserved by the system such as ipc$, autohome, ~, and print$. **Length:**1~80
subType	Optional	uint32	Subtype of a shared object. **The value is described as follows:** 0: normal 1: homedir 2: all **Default:**0: normal
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
SHAREPATH	Mandatory	string	Share path. **The value is described as follows:** /file system name/quota tree name. **Length:**2-1024
ABEENABLE	Optional	bool	If this function is enabled, users cannot view folders on which they do not have permission. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled. **Note:**This parameter is not supported currently.
ENABLEOPLOCK	Optional	bool	Whether to enable the Oplock function. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This parameter is not supported currently.
ENABLENOTIFY	Optional	bool	Whether to enable the Notify function. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This parameter is not supported currently.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLECA	Optional	bool	Whether to enable the failover feature. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled. **Note:**This parameter is not supported currently.
FSID	Optional	string	File system ID.
OFFLINEFILEMODE	Optional	enum	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs **Default:**1: manual **Note:**This parameter is not supported currently.
smb3EncryptionEnable	Optional	bool	Whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ENABLEIPCONTROL	Optional	bool	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled. **Note:**This parameter is not supported currently.
AUDITITEMS	Optional	array	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr **Default:**0: none

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Parameter	Mandatory/Optional/Conditional	Type	Description
APPLYDEFAULTACL	Optional	bool	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This parameter is not supported currently.
ENABLEFILEEXTEN-SIONFILTER	Optional	bool	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled. **Note:**This parameter is not supported currently.
ENABLESHOWPREVIOUSVERSIONS	Optional	bool	Whether to enable the function of displaying earlier versions. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
ENABLESHOWSNAPSHOT	Optional	bool	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DTREEID	Optional	string	Dtree ID. **Length:**1-20
leaseEnable	Optional	bool	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled
unencryptedAccess	Optional	bool	Whether to allow access of non-encrypted clients. **The value is described as follows:** true: enabled false: disabled **Default:**false: disabled

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Conditional	string	Description.
SHAREPATH	Mandatory	string	Share path.
ABEENABLE	Conditional	string(bool)	If this function is enabled, users cannot view folders on which they do not have permission.
FSID	Conditional	string	File system ID.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEOPLOCK	Conditional	string(bool)	Whether to enable the Oplock function. **The value is described as follows:** true: enabled false: disabled
ENABLENOTIFY	Conditional	string(bool)	Whether to enable the Notify function. **The value is described as follows:** true: enabled false: disabled
ENABLECA	Conditional	string(bool)	Whether to enable the failover feature. **The value is described as follows:** true: enabled false: disabled
ENABLEIPCONTROL	Conditional	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled
OFFLINEFILEMODE	Conditional	string(enum)	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs

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Parameter	Mandatory/ Conditional	Type	Description
AUDITITEMS	Conditional	string(array)	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr
APPLYDEFAULTACL	Conditional	string(bool)	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled
ENABLEFILEEXTEN-SIONFILTER	Conditional	string(bool)	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWPREVIO USVERSIONS	Conditional	string(bool)	Whether to enable the function of displaying earlier versions. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWSNAPSHOT	Conditional	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
DTREEID	Mandatory	string	Dtree ID.
leaseEnable	Mandatory	string(bool)	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Conditional	bool	Whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
unencryptedAccess	Conditional	bool	Whether to allow access of non-encrypted clients. **The value is described as follows:** true: enabled false: disabled

Example

- Create a CIFS share.

```
Request: POST /deviceManager/rest/210235843910E6000009/CIFSHARE {
   "NAME": "G1",
   "SHAREPATH": "/FileSystem010/",
   "DESCRIPTION": "1",
   "FSID": "5",
   "AUDITITEMS": [
      0
   ],
   "ENABLESHOWPREVIOUSVERSIONS": true,
   "ENABLESHOWSNAPSHOT": true,
   "leaseEnable": true
}

Response: {
   "data": {
      "AUDITITEMS": "[0]",
      "DESCRIPTION": "1",
      "FSID": "5",
      "ID": "1",
      "vstoreId": "0",
      "NAME": "G1",
      "SHAREPATH": "/FileSystem010/",
      "ENABLESHOWPREVIOUSVERSIONS": "true",
      "ENABLESHOWSNAPSHOT": "true",
      "leaseEnable": true,
      "DTREEID": "1@0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.1.16 (Not Recommended)Interface for Creating an NFS Share

Function

Create an NFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
DESCRIPTION	Optional	string	Description. **Length:**0~255
NAME	Optional	string	Share alias. **The value is described as follows:** The value must start with a slash (/). Apart from the starting slash (/), the value can contain 1 to 255 characters, including letters, digits, special characters (!\"#&%$'()*+-,.:;<=>?@[]^_`{|}~), and spaces. **Length:**1-255 **Note:**This parameter is not supported currently.
SHAREPATH	Mandatory	string	Share path. **Length:**1~1024
FSID	Optional	string	File system ID.
LOCKPOLICY	Optional	enum	NFS lock policy. **The value is described as follows:** 0: Mandatory locking 1: Advisory locking **Default:**0: Mandatory locking **Note:**This parameter is not supported currently.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHARACTERENCODING	Optional	enum	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 41: AR 42: CS 43: DA 44: FI 45: HE 46: HR 47: HU 48: NO 49: NL 50: PL 51: RO 52: RU 53: SK 54: SL 55: SV 56: TR 60: EN-US **Default:**0: UTF-8

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Parameter	Mandatory/Optional/Conditional	Type	Description
			Note: This parameter is not supported currently.
AUDITITEMS	Optional	array	Indicates the list of events that can be audited. **The value is described as follows:** 0: no operation 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Default:**0 **Note:**This parameter is not supported currently.
ENABLESHOWSNAPSHOT	Optional	bool	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Default:**true: enabled **Note:**This parameter is not supported currently.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
DTREEID	Optional	string	Dtree ID.
fileHandleByteAlign-mentSwitch	Optional	bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Mandatory	string	Description.
NAME	Mandatory	string	Share alias. **Note:**This parameter is not supported currently.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
CHARACTERENCODING	Mandatory	string(enum)	Character encoding used by the current share. **Note:**This parameter is not supported currently.
LOCKPOLICY	Mandatory	string(enum)	NFS lock policy. **The value is described as follows:** 0: Mandatory locking 1: Advisory locking **Note:**This parameter is not supported currently.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 16401: NFSHARE
AUDITITEMS	Mandatory	string(array)	Indicates the list of events that can be audited. **The value is described as follows:** 0: no operation 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This parameter is not supported currently.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This parameter is not supported currently.
DTREEID	Mandatory	string	Dtree ID.
fileHandleByteAlign-mentSwitch		bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Example

- Creates an NFS share.

```
Request: POST/deviceManager/rest/210235843910E6000009/NFSHARE{
    "SHAREPATH": "/FileSystem0050001/",
    "DESCRIPTION": "",
    "DTREEID:5@0",
    "FSID": "5"
}Response: {
    "data": {
        "DESCRIPTION": "",
        "FSID": "5",
        "ID": "1",
        "SHAREPATH": "/FileSystem0050001/",
        "TYPE": 16401
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2 Delete

2.11.3.2.1 Interface for Deleting a CIFS Homedir Share Mapping Rule

Function

This interface is used to delete a mapping rule from the CIFS homedir share.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a mapping rule from the CIFS homedir share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule/0

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.2 Interface for Deleting a CIFS Share

Function

This interface is used to delete a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a CIFS share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/CIFSSHARE/1

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.3 Interface for Deleting a CIFS Share User (Group)

Function

This interface is used to delete a CIFS share user (user group).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Share permission ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a CIFS share user (user group).

```
Request: DELETE /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT/
21474836483

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.4 Interface for Deleting a File Name Extension Filtering Rule

Function

Delete a file name extension filtering rule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/
SHARE_FILE_EXTENSION_FILTER/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

N/A

Example

- Delete a file name extension filtering rule.

```
Request: DELETE /deviceManager/rest/2102350BVB10FA000073/SHARE_FILE_EXTENSION_FILTER/1?
vstoreId=1
Response:
 {
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.2.5 Interface for Deleting a UNIX User

Function

This interface is used to delete a UNIX user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	User name. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a UNIX user.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/UNIX_USER?name=unixuser1

Response:
```

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```
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.2.6 Interface for Deleting a UNIX User Group

Function

Delete the UNIX user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of the UNIX user group. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

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Example

- Deleting a UNIX user group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/UNIX_GROUP?name=mlgroup1

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.2.7 Interface for Deleting a User Mapping

Function

This interface is used to delete a user mapping.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Deleting a user mapping.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/identitymapping/0

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.11.3.2.8 Interface for Deleting a User or Group from a Windows User Group

Function

This interface is used to delete a user or group from a Windows user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_GROUP_MAP

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Name of the Windows user, AD domain user, or AD domain user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Length:**1-256

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Parameter	Mandatory/Optional/Conditional	Type	Description
GROUPNAME	Mandatory	string	Name of the Windows user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Length:**1-256
ACCOUNTTYPE	Mandatory	enum	Account type. **The value is described as follows:** 0: WINDOWS_USER 2: AD_USER 3: AD_GROUP **Note:**The "ACCOUNTTYPE" field indicates the Windows local user, AD domain user, or AD domain user group.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Length:**1-10 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a Windows user from a Windows user group.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/WINDOWS_USER_GROUP_MAP
{
   "NAME": "userWindows",
   "GROUPNAME": "groupWindows",
   "ACCOUNTTYPE":"0"
```

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```
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.9 Interface for Deleting a Windows User

Function

This interface is used to delete a Windows user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
RID	Optional	string	Windows user RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295. **Note:**The parameter must contain one of the NAME and RID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Windows user name. **The value is described as follows:** The name contains a maximum of 20 letters, digits, hyphens (-), periods (.), and underscores (_), and cannot contain spaces, control characters, or any of the following special characters: "/\ []:|<>+=;?*@, and the last character cannot be a period (.). **Length:**1~20 **Note:**The parameter must contain one of the NAME and RID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a Windows user by name.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/WINDOWS_USER?NAME=test

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting a Windows user by RID.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/WINDOWS_USER?RID=100000

Response: {
   "data": {

   },
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.11.3.2.10 Interface for Deleting a Windows User Group

Function

This interface is used to delete a Windows user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_GROUP

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Windows user group name. **The value is described as follows:** The value can neither include "/[]:|<>+=;?*@, and control characters nor end with a period (.). **Length:**1~256 **Note:**The parameter must contain one of the NAME and RID.
RID	Optional	string	Windows user group RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295. **Note:**The parameter must contain one of the NAME and RID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Deleting a Windows user group by name.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP?NAME=testgroup

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Deleting a Windows user group by RID.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP?RID=1000

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.2.11 Interface for Deleting an IP Address Control Rule for a CIFS Share

Function

Delete an IP address control rule for a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE/{ID}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Rule ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**128
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Delete an IP address control rule for a CIFS share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE?ID=1

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.12 Interface for Deleting an NFS Share

Function

This interface is used to delete an NFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting an NFS share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/NFSSHARE/2

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.13 Interface for Deleting an NFS Share Client

Function

This interface is used to delete an NFS share client.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of an NFS share client.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting an NFS share client.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/NFS_SHARE_AUTH_CLIENT/1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.2.14 Interface for Removing a UNIX User from a UNIX User Group

Function

Remove the UNIX user from the user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER_GROUP_MAP

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
user_name	Mandatory	string	Name of the UNIX user. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
group_name	Mandatory	string	Name of the UNIX user group. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Removing a UNIX user from the user group.

  ```
  Request: DELETE /deviceManager/rest/210235843910E6000009/UNIX_USER_GROUP_MAP?
  user_name=unixuser1&group_name=unixgroup1
  ```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.2.15 (Not Recommended)Interface for Deleting a CIFS Share

Function

This interface is used to delete a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Delete a CIFS share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/CIFSHARE/1

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.2.16 (Not Recommended)Interface for Deleting an NFS Share

Function

Delete an NFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Delete an NFS share.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/NFSHARE/2

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3 Modify

2.11.3.3.1 Interface for Modifying a File Name Extension Filtering Rule

Function

Modify file name extension filtering rules.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SHARE_FILE_EXTENSION_FILTER/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
PARENTTYPE	Mandatory	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share

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Parameter	Mandatory/Optional/Conditional	Type	Description
FILEEXTENSIONNAME	Optional	string	File name extension. **The value is described as follows:** The parameter value contains 1 to 127 visible ASCII characters, and contains only digits, letters, spaces, and special characters including (!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~). Wildcards (?) and (*) are supported. Wildcard (*) can only be the last character of each file name extension. Multiple file name extensions are separated by commas (,) and must be unique. On the CLI, the following characters must be entered in escape mode: "|" indicates "|", "\\" indicates "\", "\q" indicates "?", and "\s" indicates a space.
RULETYPE	Optional	uint32	Rule type. **The value is described as follows:** 0: reject only; 1: allow only
OPERATION	Optional	enum	Operation type. **The value is described as follows:** The options are as follows: 1: add; 2: delete; 3: modify.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
FILEOPERATIONS	Optional	string	File operation. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (close), 2 (create), 3 (create_dir), 4 (delete), 5 (delete_dir), 6 (getattr), 7 (link), 8 (lookup), 9 (open), 10 (read), 11 (write), 12 (rename), 13 (rename_dir), 14 (setattr), or 15 (symlink). Other values are invalid. If PARENTTYPE is set to 16402 (CIFS share), 7 (link), 8 (lookup), and 15 (symlink) are not supported. **Length:**128

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Result

N/A

Example

- Modify file name extension filtering rules.

```
Request: PUT /deviceManager/rest/2102350BVB10FA000073/SHARE_FILE_EXTENSION_FILTER/1
{
   "vstoreId": "1",
   "PARENTTYPE": "16401",
   "FILEEXTENSIONNAME": "4",
   "RULETYPE":"0",
   "FILEOPERATIONS": "1"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.3.2 Interface for Modifying a UNIX User

Function

This interface is used to modify a UNIX user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of the UNIX user. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64
description	Optional	string	Description. **The value is described as follows:** The value contains 0 to 255 characters. **Length:**0~255
primary_group_id	Optional	uint32	ID of the primary group to which a user belongs. **The value is described as follows:** The value ranges from 0 to 4,294,967,295. **Note:**Either primary_group_id or primary_group_name must be specified. If both of them are specified, only primary_group_id takes effect.

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Parameter	Mandatory/Optional/Conditional	Type	Description
primary_group_name	Optional	string	Name of the primary group to which a user belongs. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64 **Note:**Either primary_group_id or primary_group_name must be specified. If both of them are specified, only primary_group_id takes effect.
id	Optional	uint32	ID of the UNIX user. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Modifying a UNIX user.

```
Request: PUT /deviceManager/rest/210235843910E6000009/UNIX_USER
{
   "name": "mluser1",
```

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```
    "description": ""
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.3 Interface for Modifying a User Mapping

Function

This interface is used to modify a user mapping.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
MAPPINGTYPE	Optional	enum	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows
FROMIDENTITY	Optional	string	Source user. **The value is described as follows:** The value cannot contain ""/][><+:;,?|=@" or two consecutive asterisks (*). **Length:**1~256

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Parameter	Mandatory/Optional/Conditional	Type	Description
TOIDENTITY	Optional	string	Target user. **The value is described as follows:** The value cannot contain ""/][><+:;,?*|=@". **Length:**1~256
RULEPRIORITY	Optional	uint32	Priority. **The value is described as follows:** 1 to 32.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Modifying a user mapping.

```
Request: PUT /deviceManager/rest/210235843910E6000009/identitymapping/0
{
   "RULEPRIORITY": 3
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.3.4 Interface for Modifying a Windows User

Function

This interface is used to modify a Windows user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
RID	Optional	string	Windows user RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295. **Note:**The parameter must contain one of the NAME and RID.
NAME	Optional	string	Windows user name. **The value is described as follows:** The name contains a maximum of 20 letters, digits, hyphens (-), periods (.), and underscores (_), and cannot contain spaces, control characters, or any of the following special characters: "/\ []:|<>+=;?*@, and the last character cannot be a period (.). **Length:**1~20 **Note:**The parameter must contain one of the NAME and RID.
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
PASSWORD	Optional	string	Password. **The value is described as follows:** The password: 1:The value contains 6 to 32 characters. 2. "Normal": Contains at least any two types of special characters, uppercase letters, lowercase letters, and digits. 3. "High": Contains special characters, and at least any two types of uppercase letters, lowercase letters, and digits. 4. Cannot be the same as the user name or mirror writing of the user name. **Length:**6-32
STATUSENABLE	Optional	bool	User status. **The value is described as follows:** true: enabled false: locked
NEWNAME	Optional	string	Name. **The value is described as follows:** The name contains a maximum of 20 letters, digits, hyphens (-), periods (.), and underscores (_), and cannot contain spaces, control characters, or any of the following special characters: "/\ []:|<>+=;?*@,. The minimum length of the name is controlled by security policies. **Length:**1~20

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
PRIVILEGES	Optional	string	Windows user privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Length:**1~256 **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Result

N/A

Example

- Modifying a Windows user by NAME.

```
Request: PUT /deviceManager/rest/210235843910E6000009/WINDOWS_USER
{
    “NAME”: "test",
    "DESCRIPTION": "",
    "PRIVILEGES":"1"
}

Response: {
    "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying a Windows user by RID.

```
Request: PUT /deviceManager/rest/210235843910E6000009/WINDOWS_USER
{
    “RID”: "1000",
    "DESCRIPTION": "",
    "PRIVILEGES":"0"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.5 Interface for Modifying an IP Address Control Rule for a CIFS Share

Function

Modify an IP address control rule for a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE/{ID}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Rule ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**128

Parameter	Mandatory/Optional/Conditional	Type	Description
rule	Mandatory	string	Rule. **Note:**The value is a string of 1 to 95 characters, which can contain only hexadecimal digits and special characters .:/-. Only one slash (/) or hyphen (-) can be contained in the value. For example, the fixed IP address is 100.200.32.5 or 1050:0:0:0:5:600:300c:326b, the network segment is 100.202.60.0/24 or 21DA:D3:0:2F3B:2AA:FF:FE28:9C5/64, and the IP address range is 192.168.1.1-192.168.1.100/24. In this case, ensure that the two IP addresses are in the same network segment. Otherwise, the setting fails. The IP address segment must contain a mask.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Modify an IP address control rule for a CIFS share.

```
Request: PUT /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE/21474836483
{
    "vstoreId": "0",
    "ID": "21474836483",
    "rule": "192.168.2.2"
}
```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.6 Interface for Modifying CIFS Share Information

Function

This interface is used to modify a CIFS share.

HighRisk

You are about to enable the SMB3 encryption service. This operation will cause the performance of the SMB3 service provided by the device to deteriorate, and you need to remount the share to make this function take effect. Suggestion: Ensure that you need to enable the SMB3 encryption service.
You are about to enable non-encryption client access. After this operation, clients of earlier versions (for example, Windows 7) can access shares with SMB3 encryption enabled in plaintext mode. Suggestion: Ensure that you want to perform this operation. This operation affects only shares with SMB3 encryption enabled.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
ABEENABLE	Optional	bool	After this function is enabled, users can only access folders for which the users have access permission. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEOPLOCK	Optional	bool	Indicates whether oplock is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Optional	bool	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Optional	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
OFFLINEFILEMODE	Optional	enum	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs **Note:**This field is not supported temporarily.
ENABLEIPCONTROL	Optional	bool	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
AUDITITEMS	Optional	array	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr

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Parameter	Mandatory/Optional/Conditional	Type	Description
APPLYDEFAULTACL	Optional	bool	Whether to enable the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Optional	bool	Whether to enable the file name extension filtering feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLESHOWPREVIOUSVERSIONS	Optional	bool	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Optional	bool	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
leaseEnable	Optional	bool	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Optional	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: on false: off
unencryptedAccess	Optional	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: on false: off

Result

N/A

Example

- Modifying a CIFS share.

```
Request: PUT /deviceManager/rest/210235843910E6000009/CIFSSHARE/1{
    "DESCRIPTION": "",
    "AUDITITEMS": [
        0
    ],
    "ENABLESHOWPREVIOUSVERSIONS": "true",
    "ENABLESHOWSNAPSHOT": "true",
    "leaseEnable": "true"
}

Response: {
    "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.7 Interface for Modifying CIFS Share User (Group) Information

Function

This interface is used to modify a CIFS share user (user group).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Share permission ID.
PERMISSION	Mandatory	enum	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read and write (cannot be deleted or renamed)
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Modifying a CIFS share user (user group).

```
Request: PUT /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT/21474836483
{
```

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```
    "PERMISSION": 5
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.8 Interface for Modifying NFS Share Client Information

Function

This interface is used to modify an NFS share client.

HighRisk

You are about to change the anonymous user ID of the NFS share permission. This operation may interrupt services.

Suggestion: Confirm that you want to perform this operation based on the service type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ACCESSVAL	Optional	uint32	Permission. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5	Optional	uint32	Access permission for the NFS share in krb5 security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission

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Parameter	Mandatory/Optional/Conditional	Type	Description
ACCESSKRB5I	Optional	uint32	Access permission for the NFS share in krb5i security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5P	Optional	uint32	Access permission for the NFS share in krb5p security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
SYNC	Optional	uint32	Write mode. **The value is described as follows:** 0: synchronization 1: asynchronization **Note:**This parameter is not supported currently.
ALLSQUASH	Mandatory	uint32	Permission constraint. **The value is described as follows:** 0: all_squash 1: no_all_squash
ROOTSQUASH	Mandatory	uint32	root permission constraint. **The value is described as follows:** 0: root_squash 1: no_root_squash
SECURE	Optional	uint32	Source port verification. **The value is described as follows:** 0: secure 1: insecure

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Parameter	Mandatory/Optional/Conditional	Type	Description
ANONYMOUSID	Optional	uint32	Anonymous user ID. **Length:**0~4294967294 **Note:**This field is not supported temporarily.
ID	Mandatory	string	NFS share client ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Modifying an NFS share client.

```
Request: PUT /deviceManager/rest/210235843910E6000009/NFS_SHARE_AUTH_CLIENT
{
    "ACCESSVAL": 1,
    "ALLSQUASH": 1,
    "ROOTSQUASH": 0,
    "SYNC": 0,
    "ID": "1"
}

Response:
 {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.9 Interface for Modifying NFS Share Information

Function

This interface is used to modify an NFS share.

HighRisk

You are about to change the character code of an NFS share. This operation may cause garbled display or service interruption after switching the language.

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Suggestion: Confirm that you want to perform this operation based on the service type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255
LOCKPOLICY	Optional	enum	NFS lock policy. **The value is described as follows:** 0: Mandatory locking 1: Advisory locking **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHARACTERENCODING	Optional	enum	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 41: AR 42: CS 43: DA 44: FI 45: HE 46: HR 47: HU 48: NO 49: NL 50: PL 51: RO 52: RU 53: SK 54: SL 55: SV 56: TR 60: EN-US **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUDITITEMS	Optional	array	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
ENABLESHOWSNAPSHOT	Optional	bool	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled
fileHandleByteAlignmentSwitch	Optional	bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Result

N/A

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Example

- Modifying an NFS share.

```
Request: PUT /deviceManager/rest/210235843910E6000009/NFSSHARE/1
{
    "DESCRIPTION": "adsf"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.10 Interface for Modifying Security Policies of Windows Users

Function

This interface is used to modify security policies of Windows users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_SECURITY_POLICY

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
USERMINLENGTH	Optional	uint32	Minimum length of a user name. **Length:**1-20
PASSWORDMINLENGTH	Optional	uint32	Minimum length of a password. **Length:**6-32
PASSWORDMAXLENGTH	Optional	uint32	Maximum length of a password. **Length:**6-32

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Parameter	Mandatory/Optional/Conditional	Type	Description
PWDCOMPLEX	Optional	uint32	Password strength. **The value is described as follows:** 0: normal, containing any two of special characters, uppercase letters, lowercase letters, and digits. 1: high, containing special characters and any two of uppercase letters, lowercase letters, and digits. **Length:**0-1
REDUPLICATECHAR-COUNT	Optional	uint32	Maximum number of consecutive same characters. **Length:**0-9 **Note:**Maximum number of consecutive same characters in a password (0 indicates no restriction).
PWDINCORRECTTIMES	Optional	uint32	Maximum number of incorrect password attempts. **Length:**0-9 **Note:**0 indicates no restriction.
PWDVALIDPERIOD	Optional	uint32	Password validity period of a man-machine user. **Length:**0-999 **Note:**Validity periods are required for passwords and 0 indicates that passwords are permanently valid.

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Parameter	Mandatory/Optional/Conditional	Type	Description
INACTIVEUSERLOCK-TIME	Optional	uint32	Idle lock interval. **The value is described as follows:** 0: disabled **Length:**0-999
USERMODIFYPWDVA-LIDPERIOD	Optional	uint32	Password change interval. **The value is described as follows:** 0: disabled **Length:**0-9999
vstoreId	Optional	string	vStore ID.
SIDPREFIX	Optional	string	SID prefix of the windows user. **The value is described as follows:** The value can contain uppercase letters, lowercase letters, digits, and hyphens (-). **Length:**5-256

Result

N/A

Example

- Modifying the minimum length of a user name.

```
Request: PUT /deviceManager/rest/210235843710E7000007/WINDOWS_USER_SECURITY_POLICY
{
    "vstoreId": "1",
    "USERMINLENGTH": "5"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.3.11 Interface for Modifying the CIFS Homedir Share Mapping Rule

Function

This interface is used to modify a mapping rule of the CIFS homedir share.

HighRisk

You are about to set rules for the Homedir to support the path mapping of multiple file systems. Creating rules with high priority and improving the rule priority may cause interruption of services accessed by users that have been configured with mapping rules of low priority. Deleting mapping rules and lowering priority of existing rules may cause interruption of services accessed by users that have been configured with these mapping rules.

Suggestion: Before performing this operation, confirm that users that have been configured with mapping rules of low priority are not accessing the share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
priority	Optional	uint32	Priority. **Length:**1~1024
autoCreate	Optional	bool	Whether to automatically create the directory. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Modifying a mapping rule of the CIFS homedir share.

```
Request: PUT /deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule/0
{
    "ID": "0",
    "priority": 32,
    "autoCreate": true
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.12 Interface for Modifying UNIX User Group Information

Function

Modify the basic information about the UNIX user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of the UNIX user group. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($). **Length:**1~64
id	Optional	string	ID of the UNIX user group. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.
description	Optional	string	Description. **The value is described as follows:** The value contains 0 to 255 characters. **Length:**0~255
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Modifying basic information about a local user group.

```
Request: PUT /deviceManager/rest/210235843910E6000009/UNIX_GROUP
{
```

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```
    "name": "mlgroup1",
    "description": "111"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.13 Interface for Modifying User Mapping Configuration of a vStore

Function

This interface is used to modify user mapping configuration of a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymappingconfig

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
IDMUUSERMAPPINGDN	Optional	string	IDMU search DN. **Length:**0-255
IDMUUSERMAPPINGDNTIMEOUT	Optional	uint32	IDMU search timeout duration. **The value is described as follows:** The range is from 5 to 120.
IDMUWINOBJECTCLASS	Optional	string	objectclass used by the Windows user searched by the IDMU. **The value is described as follows:** The value is a string containing 1 to 255 characters. **Length:**1-255

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Parameter	Mandatory/Optional/Conditional	Type	Description
IDMUUNIXOBJECTCLASS	Optional	string	objectclass used by the UNIX user searched by the IDMU. **The value is described as follows:** The value is a string containing 1 to 255 characters. **Length:**1-255
USERMAPPINGPROVIDER	Optional	enum	Mapping type. **The value is described as follows:** 0: user mapping not supported 1: mapping rules set in local 2: mapping rules set in IDMU 3: mapping rules set in IDMU and local, IDMU preferentially 4: mapping rules set in local and IDMU, local preferentially
DEFAULTWINDOWSUSER	Optional	string	Default Windows user. **Length:**1-256
DEFAULTUNIXUSER	Optional	string	Default UNIX user. **Length:**1-256
SAMEUSERSWITCH	Optional	enum	Switch of a mapping between users with the same name. If the user names are the same, the mapping exists by default. **The value is described as follows:** 0: off 1: on

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Modifying user mapping configuration of a vStore.

```
Request: PUT /deviceManager/rest/210235843910E6000009/identitymappingconfig
{
    "IDMUUSERMAPPINGDN": "name=aaa",
    "USERMAPPINGPROVIDER": "4"
}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.14 Interface for Modifying Windows User Group Information

Function

This interface is used to modify the basic information about the Windows user group and applies only to storage systems that support file services.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_GROUP

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
RID	Optional	string	Windows user group RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295. **Note:**The parameter must contain one of the NAME and RID.
DESCRIPTION	Optional	string	Description. **Length:**0~255
NAME	Optional	string	Windows user group name. **The value is described as follows:** The value can neither include "/\[]:|<>+=;?*@, and control characters nor end with a period (.). **Length:**1~256 **Note:**The parameter must contain one of the NAME and RID.
NEWNAME	Optional	string	New name. **The value is described as follows:** The value can neither include "/\[]:|<>+=;?*@, and control characters nor end with a period (.). **Length:**1~256
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PRIVILEGES	Optional	string	Windows user group privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Length:**1~256 **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory	string	Windows user group name.
RID	Mandatory	string	Windows user group RID. **The value is described as follows:** The value ranges from 1000 to 4,294,967,295.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
GROUPTYPE	Mandatory	enum	User group type. **The value is described as follows:** 0: common user group 1: built-in user group
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
PRIVILEGES	Mandatory	string	Windows user group privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.

Example

- Modifying a Windows user group by user group name.

```
Request: PUT /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP
{
    "NAME": "test",
    "DESCRIPTION": "111",
    "PRIVILEGES":"1"
}

Response: {
```

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```
    "data": {
        "NAME": "test",
        "RID": "1000",
        "DESCRIPTION": "111",
        "GROUPTYPE": "0",
        "vstoreId": "0",
        "PRIVILEGES": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Modifying a Windows user group by user group RID.

```
Request: PUT /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP
{
    "RID": "1000",
    "DESCRIPTION": "111",
   "PRIVILEGES":"0"
}

Response: {
    "data": {
        "NAME": "test",
        "RID": "1000",
        "DESCRIPTION": "111",
        "GROUPTYPE": "0",
        "vstoreId": "0",
        "PRIVILEGES": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.15 (Not Recommended)Interface for Modifying CIFS Share Information

Function

Modify CIFS share information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
ABEENABLE	Optional	bool	After this function is enabled, users can only access folders on which the users have access permissions. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEOPLOCK	Optional	bool	Indicates whether the Oplock function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Optional	bool	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Optional	bool	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/Optional/Conditional	Type	Description
OFFLINEFILEMODE	Optional	enum	Offline cache mode. **The value is described as follows:** 0: disabled 1: manual 2: document 3: program **Note:**This field is not supported temporarily.
ENABLEIPCONTROL	Optional	bool	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
AUDITITEMS	Optional	array	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr

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Parameter	Mandatory/Optional/Conditional	Type	Description
APPLYDEFAULTACL	Optional	bool	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Optional	bool	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLESHOWPREVIOUSVERSIONS	Optional	bool	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Optional	bool	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
leaseEnable	Optional	bool	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Optional	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled
unencryptedAccess	Optional	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: enabled false: disabled

Result

N/A

Example

- Modify CIFS share information.

```
Request: PUT /deviceManager/rest/210235843910E6000009/CIFSHARE/1{
    "DESCRIPTION": "",
    "AUDITITEMS": [
        0
    ],
    "ENABLESHOWPREVIOUSVERSIONS": "true",
    "ENABLESHOWSNAPSHOT": "true",
    "leaseEnable": "true"
}

Response: {
    "data": {
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.3.16 (Not Recommended)Interface for Modifying NFS Share Information

Function

Modify basic information about the NFS share.

HighRisk

You are about to change the character code of an NFS share. This operation may cause garbled display or service interruption after switching the language.

Suggestion: Confirm that you want to perform this operation based on the service type.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Optional	string	Description. **Length:**0~255
LOCKPOLICY	Optional	enum	NFS lock policy. **The value is described as follows:** 0: Mandatory locking 1: Advisory locking **Note:**This parameter is not supported currently.

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Parameter	Mandatory/Optional/Conditional	Type	Description
CHARACTERENCODING	Optional	enum	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 41: AR 42: CS 43: DA 44: FI 45: HE 46: HR 47: HU 48: NO 49: NL 50: PL 51: RO 52: RU 53: SK 54: SL 55: SV 56: TR 60: EN-US **Note:**This parameter is not supported currently.

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Parameter	Mandatory/Optional/Conditional	Type	Description
AUDITITEMS	Optional	array	Indicates the list of events that can be audited. **The value is described as follows:** 0: no operation 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This parameter is not supported currently.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.
ENABLESHOWSNAPSHOT	Optional	bool	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This parameter is not supported currently.
fileHandleByteAlignmentSwitch	Optional	bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

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Result

N/A

Example

- Modify basic information about the NFS share.

```
Request: PUT /deviceManager/rest/210235843910E6000009/NFSHARE/1
{
   "DESCRIPTION": "adsf"
}

Response:
 {
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4 Query

2.11.3.4.1 Interface for Batch Querying CIFS Share Information

Function

This interface is used to batch query basic information about CIFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by NAME, DESCRIPTION, subType, DTREEID and FSID is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
subType	Mandatory	string(uint32)	Share object subtype. **The value is described as follows:** 0: normal 1: homedir 2: all
DESCRIPTION	Mandatory	string	Description.
dirUmask	Mandatory	string	umask value of the shared directory.
SHAREPATH	Mandatory	string	Share path.

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Parameter	Mandatory/ Conditional	Type	Description
ABEENABLE	Mandatory	string(bool)	After this function is enabled, users can only access folders on which the users have access permissions. **Note:**This field is not supported temporarily.
FSID	Mandatory	string	File system ID.
ENABLEOPLOCK	Mandatory	string(bool)	Indicates whether the Oplock function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Mandatory	string(bool)	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Mandatory	string(bool)	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEIPCONTROL	Mandatory	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
OFFLINEFILEMODE	Mandatory	string(enum)	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: document 3: program **Note:**This field is not supported temporarily.
SMB2CAEnable	Mandatory	bool	Whether to allow the SMB continuous availability (CA) share property.
readdirTimeout	Mandatory	uint32	Timeout period of the readdir command. **The value is described as follows:** 1..120

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Parameter	Mandatory/ Conditional	Type	Description
AUDITITEMS	Mandatory	array	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr
APPLYDEFAULTACL	Mandatory	string(bool)	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Mandatory	string(bool)	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWPREVIOUSVERSIONS	Mandatory	string(bool)	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled
enableBrowse	Mandatory	string(bool)	Whether to allow Windows clients to browse the share. **The value is described as follows:** true: enabled false: disabled
DTREEID	Mandatory	string	Dtree ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
leaseEnable	Mandatory	string(bool)	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Mandatory	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled
unencryptedAccess	Mandatory	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: enabled false: disabled
fileSystemName	Mandatory	string	File system name.
fileUmask	Mandatory	string	umask value of the shared file.

Example

- Batch querying basic information about CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSSHARE?filter=NAME: t&range=[
    0-100
]

Response: {
    "data": [
        {
            "ABEENABLE": "false",
            "APPLYDEFAULTACL": "true",
            "AUDITITEMS": "[0]",
            "DESCRIPTION": "",
            "dirUmask": "000",
            "DTREEID": "1@0",
```

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```
            "enableBrowse": "true",
            "ENABLECA": "true",
            "ENABLEFILEEXTENSIONFILTER": "true",
            "ENABLEIPCONTROL": "false",
            "ENABLENOTIFY": "true",
            "ENABLEOPLOCK": "true",
            "ENABLESHOWPREVIOUSVERSIONS": "true",
            "ENABLESHOWSNAPSHOT": "true",
            "fileSystemName": "fs001",
            "fileUmask": "000",
            "FSID": "5",
            "ID": "1",
            "leaseEnable": "true",
            "NAME": "llt",
            "OFFLINEFILEMODE": "0",
            "readdirTimeout": "55",
            "SHAREPATH": "/FileSystem0050001/",
            "SMB2CAEnable": "true",
            "smb3EncryptionEnable": "true",
            "subType": "0",
            "unencryptedAccess": "true",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.2 Interface for Batch Querying CIFS Share User (Group) Information

Function

This interface is used to batch query information about CIFS share users (user groups).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by PARANTID and NAME.

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**If "filter" is delivered, "range" is mandatory. A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name of a user or user group.
PARENTID	Mandatory	string	CIFS share ID.
DOMAINTYPE	Mandatory	string(uint32)	Domain type. **The value is described as follows:** 0: AD domain user or user group. 1: LDAP domain user or user group. 2: Local user or user group. 3: NIS domain user or user group.

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Parameter	Mandatory/ Conditional	Type	Description
PERMISSION	Mandatory	string(enum)	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read and write
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
shareName	Conditional	string	Share name.

Example

- Batch querying information about CIFS share users (user groups).

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT?
filter=PARENTID: : 1&range=[
   0-100
]

Response: {
   "data": [
      {
         "ID": "8589934594",
         "NAME": "tangfuwang",
         "PARENTID": "2",
         "DOMAINTYPE": "2",
         "PERMISSION": "1",
         "shareName": "share001",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.3 Interface for Batch Querying File Name Extension Filtering Rules

Function

This interface is used to query file name extension filtering rules in batches.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SHARE_FILE_EXTENSION_FILTER

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share
PARENTID	Optional	string	Share ID. **The value is described as follows:** 0-2^64-1.
filter	Optional	string	Query criteria. **The value is described as follows:** The FILEEXTENSIONNAME field is supported for fuzzy match. The RULETYPE field is supported for exact match.
range	Optional	string	Query range.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
PARENTID	Mandatory	string	Share ID. **The value is described as follows:** 0-2^64-1.

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Parameter	Mandatory/ Conditional	Type	Description
FILEEXTENSIONNAME	Mandatory	string	File name extension. **The value is described as follows:** The parameter value contains 1 to 127 visible ASCII characters, and contains only digits, letters, spaces, and special characters including (!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~). Wildcards (?) and (*) are supported. Wildcard (*) can only be the last character of each file name extension. Multiple file name extensions are separated by commas (,) and must be unique. On the CLI, the following characters must be entered in escape mode: "|" indicates "|", "\\" indicates "\", "\q" indicates "?", and "\s" indicates a space.
RULETYPE	Mandatory	enum	Rule type. **The value is described as follows:** 0: only_deny 1: only_allow

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Parameter	Mandatory/ Conditional	Type	Description
FILEOPERATIONS	Mandatory	string	File operation. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (close), 2 (create), 3 (create_dir), 4 (delete), 5 (delete_dir), 6 (getattr), 7 (link), 8 (lookup), 9 (open), 10 (read), 11 (write), 12 (rename), 13 (rename_dir), 14 (setattr), or 15 (symlink). Other values are invalid. If PARENTTYPE is set to 16402 (CIFS share), 7 (link), 8 (lookup), and 15 (symlink) are not supported.

Example

- Query a file name extension filtering rule.

```
Request: GET /deviceManager/rest/2102350BVB10FA000073/SHARE_FILE_EXTENSION_FILTER?
PARENTTYPE=16401&vstoreId=1

Response: {
   "data": [
      {
         "ID": "1",
         "PARENTTYPE": "16401",
         "FILEEXTENSIONNAME": "txt",
         "RULETYPE": "1",
         "PARENTID": "0",
         "FILEOPERATIONS": "1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.3.4.4 Interface for Batch Querying Members of a Windows User Group

Function

This interface is used to batch query members of a Windows user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_GROUP_MAP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 pieces of data can be returned in the query result.
GROUPNAME	Mandatory	string	Name of the Windows user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Length:**1-256

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Parameter	Mandatory/Optional/Conditional	Type	Description
ACCOUNTTYPE	Mandatory	enum	Account type. **The value is described as follows:** 0: WINDOWS_USER 2: AD_USER 3: AD_GROUP **Note:**The "ACCOUNTTYPE" field indicates the Windows local user, AD domain user, or AD domain user group.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Length:**1-10 **Note:**This field must be delivered in multi-vStore scenarios.
filter	Optional	string	Query criteria. **The value is described as follows:** The parameter NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
ACCOUNTTYPE		enum	Account type. **The value is described as follows:** 0: WINDOWS_USER 2: AD_USER 3: AD_GROUP **Note:**The "ACCOUNTTYPE" field indicates the Windows local user, AD domain user, or AD domain user group.

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Parameter	Mandatory/ Conditional	Type	Description
NAME		string	Name of the Windows user, AD domain user, or AD domain user group. **The value is described as follows:** The value contains 1 to 256 characters, including case-sensitive letters, digits, hyphens (-), periods (.), and underscores (_). The name cannot start with a hyphen (-). **Unit:**1–256
RID		int	User RID. **The value is described as follows:** 1000 to 4294967295.
vstoreId			vStore ID.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Batch querying members of a Windows user group.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_USER_GROUP_MAP?
range=[0-100]{
    "ACCOUNTTYPE": "0",
    "GROUPNAME": "groupWindows"
}
}Response: {
"data": {

},
"error": {
    "code": 0,
    "description": "0"
}
}
```

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2.11.3.4.5 Interface for Batch Querying NFS Share Client Information

Function

This interface is used to batch query information about NFS share clients.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by PARENTID and NAME.
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:** If filter is delivered, range is mandatory. A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
sort	Optional	string	Sorting condition. **The value is described as follows:** Sorting by NAME or PARENTID.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	NFS share client ID.
NAME	Mandatory	string	Client IP address, host name, or network group name.
PARENTID	Mandatory	string	ID of the parent object.
ACCESSVAL	Mandatory	string(uint32)	Permission. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5	Mandatory	uint32	Access permission for the NFS share in krb5 security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5I	Mandatory	uint32	Access permission for the NFS share in krb5i security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission

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Parameter	Mandatory/ Conditional	Type	Description
ACCESSKRB5P	Mandatory	uint32	Access permission for the NFS share in krb5p security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
SYNC	Mandatory	string(uint32)	Write mode. **The value is described as follows:** 0: synchronous 1: asynchronous
ALLSQUASH	Mandatory	string(uint32)	Permission constraint. **The value is described as follows:** 0: all_squash 1: no_all_squash
ROOTSQUASH	Mandatory	string(uint32)	root permission constraint. **The value is described as follows:** 0: root_squash 1: no_root_squash
SECURE	Mandatory	string(uint32)	Source port verification. **The value is described as follows:** 0: secure 1: insecure
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ANONYMOUSID	Mandatory	string(uint32)	Anonymous user ID. **Note:**This field is not supported temporarily.
chownMode	Mandatory	uint32	Ownership (owner or group) change mode. **The value is described as follows:** 0: restricted 1: unrestricted
v4AclPreserve	Mandatory	uint32	NFSv4 ACL protection. **The value is described as follows:** 0: enable 1: disable
ntfsUnixSecurityOps	Mandatory	uint32	NTFS UNIX security options. **The value is described as follows:** 0: fail 1: ignore
charsetEncoding	Mandatory	enum	NFS share encoding mode. **The value is described as follows:** 0: UTF-8 10: ZH 11: GBK 12: EUC-TW 13: BIG5 20: EUC-JP 21: JIS 22: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 65535: default

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Parameter	Mandatory/ Conditional	Type	Description
SHARENAME	Mandatory	string	NFS share name.
securityType	Mandatory	int	Security type supported by NFS mounting. The security type can be unix, none, or none_unix. **The value is described as follows:** 0: unix 1: none 2: none_unix

Example

- Batch querying information about NFS share clients.

```
Request: GET /deviceManager/rest/ST000000000000000142/NFS_SHARE_AUTH_CLIENT?
vstoreId=1&range=[0-1]

Response: {
   "data": [
      {
         "NAME": "*",
         "ID": "1",
         "PARENTID": "1",
         "ACCESSVAL": "1",
         "SYNC": "0",
         "ALLSQUASH": "1",
         "ROOTSQUASH": "0",
         "SECURE": "1",
         "CHARSET": "65535",
         "ANONYMOUSID": "65534",
         "vstoreId": "1",
         "SHARENAME": "/pz_fs1",
         "securityType": "0",
         "ntfsUnixSecurityOps": "0",
         "v4AclPreserve": "0",
         "chownMode": "0",
         "ACCESSKRB5": "5",
         "ACCESSKRB5I": "5",
         "ACCESSKRB5P": "5",
         "vstoreName": "vstore1"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Query NFS share client information.

```
Request: GET /deviceManager/rest/ST000000000000000142/NFS_SHARE_AUTH_CLIENT?
vstoreId=0&ID=4

Response: {
   "data": {
```

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```
        "vstoreId": "0",
        "NAME": "*",
        "ID": "4",
        "PARENTID": "4",
        "ACCESSVAL": "1",
        "SYNC": "0",
        "ALLSQUASH": "1",
        "ROOTSQUASH": "0",
        "SECURE": "1",
        "CHARSET": "65535",
        "ANONYMOUSID": "65534",
        "securityType": "0",
        "SHARENAME": "/fs1",
        "ntfsUnixSecurityOps": "0",
        "v4AclPreserve": "0",
        "chownMode": "0",
        "ACCESSKRB5": "5",
        "ACCESSKRB5I": "5",
        "ACCESSKRB5P": "5",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.6 Interface for Batch Querying NFS Share Information

Function

This interface is used to batch query basic information about NFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Query by SHAREPATH, DESCRIPTION, and FSID is supported. Exact matching: FSID Fuzzy matching: SHAREPATH, DESCRIPTION

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:** If filter is delivered, range is mandatory. A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
sort	Optional	string	Sorting condition. **The value is described as follows:** Sorting by SHAREPATH is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
NAME	Mandatory	string	Share alias. **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
LOCKPOLICY	Mandatory	string(enum)	NFS lock policy. **The value is described as follows:** 0: Advisory locking 1: Mandatory locking **Note:**This field is not supported temporarily.
CHARACTERENCODING	Mandatory	string(enum)	Character Encoding. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO **Note:**This field is not supported temporarily.
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16401: NFSHARE

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Parameter	Mandatory/ Conditional	Type	Description
AUDITITEMS	Mandatory	string(array)	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
DTREEID	Mandatory	string	
fileHandleByteAlign-mentSwitch		bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Example

- Batch querying basic information about NFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFSSHARE?filter=FSID&range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "FSID": "20",
         "ID": "1",
         "DTREEID": "20@0",
         "SHAREPATH": "/VMwareApp_001_ALL_200/",
         "NAME": "test",
         "LOCKPOLICY": "0",
         "CHARACTERENCODING": "0",
         "AUDITITEMS": [
            0
         ],
         "ENABLESHOWSNAPSHOT": "true",
         "TYPE": 16401,
         "vstoreId": "0",
         "FSNAME": "VMwareApp_001_ALL_200",
         "fileHandleByteAlignmentSwitch": false,
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "FSID": "21",
         "ID": "2",
         "DTREEID": "21@0",
         "SHAREPATH": "/VMwareApp_002_ALL_210/",
         "NAME": "test1",
         "LOCKPOLICY": "0",
         "CHARACTERENCODING": "0",
         "AUDITITEMS": [
            0
         ],
         "ENABLESHOWSNAPSHOT": "true",
         "TYPE": 16401,
         "vstoreId": "0",
         "FSNAME": "VMwareApp_002_ALL_210",
         "fileHandleByteAlignmentSwitch": false,
         "vstoreName": "System_vStore"
      },
      {
         "DESCRIPTION": "",
         "FSID": "22",
         "ID": "3",
         "DTREEID": "22@0",
```

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```
            "SHAREPATH": "/VMwareApp_001_ALL_220/",
            "NAME": "test2",
            "LOCKPOLICY": "0",
            "CHARACTERENCODING": "0",
            "AUDITITEMS": [
                0
            ],
            "ENABLESHOWSNAPSHOT": "true",
            "TYPE": 16401,
            "vstoreId": "0",
            "FSNAME": "VMwareApp_001_ALL_220",
            "fileHandleByteAlignmentSwitch": false,
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.7 Interface for Batch Querying UNIX User Group Information

Function

This interface is used to query the basic information about UNIX user groups in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by ID or name. **Note:**ID filtering is only supported in the exact query.
sortby	Optional	string	Sorting condition. **The value is described as follows:** Sorting by ID or name.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	User group ID.
name	Mandatory	string	Name.
description	Mandatory	string	Description.
group_type	Mandatory	string(enum)	User group type. **The value is described as follows:** 1: default 2: created by an administrator
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Batch querying basic information about UNIX user groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_GROUP?range=[0-100]

Response: {
   "data": [
      {
         "description": "",
         "group_type": "1",
         "id": "99997",
         "name": "Backup Operators",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      },
      {
         "description": "the antivirus group",
         "group_type": "1",
         "id": "99998",
         "name": "AntivirusGroup",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.8 Interface for Batch Querying UNIX User Information

Function

This interface is used to batch query basic information about UNIX users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: id, name, and primary_group_name. **Note:**ID filtering is only supported in the exact query.
sortby	Optional	string	Sorting condition. **The value is described as follows:** The following fields are supported: id, name, and primary_group_name.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	User ID.
name	Mandatory	string	Name.
description	Mandatory	string	Description.
primary_group_name	Mandatory	string	Name of the primary group to which a user belongs.
user_type	Mandatory	string(enum)	User type. **The value is described as follows:** 1: default 2: created by an administrator
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Batch querying basic information about UNIX users.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_USER?range=[0-100]

Response:
{
   "data": [
      {
         "description": "",
         "id": "100000",
         "name": "tangfuwang",
          "primary_group_name": "default_group",
         "user_type": "2"
         "vstoreId": "0"
         "vstoreName": "System_vStore"
      },
      {
         "description": "",
         "id": "100001",
         "name": "TFW123456",
         "primary_group_name": "Backup Operators",
         "user_type": "2"
         "vstoreId": "0"
         "vstoreName": "System_vStore"
      }
```

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```
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.9 Interface for Batch Querying User Mappings

Function

This interface is used to batch query user mappings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters FROMIDENTITY and TOIDENTITY are supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.
sortby	Optional	string	Sorting condition. Sorting by the following is supported: FROMIDENTITY, TOIDENTITY, MAPPINGTYPE, and RULEPRIORITY.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
FROMIDENTITY	Mandatory	string	Source user.
MAPPINGTYPE	Mandatory	string(enum)	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows 2: Kerberos to UNIX
RULEPRIORITY	Mandatory	uint32	Priority.
TOIDENTITY	Mandatory	string	Target user.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

Example

- Batch querying user mappings.

  ```
  Request: GET /deviceManager/rest/210235843910E6000009/identitymapping
  ```

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```
Response:
{
   "data": [
      {
         "FROMIDENTITY": "user1",
         "ID": "9",
         "MAPPINGTYPE": "0",
         "RULEPRIORITY": "10",
         "TOIDENTITY": "user2",
         "vstoreId": "0",
         "vstoreName": "System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.10 Interface for Batch Querying Windows User Group Information

Function

This interface is used to batch query basic information about Windows user groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_GROUP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering based on NAME, RID, and GROUPTYPE is supported.
sortby	Optional	string	Sorting condition. **The value is described as follows:** Sorting by NAME or RID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:** If "filter" is delivered, "range" is mandatory. A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
RID	Mandatory	string	Windows user group RID. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.
NAME	Mandatory	string	Windows user group name.
DESCRIPTION	Mandatory	string	Description.
GROUPTYPE	Mandatory	string(enum)	User group type. **The value is described as follows:** 1: default 2: created by an administrator

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
PRIVILEGES	Mandatory	string	Windows user group privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.
SID	Mandatory	string	SID of a Windows user group.

Example

- Batch querying basic information about Windows user groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP?range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
```

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```
        "GROUPTYPE": "1",
        "RID": "99997",
        "NAME": "Backup Operators",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "PRIVILEGES": "0",
        "SID": "S-1-5-21-373184-2338000668-4285930607-99997"
      },
      {
        "DESCRIPTION": "the antivirus group",
        "GROUPTYPE": "1",
        "RID": "99998",
        "NAME": "AntivirusGroup",
        "vstoreId": "0",
        "vstoreName": "System_vStore",
        "PRIVILEGES": "0",
        "SID": "S-1-5-21-373184-2338000668-4285930607-99998"
      }
    ],
    "error": {
      "code": 0,
      "description": "0"
    }
}
```


2.11.3.4.11 Interface for Batch Querying Windows User Information

Function

This interface is used to batch query basic information about Windows users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following fields are supported: NAME, RID, and STATUSENABLE.

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Parameter	Mandatory/Optional/Conditional	Type	Description
sortby	Optional	string	Sorting condition. **The value is described as follows:** The following field is supported: NAME, RID, STATUSENABLE, and PASSWORDVALIDPERIOD.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
RID	Mandatory	string	Windows user RID. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.
NAME	Mandatory	string	Windows user name.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
STATUSENABLE	Mandatory	string(bool)	User status. **The value is described as follows:** true: enabled false: locked
PASSWORDVALIDPER-IOD	Mandatory	string(uint32)	Remaining password validity period. **The value is described as follows:** The value ranges from 0 to 999. FFFFFFFF(4294967295) indicates disabled.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
PRIVILEGES	Mandatory	string	Windows user privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.
SID	Mandatory	string	SID of a Windows user.

Example

- Batch querying basic information about Windows users.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_USER?range=[0-100]

Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "RID": "100000",
         "NAME": "test",
         "PASSWORDVALIDPERIOD": "175",
         "STATUSENABLE": "true",
         "vstoreId": "0",
         "vstoreName": "System_vStore",
         "PRIVILEGES": "0",
         "SID": "S-1-5-21-373184-2338000668-4285930607-100000"
      },
      {
         "DESCRIPTION": "",
         "RID": "100001",
         "NAME": "TFW123456",
```

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```
            "PASSWORDVALIDPERIOD": "179",
            "STATUSENABLE": "true",
            "vstoreId": "0",
            "vstoreName": "System_vStore",
            "PRIVILEGES": "0",
            "SID": "S-1-5-21-373184-2338000668-4285930607-100001"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.12 Interface for Querying a File Name Extension Filtering Rule

Function

Query a file name extension filtering rule.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SHARE_FILE_EXTENSION_FILTER/{id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
PARENTTYPE	Optional	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of the file name extension filtering rule. **The value is described as follows:** 0-2^64-1.
PARENTID	Mandatory	string	Share ID. **The value is described as follows:** 0-2^64-1.
FILEEXTENSIONNAME	Mandatory	string	File name extension. **The value is described as follows:** A file name extension contains 1 to 127 visible ASCII characters, including only digits, letters, spaces, and special characters (!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~). Wildcards (?) and (*) are supported. Wildcard (*) can only be the last character, for example, txt, TXT, T?X, or Tx*.

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Parameter	Mandatory/ Conditional	Type	Description
RULETYPE	Mandatory	uint32	Rule type. **The value is described as follows:** 0: reject only; 1: allow only
FILEOPERATIONS	Mandatory	string	File operation. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (close), 2 (create), 3 (create_dir), 4 (delete), 5 (delete_dir), 6 (getattr), 7 (link), 8 (lookup), 9 (open), 10 (read), 11 (write), 12 (rename), 13 (rename_dir), 14 (setattr), or 15 (symlink). Other values are invalid. If PARENTTYPE is set to 16402 (CIFS share), 7 (link), 8 (lookup), and 15 (symlink) are not supported.

Example

- Query a file name extension filtering rule.

```
Request: GET /deviceManager/rest/2102350BVB10FA000073/SHARE_FILE_EXTENSION_FILTER/1?
PARENTTYPE=16401&vstoreId=1

Response: {
   "data": [
      {
         "ID": "1",
         "PARENTID": "1",
         "FILEEXTENSIONNAME": "txt",
         "RULETYPE": 0,
         "FILEOPERATIONS": "1"
      }
   ],
   "error": {
      "code": 0,
```

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```
    "description": "0"
  }
}
```

2.11.3.4.13 Interface for Querying a Mapping Rule of the CIFS Homedir Share

Function

This interface is used to query basic information about a mapping rule of the CIFS homedir share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
parentID	Mandatory	string	Homedir share ID.
NAME	Mandatory	string	Mapping rule name of the CIFS homedir share.
fsId	Mandatory	string	File system ID.
fsPath	Mandatory	string	Share path.
priority	Mandatory	string(uint32)	Priority.

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Parameter	Mandatory/ Conditional	Type	Description
autoCreate	Mandatory	string（bool）	Whether to automatically create the directory. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreNAME	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying basic information about a mapping rule of the CIFS homedir share.

```
Request: GET/deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule/0
Response: {
   "data": {
          "ID": "0",
          "NAME": "adsfasdf",
          "autoCreate": "false",
          "fsId": "0",
          "fsPath": "/FileSystem001/",
          "parentID": "0",
          "priority": "20",
           "vstoreId": "0",
           "vstoreNAME":"System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.14 Interface for Querying a User Mapping

Function

This interface is used to query a user mapping.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping/${id}

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	User mapping ID.
FROMIDENTITY	Mandatory	string	Source user.
MAPPINGTYPE	Mandatory	string(enum)	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows 2: Kerberos to UNIX
RULEPRIORITY	Mandatory	string(uint32)	Priority.
TOIDENTITY	Mandatory	string	Target user.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

Example

- Querying a user mapping.

  ```
  Request: GET /deviceManager/rest/210235843910E6000009/identitymapping/9
  ```

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```
Response:
{
    "data": {
        "FROMIDENTITY": "user1",
        "ID": "9",
        "MAPPINGTYPE": "0",
        "RULEPRIORITY": "10",
        "TOIDENTITY": "user2",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.15 Interface for Querying an IP Address Control Rule for a CIFS Share

Function

Query an IP address control rule for a CIFS share.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE/${ID}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	Rule ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**128
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/ Conditional	Type	Description
cifsShareID	Mandatory	string	CIFS share ID.
rule	Mandatory	string	Rule. **Note:**The value is a string of 1 to 95 characters, which can contain only hexadecimal digits and special characters .:/-. Only one slash (/) or hyphen (-) can be contained in the value. For example, the fixed IP address is 100.200.32.5 or 1050:0:0:0:5:600:300c:326b, the network segment is 100.202.60.0/24 or 21DA:D3:0:2F3B:2AA:FF:FE28:9C5/64, and the IP address range is 192.168.1.1-192.168.1.100/24. In this case, ensure that the two IP addresses are in the same network segment. Otherwise, the setting fails. The IP address segment must contain a mask.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
ID	Mandatory	string	Rule ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

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Example

- Query an IP address control rule for a CIFS share.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE/4294967297

Response: {
   "data": {
      "ID": "1",
      "cifsShareID": "1",
      "vstoreId.": "1",
      "rule": "192.168.2.2"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.16 Interface for Querying CIFS Share Information

Function

This interface is used to query basic information about CIFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.

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Parameter	Mandatory/ Conditional	Type	Description
SHAREPATH	Mandatory	string	Share path.
subType	Mandatory	string(uint32)	Share object subtype. **The value is described as follows:** 0: normal 1: homedir 2: all
ABEENABLE	Mandatory	string(bool)	After this function is enabled, users can only access folders for which the users have access permission. **Note:**This field is not supported temporarily.
FSID	Mandatory	string	File system ID.
ENABLEOPLOCK	Mandatory	string(bool)	Indicates whether oplock is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Mandatory	string(bool)	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Mandatory	string(bool)	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEIPCONTROL	Mandatory	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
OFFLINEFILEMODE	Mandatory	string(enum)	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: documents 3: programs **Note:**This field is not supported temporarily.
AUDITITEMS	Mandatory	array	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr

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Parameter	Mandatory/ Conditional	Type	Description
APPLYDEFAULTACL	Mandatory	string(bool)	Whether to enable the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Mandatory	string(bool)	Whether to enable the file name extension filtering feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLESHOWPREVIOUSVERSIONS	Mandatory	string(bool)	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled
enableBrowse	Mandatory	string(bool)	Whether to allow Windows clients to browse the share. **The value is described as follows:** true: enabled false: disabled

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Parameter	Mandatory/ Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
DTREEID	Mandatory	string	Dtree ID.
leaseEnable	Mandatory	string(bool)	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Mandatory	string(bool)	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: on false: off
unencryptedAccess	Mandatory	string(bool)	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: on false: off
dirUmask	Mandatory	string	umask value of the shared directory.
fileSystemName	Mandatory	string	File system name.

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Parameter	Mandatory/ Conditional	Type	Description
readdirTimeout	Mandatory	uint32	Timeout period of the readdir command. **The value is described as follows:** 1..120
fileUmask	Mandatory	string	umask value of the shared file.
SMB2CAEnable	Mandatory	bool	Whether to allow the SMB continuous availability (CA) share property.

Example

- Querying basic information about CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSSHARE/1

Response: {
   "data": {
      "ABEENABLE": "false",
      "APPLYDEFAULTACL": "true",
      "AUDITITEMS": "[0]",
      "DESCRIPTION": "",
      "dirUmask": "000",
      "DTREEID": "1@0",
      "enableBrowse": "true",
      "ENABLECA": "true",
      "ENABLEFILEEXTENSIONFILTER": "true",
      "ENABLEIPCONTROL": "false",
      "ENABLENOTIFY": "true",
      "ENABLEOPLOCK": "true",
      "ENABLESHOWPREVIOUSVERSIONS": "true",
      "ENABLESHOWSNAPSHOT": "true",
      "fileSystemName": "fs001",
      "fileUmask": "000",
      "FSID": "5",
      "ID": "1",
      "leaseEnable": "true",
      "NAME": "llt",
      "OFFLINEFILEMODE": "0",
      "readdirTimeout": "55",
      "SHAREPATH": "/FileSystem0050001/",
      "SMB2CAEnable": "true",
      "smb3EncryptionEnable": "true",
      "subType": "0",
      "unencryptedAccess": "true",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.3.4.17 Interface for Querying CIFS Share User (Group) Information

Function

This interface is used to query information about a CIFS share user (user group).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Object ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID.
NAME	Mandatory	string	Name of a user or user group.
PARENTID	Mandatory	string	CIFS share ID.
DOMAINTYPE	Mandatory	string(uint32)	Domain type. **The value is described as follows:** 0: AD domain user or user group. 1: LDAP domain user or user group. 2: Local user or user group. 3: NIS domain user or user group.

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Parameter	Mandatory/ Conditional	Type	Description
PERMISSION	Mandatory	string(uint32)	Permission. **The value is described as follows:** 0: read 1: full control 2: forbidden 5: read and write
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
shareName	Conditional	string	Share name.

Example

- Querying information about a CIFS share user (user group).

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT/4294967297

Response: {
   "data": {
      "DOMAINTYPE": "2",
      "ID": "4294967297",
      "NAME": "tangfuwang",
      "PARENTID": "1",
      "PERMISSION": "0",
      "shareName": "share001",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.18 Interface for Querying IP Address Control Rules for CIFS Shares in Batches

Function

Query IP address control rules for CIFS shares in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The cifsShareID field is supported.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
cifsShareID	Mandatory	string	CIFS share ID.
rule	Mandatory	string	Rule.
vstoreId	Conditional	string	vStore ID.
ID	Mandatory	string	Rule ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Query IP address control rules for CIFS shares in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE?vstoreId=0

Response: {
   "data": [
      {
         "vstoreId": "0",
         "ID": "2993592499217",
         "cifsShareID": "697",
         "rule": "1.1.1.98"
      },
      {
         "vstoreId": "0",
```

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```
            "ID": "2993592499218",
            "cifsShareID": "697",
            "rule": "1.1.1.99"
        },
        {
            "vstoreId": "0",
            "ID": "2993592499219",
            "cifsShareID": "697",
            "rule": "1.1.1.100"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.19 Interface for Querying Mapping Rules of the CIFS Homedir Share in Batches

Function

This interface is used to query mapping rules of the CIFS homedir share in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering criteria. Query by specifying the parentID and NAME is supported. parentID must be queried precisely.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query scope. **The value is described as follows:** range:[i-j],"range" specifies that objects with subscripts from i to j-1 in the query result are returned. This parameter is used for paging query. **Note:**If no page is specified for the query operation, 100 records are returned by default.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Mapping rule ID of the CIFS homedir share.
parentID	Mandatory	string	Homedir share ID.
NAME	Mandatory	string	Mapping rule name of the CIFS homedir share.
fsId	Mandatory	string	File system ID.
fsPath	Mandatory	string	Share path.
priority	Mandatory	string(uint32)	Priority.

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Parameter	Mandatory/ Conditional	Type	Description
autoCreate	Mandatory	string（bool）	Whether to automatically create the directory. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreNAME	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying mapping rules of the CIFS homedir share in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule?filter=parentID::0

Response:
{
   "data": [
      {
         "ID": "0",
         "NAME": "adsfasdf",
         "autoCreate": "false",
         "fsId": "0",
         "fsPath": "/FileSystem001/",
         "parentID": "0",
         "priority": "20",
          "vstoreId": "0",
          "vstoreNAME":"System_vStore"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.20 Interface for Querying NFS Share Client Information

Function

This interface is used to query information about NFS share clients.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share client ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	NFS share client ID.
NAME	Mandatory	string	Client IP address, host name, or network group name.
PARENTID	Mandatory	string	ID of the parent object.
ACCESSVAL	Mandatory	string(uint32)	Permission. **The value is described as follows:** 0: read-only 1: read and write 5: no permission

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Parameter	Mandatory/ Conditional	Type	Description
ACCESSKRB5	Mandatory	uint32	Access permission for the NFS share in krb5 security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5I	Mandatory	uint32	Access permission for the NFS share in krb5i security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
ACCESSKRB5P	Mandatory	uint32	Access permission for the NFS share in krb5p security mode. **The value is described as follows:** 0: read-only 1: read and write 5: no permission
SYNC	Mandatory	string(uint32)	Write mode. **The value is described as follows:** 0: synchronous 1: asynchronous
ALLSQUASH	Mandatory	string(uint32)	Permission constraint. **The value is described as follows:** 0: all_squash 1: no_all_squash
ROOTSQUASH	Mandatory	string(uint32)	root permission constraint. **The value is described as follows:** 0: root_squash 1: no_root_squash

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Parameter	Mandatory/ Conditional	Type	Description
SECURE	Mandatory	string(uint32)	Source port verification. **The value is described as follows:** 0: secure 1: insecure
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.
ANONYMOUSID	Mandatory	string(uint32)	Anonymous user ID. **Note:**This field is not supported temporarily.
chownMode	Mandatory	uint32	Ownership (owner or group) change mode. **The value is described as follows:** 0: restricted 1: unrestricted
v4AclPreserve	Mandatory	uint32	NFSv4 ACL protection. **The value is described as follows:** 0: enable 1: disable
ntfsUnixSecurityOps	Mandatory	uint32	NTFS UNIX security options. **The value is described as follows:** 0: fail 1: ignore

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Parameter	Mandatory/ Conditional	Type	Description
charsetEncoding	Mandatory	enum	NFS share encoding mode. **The value is described as follows:** 0: UTF-8 10: ZH 11: GBK 12: EUC-TW 13: BIG5 20: EUC-JP 21: JIS 22: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO 65535: default
securityType	Mandatory	int	Security type supported by NFS mounting. The security type can be unix, none, or none_unix. **The value is described as follows:** 0: unix 1: none 2: none_unix
SHARENAME	Mandatory	string	NFS share name.

Example

- Querying information about NFS share clients.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFS_SHARE_AUTH_CLIENT?
vstoreId=0&ID=3

Response:
 {
   "data": {
      "ACCESSVAL": "0",
      "ALLSQUASH": "1",
```

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```
        "ID": "3",
        "NAME": "*",
        "PARENTID": "1",
        "ROOTSQUASH": "0",
        "SYNC": "0",
        "SECURE": "1",
        "CHARSET":"12",
        "ANONYMOUSID":65533,
        "CHOWNMODE": "0",
        "V4ACLPRESERVE": "0",
        "NTFSUNIXSEC": "0",
        "SHARENAME":"/fs001",
        "securityType":"0",
        "ACCESSKRB5":"0",
        "ACCESSKRB5I":"1",
        "ACCESSKRB5P":"5",
        "vstoreId":"0",
        "vstoreName":"System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.21 Interface for Querying NFS Share Information

Function

This interface is used to query basic information about NFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	Object ID. **The value is described as follows:** NFS share ID.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
NAME	Mandatory	string	Share alias. **Note:**This field is not supported temporarily.
LOCKPOLICY	Mandatory	string(enum)	NFS lock policy. **The value is described as follows:** 0: recommended lock 1: mandatory lock **Note:**This field is not supported temporarily.
CHARACTERENCODING	Mandatory	string	Character coding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16401: NFSHARE
AUDITITEMS	Mandatory	string(array)	List of events that support auditing. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This field is not supported temporarily.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether the function of showing the .snapshot folder is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
DTREEID	Mandatory	string	
fileHandleByteAlign-mentSwitch		bool	Supports 4-byte alignment of handles. **The value is described as follows:** true: enabled false: disabled

Example

- Querying basic information about NFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFSSHARE/1

Response: {
   "data": {
      "DESCRIPTION": "",
      "FSID": "20",
      "ID": "1",
      "SHAREPATH": "/VMwareApp_001_ALL_200/",
      "DTREEID": "20@0",
      "NAME": "test",
      "LOCKPOLICY": "0",
      "CHARACTERENCODING": "0",
      "AUDITITEMS": [
         "0"
      ],
      "ENABLESHOWSNAPSHOT": "true",
      "vstoreId": "0",
      "vstoreName": "test",
      "TYPE": 16401,
      "FSNAME": "VMwareApp_001_ALL_200",
      "fileHandleByteAlignmentSwitch": "false"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.3.4.22 Interface for Querying Security Policies of Windows Users

Function

This interface is used to query security policies of Windows users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_SECURITY_POLICY/${vstoreId}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **Default:**0

Result

Parameter	Mandatory/Conditional	Type	Description
USERMINLENGTH	Mandatory	uint32	Minimum length of a user name.
PASSWORDMINLENGTH	Mandatory	uint32	Minimum length of a password.
PASSWORDMAXLENGTH	Mandatory	uint32	Maximum length of a password.
PWDCOMPLEX	Mandatory	uint32	Password strength. **The value is described as follows:** 0: normal, containing any two of special characters, uppercase letters, lowercase letters, and digits. 1: high, containing special characters and any two of uppercase letters, lowercase letters, and digits.

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Parameter	Mandatory/ Conditional	Type	Description
REDUPLICATECHAR-COUNT	Mandatory	uint32	Maximum number of consecutive same characters. **Note:**Maximum number of consecutive same characters in a password (0 indicates no restriction).
PWDINCORRECTTIMES	Mandatory	uint32	Maximum number of incorrect password attempts. **Note:**0 indicates no restriction.
PWDVALIDPERIOD	Mandatory	uint32	Password validity period of a man-machine user. **Note:**Validity periods are required for passwords and 0 indicates that passwords are permanently valid.
INACTIVEUSERLOCK-TIME	Mandatory	uint32	Idle lock interval. **The value is described as follows:** 0: disabled
USERMODIFYPWDVA-LIDPERIOD	Mandatory	uint32	Password change interval. **The value is described as follows:** 0: disabled
vstoreId		string	vStore ID.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
SIDPREFIX	Conditional	string	SID prefix of the Windows user. **The value is described as follows:** The value can contain uppercase letters, lowercase letters, digits, and hyphens (-).

Example

- Querying security policies of Windows users.

```
Request: GET /deviceManager/rest/210235843710E7000007/WINDOWS_USER_SECURITY_POLICY/?
vstoreId=1

Response: {
   "data": {
      "vstoreId": "0",
      "USERMINLENGTH": "3",
      "PASSWORDMINLENGTH": "8",
      "PASSWORDMAXLENGTH": "32",
      "PWDCOMPLEX": "0",
      "REDUPLICATECHARCOUNT": "3",
      "PWDINCORRECTTIMES": "3",
      "PWDVALIDPERIOD": "3",
      "INACTIVEUSERLOCKTIME": "10",
      "USERMODIFYPWDVALIDPERIOD": "5",
      "SRDPREFIX": "S-1-6-88",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.23 Interface for Querying the Count of User Mappings

Function

This interface is used to query the count of user mappings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymapping/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters FROMIDENTITY and TOIDENTITY are supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried user mappings.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.

Example

- Querying the count of user mappings.

```
Request: GET /deviceManager/rest/210235843910E6000009/identitymapping/count

Response:
{
    "data": {
        "COUNT": "4",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.4.24 Interface for Querying the Number of CIFS Share Users (Groups)

Function

This interface is used to query the number of CIFS share users (user groups).

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_SHARE_AUTH_CLIENT/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Query by PARANTID and NAME is supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried CIFS share users (user groups).

Example

- Querying the number of CIFS share users (user groups).

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_SHARE_AUTH_CLIENT/count?
filter=PARENTID: : 1

Response:
{
   "data": {
      "COUNT": "1"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.25 Interface for Querying the Number of CIFS Shares

Function

This interface is used to query the number of CIFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSSHARE/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by NAME, DESCRIPTION, subType, and FSID is supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried CIFS shares.

Example

- Querying the number of CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSSHARE/count
```

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```
Response: {
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.26 Interface for Querying the Number of File Name Extension Filtering Rules

Function

Query the number of file name extension filtering rules.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/SHARE_FILE_EXTENSION_FILTER/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Mandatory	enum	Share type. **The value is described as follows:** 16401: NFS share; 16402: CIFS share
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

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Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The FILEEXTENSIONNAME field is supported for fuzzy match. The RULETYPE field is supported for exact match.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of file name extension filtering rules. **The value is described as follows:** 0..120000

Example

- Query the number of file name extension filtering rules.

```
Request: GET /deviceManager/rest/210235843710E7000007/SHARE_FILE_EXTENSION_FILTER/count?vstoreId=1&PARENTTYPE=16401
Response:
{
    "data": {
        "COUNT": 35
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.27 Interface for Querying the Number of IP Address Control Rules for CIFS Shares

Function

Query the number of IP address control rules for CIFS shares.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFS_IP_CONTROL_RULE/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
cifsShareID	Optional	string	CIFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of IP address control rules for CIFS shares.

Example

- Query the number of IP address control rules for CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFS_IP_CONTROL_RULE/count

Response: {
    "data": {
        "count": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.28 Interface for Querying the Number of Mapping Rules of the CIFS Homedir Share

Function

This interface is used to query the number of mapping rules of the CIFS homedir share.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/cifsshare_homedir_rule/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering criteria. Query by specifying the parentID and NAME is supported. parentID must be queried precisely.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried mapping rules of the CIFS homedir share.

Example

- Querying the number of mapping rules of the CIFS homedir share.

```
Request: GET /deviceManager/rest/210235843910E6000009/cifsshare_homedir_rule/count?
filter=parentID::1

Response:
{
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.4.29 Interface for Querying the Number of Members in a Windows User Group

Function

This interface is used to query the number of members in a Windows user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER_GROUP_MAP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Mandatory	enum	Query criteria. **The value is described as follows:** Parameters ACCOUNTTYPE and GROUPNAME are supported. **Note:**The ACCOUNTTYPE and GROUPNAME fields must be delivered.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Length:**1-10 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory		Number of queried members in a Windows user group.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying the number of members in a Windows user group.

```
Request: GET/deviceManager/rest/210235843910E6000009/WINDOWS_USER_GROUP_MAP/count?
vstoreId=0&filter=GROUPNAME::test_grp and ACCOUNTTYPE::0
Response: {
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.30 Interface for Querying the Number of NFS Share Clients

Function

This interface is used to query the number of NFS share clients.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFS_SHARE_AUTH_CLIENT/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Query by PARENTID and NAME is supported. Exact matching: PARENTID Fuzzy matching: NAME
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried NFS shares.

Example

- Querying the number of NFS share clients.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFS_SHARE_AUTH_CLIENT/count

Response:
{
    "data": {
        "COUNT": "2"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.31 Interface for Querying the Number of NFS Shares

Function

This interface is used to query the number of NFS shares.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSSHARE/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by DESCRIPTION, SHAREPATH, or FSID is supported. Exact matching: FSID Fuzzy matching: NAME, DESCRIPTION
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried NFS shares.

Example

- Querying the number of NFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFSSHARE/count

Response: {
    "data": {
        "COUNT": "3"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.3.4.32 Interface for Querying the Number of UNIX User Groups

Function

This interface is used to query the number of UNIX user groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The parameter name is supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	string(uint32)	Number of queried UNIX user groups.

Example

- Querying the number of UNIX user groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_GROUP/count

Response:
{
   "data": {
      "count": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

2.11.3.4.33 Interface for Querying the Number of UNIX Users

Function

This interface is used to query the number of UNIX users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The parameter NAME is supported.
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	string(uint32)	Number of queried UNIX users.

Example

- Querying the number of UNIX users.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_USER/count

Response:
{
   "data": {
      "count": "1"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.34 Interface for Querying the Number of Windows User Groups

Function

This interface is used to query the number of Windows user groups.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_GROUP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering based on NAME, RID, and GROUPTYPE is supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of queried local user groups.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Example

- Querying the number of Windows user groups.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_GROUP/count

Response:
 {
    "data": {
        "COUNT": "2",
        "vstoreId": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.35 Interface for Querying the Number of Windows Users

Function

This interface is used to query the number of Windows users.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The parameter NAME is supported.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried Windows users.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying the number of Windows users.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_USER/count

Response: {
    "data": {
        "vstoreId": "0",
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.36 Interface for Querying UNIX User Group Information

Function

This interface is used to query basic information about a UNIX user group.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_GROUP

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	User group name. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Name.
description	Mandatory	string	Description.
group_type	Mandatory	string(enum)	User group type. **The value is described as follows:** 1: default 2: created by an administrator
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
id	Mandatory	string	User group ID.

Example

- Querying basic information about a local user group.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_GROUP?name=default_group

Response: {
    "data": {
        "description": "",
        "group_type": "1",
        "id": "100000",
        "name": "default_group",
        "vstoreId": "0",
        "vstoreName": "System_vStore"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.37 Interface for Querying UNIX User Information

Function

This interface is used to query basic information about a UNIX user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/UNIX_USER

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Name of the UNIX user. **The value is described as follows:** The value is a string of 1 to 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), periods (.), dollar signs ($), and underscores (_). The value cannot start with a hyphen (-) or a dollar sign ($).
vstoreId	Conditional	string	vStore ID. **Default:**0 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	Object ID.
name	Mandatory	string	Name.
description	Mandatory	string	Description.
primary_group_id	Mandatory	string	ID of the primary group to which a user belongs.
primary_group_name	Mandatory	string	Name of the primary group to which a user belongs.

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Parameter	Mandatory/ Conditional	Type	Description
group_names	Mandatory	string(array)	List of temporary groups to which a user belongs. **The value is described as follows:** A maximum of 31 temporary groups are supported.
user_type	Mandatory	string(enum)	User type. **The value is described as follows:** 1: default 2: created by an administrator
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Querying basic information about a UNIX user.

```
Request: GET /deviceManager/rest/210235843910E6000009/UNIX_USER?name=malei

Response: {
   "data": {
       "description": "",
       "group_names": "",
       "id": "100000",
       "name": "malei",
       "primary_group_id": "100000",
       "primary_group_name": "default_group",
       "user_type": "2",
       "vstoreId": "0",
       "vstoreName": "System_vStore"
   },
   "error": {
       "code": 0,
       "description": "0"
   }
}
```

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2.11.3.4.38 Interface for Querying User Mapping Configuration of a vStore

Function

This interface is used to query user mapping configuration of a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymappingconfig

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
IDMUUSERMAPPINGDN	Mandatory	string	IDMU search DN.
IDMUUSERMAPPINGDNTIMEOUT	Mandatory	string(uint32)	IDMU search timeout duration.
IDMUWINOBJECTCLASS	Mandatory	string	objectclass used by the Windows user searched by the IDMU. **The value is described as follows:** The value is a string containing 1 to 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
IDMUUNIXOBJECTCLASS	Mandatory	string	objectclass used by the UNIX user searched by the IDMU. **The value is described as follows:** The value is a string containing 1 to 255 characters.
USERMAPPINGPROVIDER	Mandatory	string(enum)	Mapping type. **The value is described as follows:** 0: user mapping not supported 1: mapping rules set in local 2: mapping rules set in IDMU 3: mapping rules set in IDMU and local, IDMU preferentially 4: mapping rules set in local and IDMU, local preferentially
DEFAULTWINDOWSUSER	Mandatory	string	Default Windows user.
DEFAULTUNIXUSER	Mandatory	string	Default UNIX user.
SAMEUSERSWITCH	Mandatory	string(enum)	Switch of a mapping between users with the same name. **The value is described as follows:** 0: off 1: on
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in vStore scenarios.

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Example

- Querying user mapping configuration of a vStore.

```
Request: GET /deviceManager/rest/210235843910E6000009/identitymappingconfig

Response:
{
   "data": {
      "IDMUUSERMAPPINGDN": "",
      "IDMUUSERMAPPINGDNTIMEOUT": "15",
      "USERMAPPINGPROVIDER": "0",
      "IDMUWINOBJECTCLASS": "ad",
      "IDMUUNIXOBJECTCLASS": "rt",
      "DEFAULTWINDOWSUSER": "admin",
      "DEFAULTUNIXUSER": "root",
      "SAMEUSERSWITCH": "on",
      "vstoreId": "0",
      "vstoreName":  "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.39 Interface for Querying Windows User Information

Function

This interface is used to query basic information about a Windows user.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WINDOWS_USER

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Optional	string	Windows user name. **The value is described as follows:** The name contains a maximum of 20 letters, digits, hyphens (-), periods (.), and underscores (_), and cannot contain spaces, control characters, or any of the following special characters: "/\ []:|<>+=;?*@,. **Length:**1~20 **Note:**The parameter must contain one of the NAME and RID.
RID	Optional	string	Windows user RID. **The value is described as follows:** The value ranges from 0 to 4,294,967,295. **Note:**The parameter must contain one of the NAME and RID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
NAME	Mandatory	string	Windows user name.
RID	Mandatory	string	Windows user RID. **The value is described as follows:** The value ranges from 0 to 4,294,967,295.

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Parameter	Mandatory/ Conditional	Type	Description
DESCRIPTION	Mandatory	string	Description.
STATUSENABLE	Mandatory	string(bool)	User status. **The value is described as follows:** true: enabled false: locked
PASSWORDVALIDPER-IOD	Mandatory	string(uint32)	Remaining password validity period. **The value is described as follows:** The value ranges from 0 to 999. FFFFFFFF(4294967295) indicates disabled.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
GROUPNAMES	Conditional	string(array)	Indicates the names of the groups of the Windows user.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
PRIVILEGES	Mandatory	string	Windows user privileges. **The value is described as follows:** A character string formed by PRIVILEGE numbers connected by commas (,). Commas are not required for a single PRIVILEGE number. The value can be "0", "1", or "2". **Note:** 0:"None": indicating no privileges 1:"SeSecurityPrivilege" including the SACL operation permission 2:"SeAntiVirusPrivilege": including the antivirus scanning permission Other values: "Illegal" The value can only be 0 or other strings.
SID	Mandatory	string	SID of a Windows user.

Example

- Querying basic information about a Windows user by name.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_USER?NAME=test

Response: {
   "data": {
      "DESCRIPTION": "",
      "RID": "100000",
      "NAME": "test",
      "PASSWORDVALIDPERIOD": "175",
      "STATUSENABLE": "true",
      "GROUPNAMES": "[\"group1\",\"group2\",\"group3\"]",
      "PRIVILEGES": "0",
      "vstoreName": "System_vStore",
      "vstoreId": "0",
      "SID": "S-1-5-21-373184-2338000668-4285930607-100000"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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- Querying basic information about a Windows user by RID.

```
Request: GET /deviceManager/rest/210235843910E6000009/WINDOWS_USER?RID=100000

Response: {
   "data": {
      "DESCRIPTION": "",
      "RID": "100000",
      "NAME": "test",
      "PASSWORDVALIDPERIOD": "175",
      "STATUSENABLE": "true",
      "GROUPNAMES": "[\"group1\",\"group2\",\"group3\"]",
      "PRIVILEGES": "0",
      "vstoreName": "System_vStore",
      "vstoreId": "0",
      "SID": "S-1-5-21-373184-2338000668-4285930607-100000"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.40 (Not Recommended)Interface for Batch Querying CIFS Share Information

Function

Query basic information about CIFS shares in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by NAME, DESCRIPTION, subType, DTREEID and FSID is supported.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
subType	Mandatory	string(uint32)	Share object subtype. **The value is described as follows:** 0: normal 1: homedir 2: all
DESCRIPTION	Mandatory	string	Description.
dirUmask	Mandatory	string	umask value of the shared directory.
SHAREPATH	Mandatory	string	Share path.

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Parameter	Mandatory/ Conditional	Type	Description
ABEENABLE	Mandatory	string(bool)	After this function is enabled, users can only access folders on which the users have access permissions. **Note:**This field is not supported temporarily.
FSID	Mandatory	string	File system ID.
ENABLEOPLOCK	Mandatory	string(bool)	Indicates whether the Oplock function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Mandatory	string(bool)	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Mandatory	string(bool)	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEIPCONTROL	Mandatory	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
OFFLINEFILEMODE	Mandatory	string(enum)	Offline cache mode. **The value is described as follows:** 0: disabled 1: manual 2: document 3: program **Note:**This field is not supported temporarily.
SMB2CAEnable	Mandatory	bool	Whether to allow the SMB continuous availability (CA) share property.
readdirTimeout	Mandatory	uint32	Timeout period of the readdir command. **The value is described as follows:** 1..120

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Parameter	Mandatory/ Conditional	Type	Description
AUDITITEMS	Mandatory	array	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr
APPLYDEFAULTACL	Mandatory	string(bool)	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEFILEEXTEN-SIONFILTER	Mandatory	string(bool)	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWPREVIOUSVERSIONS	Mandatory	string(bool)	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled
enableBrowse	Mandatory	string(bool)	Whether to allow Windows clients to browse the share. **The value is described as follows:** true: enabled false: disabled
DTREEID	Mandatory	string	Dtree ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
leaseEnable	Mandatory	string(bool)	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Mandatory	bool	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled
unencryptedAccess	Mandatory	bool	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: enabled false: disabled
fileSystemName	Mandatory	string	File system name.
fileUmask	Mandatory	string	umask value of the shared file.

Example

- Query basic information about CIFS shares in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSHARE?filter=NAME: t&range=[
    0-100
]

Response: {
    "data": [
        {
            "ABEENABLE": "false",
            "APPLYDEFAULTACL": "true",
            "AUDITITEMS": "[0]",
            "DESCRIPTION": "",
            "dirUmask": "000",
            "DTREEID": "1@0",
```

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```
            "enableBrowse": "true",
            "ENABLECA": "true",
            "ENABLEFILEEXTENSIONFILTER": "true",
            "ENABLEIPCONTROL": "false",
            "ENABLENOTIFY": "true",
            "ENABLEOPLOCK": "true",
            "ENABLESHOWPREVIOUSVERSIONS": "true",
            "ENABLESHOWSNAPSHOT": "true",
            "fileSystemName": "fs001",
            "fileUmask": "000",
            "FSID": "5",
            "ID": "1",
            "leaseEnable": "true",
            "NAME": "llt",
            "OFFLINEFILEMODE": "0",
            "readdirTimeout": "55",
            "SHAREPATH": "/FileSystem0050001/",
            "SMB2CAEnable": "true",
            "smb3EncryptionEnable": "true",
            "subType": "0",
            "unencryptedAccess": "true",
            "vstoreId": "0",
            "vstoreName": "System_vStore"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.3.4.41 (Not Recommended)Interface for Batch Querying NFS Share Information

Function

Batch query NFS share information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Query by SHAREPATH, DESCRIPTION, and FSID is supported. Exact matching: FSID Fuzzy matching: SHAREPATH, DESCRIPTION
range	Conditional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:** If "filter" is delivered, "range" is mandatory. A maximum of 100 pieces of data can be returned in the query result.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.
sort	Optional	string	Sorting condition. **The value is described as follows:** Sorting by SHAREPATH is supported.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
NAME	Mandatory	string	Share alias. **Note:**This parameter is not supported currently.
LOCKPOLICY	Mandatory	string(enum)	NFS lock policy. **The value is described as follows:** 0: Advisory locking 1: Mandatory locking **Note:**This parameter is not supported currently.
CHARACTERENCODING	Mandatory	string(enum)	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO **Note:**This parameter is not supported currently.

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 16401: NFSHARE
AUDITITEMS	Mandatory	string(array)	Indicates the list of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This parameter is not supported currently.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This parameter is not supported currently.
DTREEID	Mandatory	string	Dtree ID.

Example

- Batch query NFS share information.

```
Request: GET/deviceManager/rest/210235843910E6000009/NFSHARE?range=[
   0-100
]Response: {
   "data": [
      {
         "DESCRIPTION": "",
         "FSID": "20",
         "ID": "1",
         "DTREEID:20@0",
         "SHAREPATH": "/VMwareApp_001_ALL_200/",
         "TYPE": 16401
      },
      {
         "DESCRIPTION": "",
         "FSID": "21",
         "ID": "2",
         "DTREEID:21@0",
         "SHAREPATH": "/VMwareApp_002_ALL_210/",
         "TYPE": 16401
      },
      {
         "DESCRIPTION": "",
         "FSID": "22",
         "ID": "3",
         "DTREEID:22@0",
         "SHAREPATH": "/VMwareApp_001_ALL_220/",
         "TYPE": 16401
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.42 (Not Recommended)Interface for Querying CIFS Share Information

Function

This interface is used to query basic information about CIFS shares.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	CIFS share ID.
NAME	Mandatory	string	Name.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
subType	Mandatory	string(uint32)	Share object subtype. **The value is described as follows:** 0: normal 1: homedir 2: all
ABEENABLE	Mandatory	string(bool)	After this function is enabled, users can only access folders on which the users have access permissions. **Note:**This field is not supported temporarily.
FSID	Mandatory	string	File system ID.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEOPLOCK	Mandatory	string(bool)	Indicates whether the Oplock function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLENOTIFY	Mandatory	string(bool)	Indicates whether the Notify function is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLECA	Mandatory	string(bool)	Indicates whether failover is enabled. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLEIPCONTROL	Mandatory	string(bool)	Whether to enable the IP address access control feature. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
OFFLINEFILEMODE	Mandatory	string(enum)	Offline cache mode. **The value is described as follows:** 0: none 1: manual 2: document 3: program **Note:**This field is not supported temporarily.
AUDITITEMS	Mandatory	array	List of events that can be audited. **The value is described as follows:** 0: none 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr 13: get xattr 14: set xattr
APPLYDEFAULTACL	Mandatory	string(bool)	Whether to add the default ACL. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLEFILEEXTEN-SIONFILTER	Mandatory	string(bool)	Whether to enable file name extension filtering. **The value is described as follows:** true: enabled false: disabled **Note:**This field is not supported temporarily.
ENABLESHOWPREVIOUSVERSIONS	Mandatory	string(bool)	Whether the function of showing previous versions is enabled. **The value is described as follows:** true: enabled false: disabled
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled
enableBrowse	Mandatory	string(bool)	Whether to allow Windows clients to browse the share. **The value is described as follows:** true: enabled false: disabled
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
DTREEID	Mandatory	string	Dtree ID.

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Parameter	Mandatory/ Conditional	Type	Description
leaseEnable	Mandatory	string(bool)	Lease lock switch, which allows the client to lock a file with a lease key. The server can revoke the lock. Lease locks are supported with the SMB 2.1 protocol and later. **The value is described as follows:** true: enabled false: disabled
smb3EncryptionEnable	Mandatory	string(bool)	Indicates whether to enable the SMB3 encryption function. **The value is described as follows:** true: enabled false: disabled
unencryptedAccess	Mandatory	string(bool)	Indicates whether to allow access from unencrypted clients. **The value is described as follows:** true: enabled false: disabled
dirUmask	Mandatory	string	umask value of the shared directory.
fileSystemName	Mandatory	string	File system name.
readdirTimeout	Mandatory	uint32	Timeout period of the readdir command. **The value is described as follows:** 1..120
fileUmask	Mandatory	string	umask value of the shared file.
SMB2CAEnable	Mandatory	bool	Whether to allow the SMB continuous availability (CA) share property.

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Example

- Querying basic information about CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSHARE/1

Response: {
   "data": {
      "ABEENABLE": "false",
      "APPLYDEFAULTACL": "true",
      "AUDITITEMS": "[0]",
      "DESCRIPTION": "",
      "dirUmask": "000",
      "DTREEID": "1@0",
      "enableBrowse": "true",
      "ENABLECA": "true",
      "ENABLEFILEEXTENSIONFILTER": "true",
      "ENABLEIPCONTROL": "false",
      "ENABLENOTIFY": "true",
      "ENABLEOPLOCK": "true",
      "ENABLESHOWPREVIOUSVERSIONS": "true",
      "ENABLESHOWSNAPSHOT": "true",
      "fileSystemName": "fs001",
      "fileUmask": "000",
      "FSID": "5",
      "ID": "1",
      "leaseEnable": "true",
      "NAME": "llt",
      "OFFLINEFILEMODE": "0",
      "readdirTimeout": "55",
      "SHAREPATH": "/FileSystem0050001/",
      "SMB2CAEnable": "true",
      "smb3EncryptionEnable": "true",
      "subType": "0",
      "unencryptedAccess": "true",
      "vstoreId": "0",
      "vstoreName": "System_vStore"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.4.43 (Not Recommended)Interface for Querying NFS Share Information

Function

Query NFS share information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	NFS share ID.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	Object ID. **The value is described as follows:** NFS share ID.
DESCRIPTION	Mandatory	string	Description.
SHAREPATH	Mandatory	string	Share path.
FSID	Mandatory	string	File system ID.
NAME	Mandatory	string	Share alias. **Note:**This parameter is not supported currently.
LOCKPOLICY	Mandatory	string(enum)	NFS lock policy. **The value is described as follows:** 0: Advisory locking 1: Mandatory locking **Note:**This parameter is not supported currently.

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Parameter	Mandatory/ Conditional	Type	Description
CHARACTERENCODING	Mandatory	string	Character encoding used by the current share. **The value is described as follows:** 0: UTF-8 11: ZH 12: GBK 13: EUC-TW 14: BIG5 21: EUC-JP 22: JIS 23: S-JIS 30: DE 31: PT 32: ES 33: FR 34: IT 40: KO **Note:**This parameter is not supported currently.
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 16401: NFSHARE

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Parameter	Mandatory/ Conditional	Type	Description
AUDITITEMS	Mandatory	string(array)	Indicates the list of events that can be audited. **The value is described as follows:** 0: no operation 1: all 2: open 3: create 4: read 5: write 6: close 7: delete 8: rename 9: get security 10: set security 11: get attr 12: set attr **Note:**This parameter is not supported currently.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **Note:** 1. This field must be returned in multi-vStore scenarios. 2. This field is not supported temporarily.

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Parameter	Mandatory/ Conditional	Type	Description
ENABLESHOWSNAPSHOT	Mandatory	string(bool)	Whether to enable the function of showing snapshots. **The value is described as follows:** true: enabled false: disabled **Note:**This parameter is not supported currently.
DTREEID	Mandatory	string	Dtree ID.

Example

- Query NFS share information.

```
Request: GET/deviceManager/rest/210235843910E6000009/NFSHARE/1Response: {
    "data": {
        "DESCRIPTION": "",
        "FSID": "20",
        "ID": "1",
        "SHAREPATH": "/VMwareApp_001_ALL_200/",
        "DTREEID:20@0",
        "TYPE": 16401
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.44 (Not Recommended)Interface for Querying the Number of CIFS Shares

Function

Query the number of CIFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/CIFSHARE/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by NAME, DESCRIPTION, subType, and FSID is supported.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried CIFS shares.

Example

- Query the number of CIFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/CIFSHARE/count

Response: {
    "data": {
        "COUNT": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.4.45 (Not Recommended)Interface for Querying the Number of NFS Shares

Function

Query the number of NFS shares.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/NFSHARE/count

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Filtering by DESCRIPTION, SHAREPATH, or FSID is supported. Exact matching: FSID Fuzzy matching: NAME, DESCRIPTION
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried NFS shares.

Example

- Query the number of NFS shares.

```
Request: GET /deviceManager/rest/210235843910E6000009/NFSHARE/count

Response:
{
   "data": {
      "COUNT": "3"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.3.5 Others

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2.11.3.5.1 Interface for Clearing User Mapping Configuration of a vStore

Function

This interface is used to clear user mapping configuration of a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/identitymappingconfig

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Clearing user mapping configuration of a vStore.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/identitymappingconfig
{

}

Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.3.5.2 Interface for Testing Whether the Target User Exists

Function

This interface is used to test whether the target user exists.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/toidentity_test

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
MAPPINGTYPE	Mandatory	enum	Mapping type. **The value is described as follows:** 0: Windows to UNIX 1: UNIX to Windows 2: Kerberos to UNIX
TOIDENTITY	Mandatory	string	Target user.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TOIDENTITYEXIST	Mandatory	string(bool)	Whether the target user exists. **The value is described as follows:** true: exist false: not exist

Example

- Testing whether the target user exists.

```
Request: GET /deviceManager/rest/210235843910E6000009/toidentity_test?
MAPPINGTYPE=0&TOIDENTITY=user1

Response:
{
   "data": [{
      "TOIDENTITYEXIST": "false"
   }],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.4 antivirus

2.11.4.1 Add

2.11.4.1.1 Interface for Creating an On-Access Antivirus Scan Policy

Function

Create an on-access antivirus scan policy.

HighRisk

You are about to create the on-access antivirus scan policy. After it is set that files cannot be accessed after scan times out, if the antivirus server is unavailable or scan fails, the host is not allowed to access files, causing service interruption.

Suggestion: Confirm that you want to perform this operation.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**128

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludePeriod	Optional	string	Non-scan period. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 24:00. A maximum of five non-scan periods can be defined, which are separated by commas (,), for example, 09:00-12:00 and 13:00-14:00. **Length:**64
excludeFileType	Optional	string	Type of files that are not scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp". **Length:**896

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFilePath	Optional	string	Path of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc". **Length:**1792
maxFileSize	Optional	uint32	Maximum logical size of the file to be scanned. **The value is described as follows:** 0..4096 **Default:**512 **Length:**4

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Parameter	Mandatory/Optional/Conditional	Type	Description
timeout	Optional	int32	Scan timeout interval. **The value is described as follows:** 5..35 **Default:**5 **Unit:**seconds
accessAfterTimeout	Optional	bool	Indicates whether to continue the access after the scan times out. **The value is described as follows:** 1: yes 0: no **Default:**1
scanTrigger	Optional	enum	Scan triggered by file operations. **The value is described as follows:** 0: The antivirus scan is triggered when a file is closed. 1: The antivirus scan is triggered when a file is opened or closed. **Default:**0
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Conditional	string	Policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
excludePeriod	Conditional	string	Non-scan period. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 24:00. A maximum of five non-scan periods can be defined, which are separated by commas (,), for example, 09:00-12:00 and 13:00-14:00.

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Parameter	Mandatory/ Conditional	Type	Description
excludeFileType	Conditional	string	Type of files that are not scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp".

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Parameter	Mandatory/ Conditional	Type	Description
excludeFilePath	Conditional	string	Path of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc".
maxFileSize	Conditional	uint32	Maximum logical size of the file to be scanned. **The value is described as follows:** 0..4096
timeout	Conditional	uint32	Scan timeout interval. **The value is described as follows:** 5..35 **Unit:**seconds

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Parameter	Mandatory/ Conditional	Type	Description
accessAfterTimeout	Conditional	string	Indicates whether to continue the access after the scan times out. **The value is described as follows:** The value is yes.
scanTrigger	Conditional	string	Scan triggered by file operations. **The value is described as follows:** 0: The antivirus scan is triggered when a file is closed. 1: The antivirus scan is triggered when a file is opened or closed.

Example

- Create an on-access antivirus scan policy.

```
Request: POST /deviceManager/rest/2102350BVB10FA000073/ONACCESS_POLICY
{
   "name": "test",
   "excludePeriod": "09:00-12:00",
   "excludeFileType": "iso",
   "excludeFilePath": "/dir",
   "maxFileSize": "512",
   "timeout": "5",
   "accessAfterTimeout": "1",
   "scanTrigger": "0",
   "vstoreId": "2",
}
Response:
 {
   "data": {
   "ID": "210021000004050641",
   "name": "test",
   "excludePeriod": "09:00-12:00",
   "excludeFileType": "iso",
   "excludeFilePath": "/dir",
   "maxFileSize": "512",
   "timeout": "5",
   "accessAfterTimeout": "1",
   "scanTrigger": "0",
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.4.1.2 Interface for Creating an On-Access Antivirus Scan Task

Function

Create an on-access antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
switch	Mandatory	bool	Whether to enable the on-access antivirus scan task. **The value is described as follows:** 0: no. 1: yes.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

Parameter	Mandatory/Conditional	Type	Description
fsName	Mandatory	string	File system name.

Example

- Create an on-access antivirus scan task.

```
Request: POST/deviceManager/rest/2102350BVB10FA000073/AV_ON_ACCESS_TASK{
   "vstoreId": "1",
   "fileSystemID": "3",
   "switch": true,
   "policyId": "210021000004050642"
}Response: {
   "data": {
      "fsName: "fs1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Create an on-access antivirus scan task.

```
Request: POST/deviceManager/rest/2102350BVB10FA000073/AV_ON_ACCESS_TASK{
   "switch": true,
   "policyId": "210021000004050644",
   "fsName":"fs1",
```

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```
   "vstoreName":"vstore1"
}Response: {
   "data": {
      "fsName: "fs1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.1.3 Interface for Creating an On-Demand Antivirus Scan Policy

Function

Create an on-demand antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**128
scheduleType	Mandatory	enum	Schedule type. **The value is described as follows:** 0: periodic; 1: weekly; 2: manual

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Parameter	Mandatory/Optional/Conditional	Type	Description
period	Conditional	uint32	Scan period. **The value is described as follows:** 1..30 **Note:**This parameter is mandatory when scheduleType is set to periodic.
dayOfWeek	Conditional	string	Weekly execution date. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), or 7 (Sunday). Other values are invalid. **Length:**1024 **Note:**This parameter is mandatory when scheduleType is set to weekly.
startTime	Conditional	string	Start time of a scan task. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 23:59. **Length:**5 **Note:**This parameter is mandatory when scheduleType is set to weekly or periodic.

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Parameter	Mandatory/Optional/Conditional	Type	Description
duration	Conditional	string	Duration of a scan task. **The value is described as follows:** 1:The time format is hh:mm. The value ranges from 00:30 to 24:00 or is "until_scan_completes". 2:"until_scan_completes" indicates that the duration is unlimited until the task is complete. 3:If the schedule type is set to "weekly", the value cannot be "until_scan_completes". **Length:**32 **Note:**This parameter is mandatory when scheduleType is set to weekly or periodic.

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFileType	Optional	string	Types of files that are not to be scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp". **Length:**896
maxFileSize	Optional	uint32	Maximum logical size of a file to be scanned. **The value is described as follows:** 0..4096 **Length:**4
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFilePath	Optional	string	Path of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc". **Length:**1792

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	On-demand antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
scheduleType	Conditional	enum	Schedule type. **The value is described as follows:** 0: periodic; 1: manual; 2: weekly
period	Conditional	uint32	Scan period. **The value is described as follows:** 1..30
dayOfWeek	Conditional	string	Weekly execution date. **The value is described as follows:** Value range: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.
startTime	Conditional	string	Start time of a scan task. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 23:59.

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Parameter	Mandatory/ Conditional	Type	Description
duration	Conditional	string	Duration of a scan task. **The value is described as follows:** 1:The time format is hh:mm. The value ranges from 00:30 to 24:00 or is "until_scan_completes". 2:"until_scan_completes" indicates that the duration is unlimited until the task is complete.
excludeFileType	Conditional	string	Types of files that are not to be scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp".
maxFileSize	Conditional	uint32	Maximum logical size of a file to be scanned. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
excludeFilePath	Conditional	string	Path of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc".
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024

Example

- Create an on-demand antivirus scan policy.

```
Request: POST /deviceManager/rest/2102350BVB10FA000073/ONDEMAND_POLICY
{
    "name": "test2",
    "scheduleType": "0",
```

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```
    "startTime": "00:00",
    "duration": "00:30",
    "period": "1",
    "vstoreId": "0",
}
Response:
{
    "data": {
    "ID": "210021000004050641",
    "name": "test",
    "scheduleType": "0",
    "startTime": "00:00",
    "duration": "00:30",
    "dayOfWeek": "--",
    "period": "5",
    "excludeFileType": "--",
    "maxFileSize": "0",
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.4.1.4 Interface for Creating an On-Demand Antivirus Scan Task

Function

Create an on-demand antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
switch	Mandatory	bool	Whether to enable the on-demand antivirus scan task. **The value is described as follows:** 0: disables the function. 1: enables the function.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
immediatelyDuration	Optional	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0 **Length:**6
isImmediatelyTask	Optional	bool	Whether a task is being executed immediately. **The value is described as follows:** 0|1

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Parameter	Mandatory/Optional/Conditional	Type	Description
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

Parameter	Mandatory/Conditional	Type	Description
fsName	Mandatory	string	File system name.

Example

- Create an on-demand antivirus scan task.

```
Request: POST/deviceManager/rest/2102350BVB10FA000073/AV_ON_DEMAND_TASK
{
   "vstoreId": "1",
   "fileSystemID": "3",
   "switch": true,
   "policyId": "210021000004050645",
   "isImmediatelyTask":"1",
   "immediatelyDuration":"00:30"
}
Response:
{
   "data": {
      "fsName: "fs1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.1.5 Interface for Creating Antivirus Server Settings

Function

Create antivirus server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server

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Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Antivirus server name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.). **Length:**1~127
IPADDRESS	Mandatory	string	Antivirus server address. **The value is described as follows:** An IPv4 address consists of four 8-bit unsigned integers, each of which ranges from 0 to 255. An IPv6 address consists of eight 16-bit unsigned integers, each of which is represented by four hexadecimal digits.
PORT	Mandatory	uint32	Antivirus server port. **The value is described as follows:** The value ranges from 1 to 65535.

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Parameter	Mandatory/Optional/Conditional	Type	Description
VENDOR	Optional	enum	Antivirus server vendor. **The value is described as follows:** 0: Symantec Protection Engine 1: Symantec Endpoint Protection 2: Trend Micro ServerProtect 3: McAfee VirusScan Enterprise 4: Sophos Endpoint Protection 5: Kaspersky Antivirus Protection 7: OPSWAT MetaDefender ICAP Server 8: Rising Virtualization Security (Storage Safe) **Default:**0
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 286: antivirus server
ID	Mandatory	string(int)	Antivirus server ID.

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Parameter	Mandatory/ Conditional	Type	Description
NAME	Mandatory	string	Antivirus server name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status.
IPADDRESS	Mandatory	string	Antivirus server address. **Note:**IPv4 and IPv6 are supported.
PORT	Mandatory	string(int)	Antivirus server port. **The value is described as follows:** The value ranges from 1 to 65535.
VENDOR	Mandatory	string(enum)	Antivirus server vendor. **The value is described as follows:** 0: Symantec Protection Engine 1: Symantec Endpoint Protection 2: Trend Micro ServerProtect 3: McAfee VirusScan Enterprise 4: Sophos Endpoint Protection 5: Kaspersky Antivirus Protection 7: OPSWAT MetaDefender ICAP Server 8: Rising Virtualization Security (Storage Safe)

Example

- Create antivirus server settings.

```
Request: POST /deviceManager/rest/210235843910E6000009/av_server

{
   "vstoreId": "1",
    "PORT": "26810",
    "VENDOR": "0",
    "NAME": "avser02",
```

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```
    "IPADDRESS": "1234::4568",
}

Response:
{
    "data": {
        "TYPE": 286,
        "ID": "2",
        "IPADDRESS": "1234::4568",
        "NAME": "avser02",
        "PORT": "26810",
        "RUNNINGSTATUS": "35",
        "VENDOR": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.2 Delete

2.11.4.2.1 Interface for Deleting an On-Access Antivirus Scan Policy

Function

Delete the on-access antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the on-access antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Delete the on-access antivirus scan policy.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/ONACCESS_POLICY/
210021000004050641?vstoreId=1
Response:
{
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.2.2 Interface for Deleting an On-Access Antivirus Scan Task

Function

Delete an on-access antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

N/A

Example

- Delete an on-access antivirus scan task.

```
Request: DELETE/deviceManager/rest/210235843710E7000007/AV_ON_ACCESS_TASK{
    "vstoreId": "1",
    "fileSystemID": "3"
}Response: {
    "data": {

    },
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.11.4.2.3 Interface for Deleting an On-Demand Antivirus Scan Policy

Function

Delete an on-demand antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in the vStore scenario.
ID	Mandatory	string	ID of an on-demand antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

N/A

Example

- Delete an on-demand antivirus scan policy.

  ```
  Request: DELETE /deviceManager/rest/210235843710E7000007/ONDEMAND_POLICY/
  210021000004050641?vstoreId=1
  ```

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```
Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.2.4 Interface for Deleting an On-Demand Antivirus Scan Task

Function

Delete an on-demand antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in the vStore scenario.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

N/A

Example

- Delete an on-demand antivirus scan task.

```
Request: DELETE/deviceManager/rest/210235843710E7000007/AV_ON_DEMAND_TASK
{
    "vstoreId": "1",
    "fileSystemID": "3"
}
Response:
{
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.2.5 Interface for Deleting Antivirus Server Settings

Function

Delete antivirus server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server/${id}

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	uint32	Antivirus server ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

Result

N/A

Example

- Delete antivirus server settings.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/av_server/2
{
  "vstoreId": "1"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.3 Modify

2.11.4.3.1 Interface for Modifying an On-Access Antivirus Scan Policy

Function

Modify the on-access antivirus scan policy.

HighRisk

You are about to modify the on-access antivirus scan policy. After it is set that files cannot be accessed after scan times out, if the antivirus server is unavailable or scan fails, the host is not allowed to access files, causing service interruption.

Suggestion: Confirm that you want to perform this operation.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the on-access antivirus scan policy to be modified. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32
excludePeriod	Optional	string	Non-scan period. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 24:00. A maximum of five non-scan periods can be defined, which are separated by commas (,), for example, 09:00-12:00 and 13:00-14:00. **Length:**64

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFilePath	Optional	string	Path of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc". **Length:**1792

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFileType	Optional	string	Type of files that are not scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp". **Length:**4096
maxFileSize	Optional	uint32	Maximum size of a file to be scanned. **The value is described as follows:** 0~4096 **Length:**4
timeout	Optional	uint32	Timeout interval for non-scan. **The value is described as follows:** 5~35 **Unit:**seconds
clearExcludePeriod	Optional	string	Clears the non-scan period. **The value is described as follows:** The value is yes. **Length:**3

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Parameter	Mandatory/Optional/Conditional	Type	Description
clearExcludeFileType	Optional	string	Clears the types of files that are not scanned. **The value is described as follows:** The value is yes. **Length:**3
clearExcludeFilePath	Optional	string	Clears the paths of files that are not scanned. **The value is described as follows:** The value is yes. **Length:**3
accessAfterTimeout	Optional	bool	Indicates whether to continue the access after timeout. **The value is described as follows:** 1: yes 0: no **Default:**1
scanTrigger	Optional	enum	Scan triggered by file operations. **The value is described as follows:** 0: The antivirus scan is triggered when a file is closed. 1: The antivirus scan is triggered when a file is opened or closed. **Default:**0

Result

N/A

Example

- Modify the on-access antivirus scan policy.

```
Request: PUT /deviceManager/rest/2102350BVB10FA000073/ONACCESS_POLICY
{
   "ID": "210021000004050641",
```

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```
    "excludePeriod": "09:00-12:00",
    "excludeFileType": "jpg",
    "excludeFilePath": "/dir/",
    "maxFileSize": "0",
    "timeout": "5",
    "accessAfterTimeout": "1",
    "scanTrigger": "0",
}
Response:
 {
    "data": {
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.3.2 Interface for Modifying an On-Access Antivirus Scan Task

Function

Modify an on-access antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
switch	Optional	bool	Whether to enable the on-access antivirus scan task. **The value is described as follows:** 0: no 1: yes
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

N/A

Example

- Modify an on-access antivirus scan task.

```
Request: PUT/deviceManager/rest/210235843910E6000009/AV_ON_ACCESS_TASK{
    "vstoreId": "1",
    "fileSystemID": "3",
```

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```
    "switch": true,
    "policyId": "210021000004050642",
    "vstoreName":"vstore1",
    "fsName": "fs1"
}Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.3.3 Interface for Modifying an On-Demand Antivirus Scan Policy

Function

Modify an on-demand antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	On-demand antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32
scheduleType	Optional	enum	Schedule type. **The value is described as follows:** 0: periodic; 1: weekly; 2: manual
period	Optional	uint32	Scan period. **The value is described as follows:** 1..30

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Parameter	Mandatory/Optional/Conditional	Type	Description
startTime	Optional	string	Start time of a scan task. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 23:59. **Length:**5 **Note:**This parameter is mandatory when scheduleType is set to weekly or periodic.
duration	Optional	string	Duration of a scan task. **The value is described as follows:** 1:The time format is hh:mm. The value ranges from 00:30 to 24:00 or is "until_scan_completes". 2:"until_scan_completes" indicates that the duration is unlimited until the task is complete. 3:If the schedule type is set to "weekly", the value cannot be "until_scan_completes". **Length:**5

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Parameter	Mandatory/Optional/Conditional	Type	Description
dayOfWeek	Optional	string	Weekly execution date. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), or 7 (Sunday). Other values are invalid. **Length:**1024
excludeFileType	Optional	string	Types of files that are not to be scanned. **The value is described as follows:** The value contains 1 to 8 ASCII characters, including digits, letters, asterisks (*), question marks (?), and underscores (_). The file type cannot be duplicated. A maximum of 200 file types are supported. Multiple file types are separated by commas (,). The maximum character length (including commas) cannot exceed 895 characters. For example, "iso,bmp". **Length:**896

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Parameter	Mandatory/Optional/Conditional	Type	Description
maxFileSize	Optional	uint32	Maximum logical size of a file to be scanned. **The value is described as follows:** 0..4096 **Length:**4
clearExcludeFileType	Optional	string	Clear the types of files that are not scanned. **The value is described as follows:** The value is "yes". **Length:**3
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
excludeFilePath	Optional	string	Paths of files that are not scanned. **The value is described as follows:** The value contains 1 to 1791 ASCII characters, including digits, letters, and special characters except "|<>*?. If the file path contains commas (,), colons (:) must be used. The file path cannot be duplicated. A maximum of 100 file paths are supported. Multiple file paths are separated by commas (,). The maximum length (including commas) cannot exceed 1791. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/. In operation logs, colons (:) are displayed as commas (,), and file paths are separated by quotation marks ("), for example, "/dira,b","/dirc". **Length:**1792
clearExcludeFilePath	Optional	string	Clear the paths of the files that are not scanned. **The value is described as follows:** The value is "yes". **Length:**3

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Result

N/A

Example

- Modify an on-demand antivirus scan policy.

```
Request: PUT /deviceManager/rest/2102350BVB10FA000073/ONDEMAND_POLICY
{
   "ID": "210021000004050641",
   "scheduleType": "0",
   "period": 5,
   "startTime": "00:00",
   "duration": "00:30",
   "excludeFileType": "jpg",
   "maxFileSize": 0,
   "excludeFilePath": "/dir/",
   "vstoreId": "2",
}
Response:
{
   "data": {
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.3.4 Interface for Modifying an On-Demand Antivirus Scan Task

Function

Modify an on-demand antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
switch	Optional	bool	Whether to enable the on-demand antivirus scan task. **The value is described as follows:** 0: disables the function. 1: enables the function.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
immediatelyDuration	Optional	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0 **Length:**6
isImmediatelyTask	Optional	bool	Whether a task is being executed immediately. **The value is described as follows:** 0|1

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

N/A

Example

- Modify an on-demand antivirus scan task.

```
Request: PUT/deviceManager/rest/210235843910E6000009/AV_ON_DEMAND_TASK{
    "vstoreId": "1",
    "fileSystemID": "3",
    "switch": true,
    "policyId": "210021000004050643",
    "vstoreName":"vstore1",
    "fsName":"fs1"
}Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.3.5 Interface for Modifying Antivirus Scan Service Settings

Function

Modify antivirus scan service settings.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_config

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
enableScan	Optional	enum	Whether to enable scanning. **The value is described as follows:** 0: no. 1: yes.
preSharedKeyPass-phrases	Optional	string	Pre-shared key password. **The value is described as follows:** 1: a string of 16 to 96 characters. **Length:**16~96
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in the vStore scenario.
avVersion	Optional	uint32	Interval for scanning antivirus versions. **The value is described as follows:** 0..65535 **Unit:**Hours

Result

N/A

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Example

- Modify antivirus scan service settings.

```
Request: PUT /deviceManager/rest/210235843910E6000009/av_config
{
   "enableScan": 1
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4 Query

2.11.4.4.1 Interface for Batch Querying Antivirus Scan Tasks

Function

Query antivirus scan tasks in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_SCAN_TASK

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j in the query result. The objects are used for pagination query of data. **Length:**10
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
immediatelyDuration	Mandatory	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0.
isImmediatelyTask	Mandatory	bool	Whether a task is being executed immediately. **The value is described as follows:** 0: no. 1: yes.

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Parameter	Mandatory/ Conditional	Type	Description
scanBeginTime	Mandatory	string	Start time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss.
scanEndTime	Mandatory	string	End time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss.
scanProgress	Mandatory	uint32	Scan progress. **The value is described as follows:** 0..100.
scanStatus	Mandatory	enum	Scan task status. **The value is described as follows:** 0: ready 1: scanning 2: stopped
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.
totalObjectNum	Mandatory	uint64	Total number of scanned objects.
ondemandSwitch	Mandatory	bool	On-demand antivirus scan task switch. **The value is described as follows:** 1|0.
onaccessSwitch	Mandatory	bool	On-access antivirus scan task switch. **The value is described as follows:** 1|0.

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Parameter	Mandatory/ Conditional	Type	Description
onaccessPolicyName	Mandatory	string	Policy name. **The value is described as follows:** The value consists of 1 to 127 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.).
onaccessScanNum	Mandatory	uint64	Number of scanned objects.
onaccessScanFailed-Num	Mandatory	uint64	Number of objects that fail to be scanned.
onaccessInfectedNum	Mandatory	uint64	Number of infected objects.
ondemandPolicyName	Mandatory	string	Policy name. **The value is described as follows:** The value consists of 1 to 127 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.).
ondemandScanFailed-Num	Mandatory	uint64	Number of scanned objects.
ondemandInfected-Num	Mandatory	uint64	Number of infected objects.
ondemandScanNum	Mandatory	uint64	Number of scanned objects.
onaccessPolicyId	Mandatory	string	On-access antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

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Parameter	Mandatory/ Conditional	Type	Description
ondemandPolicyId	Mandatory	string	On-demand antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Query antivirus scan tasks in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_SCAN_TASK?
vstoreId=1&range=[0-100]

Response:
{
   "data": [
      {
         "fileSystemID": "1",
         "immediatelyDuration": "--",
         "ondemandPolicyId": "210021000004050642",
         "scanProgress": "0",
         "scanBeginTime": "--",
         "scanEndTime": "--",
         "ondemandScanNum": "0",
         "isImmediatelyTask": "0",
         "scanStatus": "0",
         "ondemandInfectedNum": "0",
         "ondemandScanFailedNum": "0",
         "totalObjectNum": "0",
         "fsName": "fs01",
         "ondemandPolicyName": "policy01"
      },
      {
         "fileSystemID": "2",
         "immediatelyDuration": "--",
         "ondemandPolicyId": "210021000004050641",
         "scanProgress": "0",
         "scanBeginTime": "--",
         "scanEndTime": "--",
         "ondemandScanNum": "0",
         "isImmediatelyTask": "0",
         "scanStatus": "0",
         "ondemandInfectedNum": "0",
         "ondemandScanFailedNum": "0",
         "totalObjectNum": "0",
         "fsName": "fs02",
         "ondemandPolicyName": "policy02"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.4.4.2 Interface for Batch Querying Antivirus Server Settings

Function

Batch query antivirus server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 286: antivirus server
ID	Mandatory	string(int)	Antivirus server ID.
IPADDRESS	Mandatory	string	Antivirus server address. **Note:**IPv4 and IPv6 are supported.
NAME	Mandatory	string	Antivirus server name.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 35: Invalid 89: Overloaded 53: Initializing
VENDOR	Mandatory	string(int)	Antivirus server vendor. **The value is described as follows:** 0: Symantec Protection Engine 1: Symantec Endpoint Protection 2: Trend Micro ServerProtect 3: McAfee VirusScan Enterprise 4: Sophos Endpoint Protection 5: Kaspersky Antivirus Protection 7: OPSWAT MetaDefender ICAP Server 8: Rising Virtualization Security (Storage Safe)
PORT	Mandatory	string(int)	Antivirus server port. **The value is described as follows:** 1~65535

Example

- Batch query antivirus server settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/av_server?vstoreId=1

Response:
{
   "data": [
      {
         "TYPE": "286",
         "ID": "0",
```

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```
            "IPADDRESS": "45.6.6.9",
            "NAME": "avserver001",
            "PORT": "26810",
            "RUNNINGSTATUS": "35",
            "VENDOR": "0"
        }, {
            "TYPE": "286",
            "ID": "1",
            "IPADDRESS": "45.66.99.8",
            "NAME": "dfd",
            "PORT": "26810",
            "RUNNINGSTATUS": "35",
            "VENDOR": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.4.4.3 Interface for Batch Querying On-Access Antivirus Scan Policies

Function

This interface is used to batch query on-access antivirus scan policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range: [i-j]. range specifies that objects whose subscripts are from i+1 to j in the query result are returned for pagination query. If i is 0, objects whose subscripts range from 0 to j in the query result are returned. That is, the query result contains the default policy. **Length:**10 **Note:**A maximum of 100 records can be returned at a time. If the range field is not specified, a maximum of 101 records can be returned at a time.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
filter	Optional	string	Query criteria. **The value is described as follows:** The following field is supported: name. Only fuzzy match is performed. **Length:**128

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of the on-access antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
excludePeriod	Mandatory	string	Non-scan period. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 24:00. A maximum of five non-scan periods can be defined, which are separated by commas (,), for example, 09:00-12:00 and 13:00-14:00.

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Parameter	Mandatory/ Conditional	Type	Description
excludeFileType	Mandatory	string	Type of files that are not scanned. **The value is described as follows:** The value consists of 1 to 8 ASCII characters, including digits and letters. The file types cannot be the same. A maximum of 500 types can be configured. Separate different types with commas (,). The total string contains a maximum of 4095 characters (including commas). For example, "iso,bmp".
excludeFilePath	Mandatory	string	Path of files that are not scanned. **The value is described as follows:** The value is a string of 1 to 4095 ASCII characters, including digits, letters, underscores (_), and hyphens (-). The file types cannot be the same. A maximum of 100 file paths are supported, and they are separated by commas (,). The maximum length (including commas) cannot exceed 4095. For example, /aa/bb,/ff/gg_/.
maxFileSize	Mandatory	uint32	Maximum logical size of the file to be scanned. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
timeout	Mandatory	int32	Scan timeout interval. **The value is described as follows:** 5..35 **Unit:**seconds
accessAfterTimeout	Mandatory	bool	Indicates whether to continue the access after the scan times out. **The value is described as follows:** 1: allowed; 0: not allowed.
scanTrigger	Mandatory	enum	Scan triggered by file operations. **The value is described as follows:** 0: The antivirus scan is triggered when a file is closed. 1: The antivirus scan is triggered when a file is opened or closed.

Example

- Query the on-access antivirus scan policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONACCESS_POLICY?vstoreId=1
Response:
{
   "data": [
      {
         "ID": "210021000004050642",
         "name": "2",
         "excludePeriod": "09:00-12:00",
         "excludeFileType": "--",
         "excludeFilePath": "--",
         "maxFileSize": "512",
         "timeout": "5",
         "accessAfterTimeout": "1",
         "scanTrigger": "0",
      }, {
         "ID": "210021000004050643",
         "name": "3",
         "excludePeriod": "09:00-12:00",
         "excludeFileType": "--",
         "excludeFilePath": "--",
         "maxFileSize": "512",
         "timeout": "5",
         "accessAfterTimeout": "1",
         "scanTrigger": "0",
```

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```
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

- Query the on-access antivirus scan policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONACCESS_POLICY?range=[0-100]

Response: {
    "data": [
        {
            "ID": "0",
            "name": "2",
            "excludePeriod": "09:00-12:00",
            "excludeFileType": "--",
            "excludeFilePath": "--",
            "maxFileSize": "512",
            "timeout": "5",
            "accessAfterTimeout": "1",
            "scanTrigger": "0"
        },
        {
            "ID": "210021000004050643",
            "name": "3",
            "excludePeriod": "09:00-12:00",
            "excludeFileType": "--",
            "excludeFilePath": "--",
            "maxFileSize": "512",
            "timeout": "5",
            "accessAfterTimeout": "1",
            "scanTrigger": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.4.4 Interface for Batch Querying On-Access Antivirus Scan Tasks

Function

Batch query on-access antivirus scan tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16
range	Optional	string	Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j in the query result. The objects are used for pagination query of data. **Length:**10

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
switch	Mandatory	bool	Whether to enable the on-access antivirus scan task. **The value is described as follows:** 0: no 1: yes
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.
scanObjectNum	Mandatory	uint64	Number of scanned objects.

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Parameter	Mandatory/ Conditional	Type	Description
infectedObjectNum	Mandatory	uint64	Number of infected objects.
scanFailedObjectNum	Mandatory	uint64	Number of objects that fail to be scanned.
policyName	Mandatory	string	Policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Batch query on-access antivirus scan tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_ON_ACCESS_TASK?
vstoreId=1&range=[0-100]

Response:
{
   "data": [
      {
         "fileSystemID": "1",
         "switch": "1",
         "scanObjectNum": "0",
         "infectedObjectNum": "0",
         "scanFailedObjectNum": "0",
         "policyId": "210021000004050640",
         "fsName": "fs01"
      },
      {
         "fileSystemID": "2",
         "switch": "0",
         "scanObjectNum": "0",
         "infectedObjectNum": "0",
         "scanFailedObjectNum": "0",
         "policyId": "2100210000040506431",
         "fsName": "fs02"
      }
   ],
   "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.11.4.4.5 Interface for Batch Querying On-Demand Antivirus Scan Policies

Function

Batch query on-demand antivirus scan policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** The following field is supported: name. Only fuzzy match is performed. **Length:**128
range	Optional	string	Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j in the query result. The objects are used for pagination query of data. **Length:**10
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of an on-demand antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
scheduleType	Mandatory	enum	Schedule type. **The value is described as follows:** 0: periodic; 1: weekly; 2: manual
period	Mandatory	uint32	Scan period. **The value is described as follows:** 1..30

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Parameter	Mandatory/ Conditional	Type	Description
dayOfWeek	Mandatory	string	Weekly execution date. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), or 7 (Sunday).
startTime	Mandatory	string	Start time of a scan task. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 23:59.
duration	Mandatory	string	Duration of a scan task. **The value is described as follows:** 1:The value is in the format of hh:mm and ranges from 00:30 to 24:00, or the value can be "until_scan_completes". 2:"until_scan_completes" indicates that the duration is unlimited until the task is complete.

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Parameter	Mandatory/ Conditional	Type	Description
excludeFileType	Mandatory	string	Types of files that are not to be scanned. **The value is described as follows:** The value consists of 1 to 8 ASCII characters, including digits and letters. The file types cannot be the same. A maximum of 500 types can be configured. Separate different types with commas (,). The total string contains a maximum of 4095 characters (including commas). For example, "iso,bmp".
maxFileSize	Mandatory	uint32	Maximum logical size of a file to be scanned. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
excludeFilePath	Mandatory	string	Paths of files that are not scanned. **The value is described as follows:** The value is a string of 1 to 4095 ASCII characters, including digits, letters, underscores (_), hyphens (-), and other special characters. The file path cannot be duplicated. A maximum of 100 file paths are supported. Use commas (,) to separate multiple paths. The maximum length (including commas) cannot exceed 4095 characters. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be returned in vStore scenarios.

Example

- Query on-demand antivirus scan policies.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONDEMAND_POLICY?vstoreId=1
Response: {
   "data": [
      {
         "ID": "210021000004050642",
         "name": "2",
         "scheduleType": "0",
         "period": "5",
         "startTime": "00:00",
         "duration": "00:30",
         "dayOfWeek": "--",
         "excludeFileType": "--",
         "maxFileSize": "0",
         "excludeFilePath": "--"
      }, {
```

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```
            "ID": "210021000004050643",
            "name": "3",
            "scheduleType": "0",
            "period": "5",
            "startTime": "00:00",
            "duration": "00:30",
            "dayOfWeek": "--",
            "excludeFileType": "--",
            "maxFileSize": "0",
            "excludeFilePath": "--"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.4.4.6 Interface for Batch Querying On-Demand Antivirus Scan Tasks

Function

Batch query on-demand antivirus scan tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16
range	Optional	string	Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j in the query result. The objects are used for pagination query of data. **Length:**10

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Result

Parameter	Mandatory/ Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
switch	Mandatory	bool	Whether the on-demand antivirus scan task is enabled. **The value is described as follows:** 0: disabled. 1: enabled.
immediatelyDuration	Mandatory	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0.
isImmediatelyTask	Mandatory	bool	Whether a task is being executed immediately. **The value is described as follows:** 0: no. 1: yes.
scanBeginTime	Mandatory	string	Start time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanEndTime	Mandatory	string	End time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanObjectNum	Mandatory	uint64	Number of scanned objects.
scanProgress	Mandatory	uint32	Scan progress. **The value is described as follows:** 0..100.

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Parameter	Mandatory/ Conditional	Type	Description
scanStatus	Mandatory	enum	Scan task status. **The value is described as follows:** 0: ready 1: scanning 2: stopped
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.
policyName	Mandatory	string	Policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
totalObjectNum	Mandatory	uint64	Total number of scanned objects.
scanFailedObjectNum	Mandatory	uint64	Number of objects that fail to be scanned.
infectedObjectNum	Mandatory	uint64	Number of infected objects.
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Batch query on-demand antivirus scan tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_ON_DEMAND_TASK?
vstoreId=1&range=[0-100]

Response:
```

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```
{
  "data": [
    {
      "fileSystemID": "1",
      "switch": "1",
      "immediatelyDuration": "--",
      "policyId": "210021000004050641",
      "scanProgress": "0",
      "scanBeginTime": "--",
      "scanEndTime": "--",
      "scanObjectNum": "0",
      "isImmediatelyTask": "0",
      "scanStatus": "0",
      "infectedObjectNum": "0",
      "scanFailedObjectNum": "0",
      "totalObjectNum": "0",
      "fsName": "fs01",
      "policyName": "policy01"
    },
    {
      "fileSystemID": "2",
      "switch": "0",
      "immediatelyDuration": "--",
      "policyId": "210021000004050412",
      "scanProgress": "0",
      "scanBeginTime": "--",
      "scanEndTime": "--",
      "scanObjectNum": "0",
      "isImmediatelyTask": "0",
      "scanStatus": "0",
      "infectedObjectNum": "0",
      "scanFailedObjectNum": "0",
      "totalObjectNum": "0",
      "fsName": "fs02",
      "policyName": "policy02"
    }
  ],
  "error": {
    "code": 0,
    "description": "0"
  }
}
```


2.11.4.4.7 Interface for Querying an Antivirus Scan Task

Function

Query a single antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_SCAN_TASK

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.

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Parameter	Mandatory/ Conditional	Type	Description
immediatelyDuration	Mandatory	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0.
isImmediatelyTask	Mandatory	bool	Whether a task is being executed immediately. **The value is described as follows:** 0: no. 1: yes.
scanBeginTime	Mandatory	string	Start time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanEndTime	Mandatory	string	End time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanProgress	Mandatory	uint32	Scan progress. **The value is described as follows:** 0..100.
scanStatus	Mandatory	enum	Scan task status. **The value is described as follows:** 0: ready 1: scanning 2: stopped 3. Antivirus does not support read-only file systems. 4: Antivirus does not support HyperMetro.

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Parameter	Mandatory/ Conditional	Type	Description
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.
ondemandSwitch	Mandatory	bool	On-demand antivirus scan task switch. **The value is described as follows:** 1|0
onaccessSwitch	Mandatory	bool	On-access antivirus scan task switch. **The value is described as follows:** 1|0
onaccessPolicyName	Mandatory	string	Policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
onaccessScanNum	Mandatory	uint64	Number of scanned objects.
onaccessScanFailed-Num	Mandatory	uint64	Number of objects that fail to be scanned.
onaccessInfectedNum	Mandatory	uint64	Number of infected objects.
ondemandPolicyName	Mandatory	string	Policy name. **The value is described as follows:** The value consists of 1 to 127 ASCII characters including digits, letters, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory/ Conditional	Type	Description
totalObjectNum	Mandatory	uint64	Total number of scanned objects.
ondemandScanFailed-Num	Mandatory	uint64	Number of objects that fail to be scanned.
ondemandInfected-Num	Mandatory	uint64	Number of infected objects.
ondemandScanNum	Mandatory	uint64	Number of scanned objects.
onaccessPolicyId	Mandatory	string	On-access antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
ondemandPolicyId	Mandatory	string	On-demand antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Query an antivirus scan task.

```
Request: GET/deviceManager/rest/210235843710E7000007/AV_SCAN_TASK?
fileSystemID=2&vstoreId=1
Response: {
   "data": {
      "fileSystemID": "2",
      "immediatelyDuration": "0",
      "isImmediatelyTask": "true",
      "ondemandPolicyId": "21002100000405064",
      "scanBeginTime": "--",
      "scanEndTime": "--",
      "ondemandScanNum": "0",
      "ondemandScanFailedNum": "0",
      "ondemandInfectedNum": "0",
      "totalObjectNum": "0",
      "scanProgress": "0",
      "scanStatus": "2",
      "ondemandPolicyName": "policy001",
      "fsName": "fs001"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.11.4.4.8 Interface for Querying an On-Access Antivirus Scan Policy

Function

Query a single on-access antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of the on-access antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
ID	Mandatory	string	ID of the on-access antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
excludePeriod	Mandatory	string	Non-scan period. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 24:00. A maximum of five non-scan periods can be defined, which are separated by commas (,), for example, 09:00-12:00 and 13:00-14:00.

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Parameter	Mandatory/ Conditional	Type	Description
excludeFileType	Mandatory	string	Type of files that are not scanned. **The value is described as follows:** The value consists of 1 to 8 ASCII characters, including digits and letters. The file types cannot be the same. A maximum of 500 types can be configured. Separate different types with commas (,). The total string contains a maximum of 4095 characters (including commas). For example, "iso,bmp".
excludeFilePath	Mandatory	string	Path of files that are not scanned. **The value is described as follows:** The value is a string of 1 to 4095 ASCII characters, including digits, letters, underscores (_), and hyphens (-). The file types cannot be the same. A maximum of 100 file paths are supported, and they are separated by commas (,). The maximum length (including commas) cannot exceed 4095. For example, /aa/bb,/ff/gg_/.
maxFileSize	Mandatory	uint32	Maximum logical size of the file to be scanned. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
timeout	Mandatory	int32	Scan timeout interval. **The value is described as follows:** 5..35 **Unit:**seconds
scanTrigger	Mandatory	enum	Scan triggered by file operations. **The value is described as follows:** 0: The antivirus scan is triggered when a file is closed. 1: The antivirus scan is triggered when a file is opened or closed.
accessAfterTimeout	Mandatory	bool	Indicates whether to continue the access after the scan times out. **The value is described as follows:** 1: allowed; 0: not allowed.

Example

- Query the on-access antivirus scan policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONACCESS_POLICY/
210021000004050642?vstoreId=1
Response:
 {
    "data": {
        "ID": "210021000004050642",
        "name": "test",
        "excludePeriod": "09:00-12:00",
        "excludeFileType": "--",
        "excludeFilePath": "--",
        "maxFileSize": "512",
        "timeout": "5",
        "accessAfterTimeout": "1",
        "scanTrigger": "0",
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.4.4.9 Interface for Querying an On-Access Antivirus Scan Task

Function

Query a single on-access antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

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Result

Parameter	Mandatory/ Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
switch	Mandatory	bool	Whether to enable the on-access antivirus scan task. **The value is described as follows:** 0: no 1: yes
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.
scanFileNum	Mandatory		Number of scanned objects.
scanFailedObjectNum	Mandatory	uint64	Number of objects that fail to be scanned.
infectedObjectNum	Mandatory	uint64	Number of infected objects.
policyName	Mandatory	string	Policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

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Example

- Query a single on-access antivirus scan task.

```
Request: GET/deviceManager/rest/210235843710E7000007/AV_ON_ACCESS_TASK?
fileSystemID=2&vstoreId=1
Response: {
   "data": {
      "fileSystemID": "2",
      "switch": "true",
      "policyId": "210021000004050642",
       "scanObjectNum": "0",
       "infectedObjectNum": "0",
       "scanFailedObjectNum": "0",
      "fsName": "fs001"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.10 Interface for Querying an On-Demand Antivirus Scan Policy

Function

Query a single on-demand antivirus scan policy.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID of an on-demand antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits. **Length:**32

Result

Parameter	Mandatory/Conditional	Type	Description
ID	Mandatory	string	ID of an on-demand antivirus scan policy. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.
name	Mandatory	string	Scan policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
scheduleType	Mandatory	enum	Schedule type. **The value is described as follows:** 0: periodic; 1: weekly; 2: manual
period	Mandatory	uint32	Scan period. **The value is described as follows:** 1..30

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Parameter	Mandatory/ Conditional	Type	Description
startTime	Mandatory	string	Start time of a scan task. **The value is described as follows:** The time format is hh:mm. The value ranges from 00:00 to 23:59.
duration	Mandatory	string	Duration of a scan task. **The value is described as follows:** 1:The value is in the format of hh:mm and ranges from 00:30 to 24:00, or the value can be "until_scan_completes". 2:"until_scan_completes" indicates that the duration is unlimited until the task is complete.
dayOfWeek	Mandatory	string	Weekly execution date. **The value is described as follows:** The value is a character string consisting of digits separated by commas (,). Commas are not required for a single digit. The value can be 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), or 7 (Sunday).

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Parameter	Mandatory/ Conditional	Type	Description
excludeFileType	Mandatory	string	Types of files that are not to be scanned. **The value is described as follows:** The value consists of 1 to 8 ASCII characters, including digits and letters. The file types cannot be the same. A maximum of 500 types can be configured. Separate different types with commas (,). The total string contains a maximum of 4095 characters (including commas). For example, "iso,bmp".
maxFileSize	Mandatory	uint32	Maximum logical size of a file to be scanned. **The value is described as follows:** 0..4096

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Parameter	Mandatory/ Conditional	Type	Description
excludeFilePath	Mandatory	string	Paths of files that are not scanned. **The value is described as follows:** The value is a string of 1 to 4095 ASCII characters, including digits, letters, underscores (_), hyphens (-), and other special characters. The file path cannot be duplicated. A maximum of 100 file paths are supported. Use commas (,) to separate multiple paths. The maximum length (including commas) cannot exceed 4095 characters. The path starts with a slash (/) and the folder names are separated by slashes (/). For example, /aa/bb,/ff/gg_/.
vstoreId	Conditional	string	vStore ID. **Note:**This parameter must be returned in vStore scenarios.

Example

- Query an on-demand antivirus scan policy.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONDEMAND_POLICY/
21002100004050641?vstoreId=1
Response:
{
    "data": {
        "ID": "210021000004050641",
        "name": "test",
        "scheduleType": "0",
        "period": "5",
        "startTime": "00:00",
        "duration": "00:30",
        "dayOfWeek": "--",
        "excludeFileType": "--",
        "maxFileSize": "0",
        "excludeFilePath": "--"
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.4.11 Interface for Querying an On-Demand Antivirus Scan Task

Function

This interface is used to query a single on-demand antivirus scan task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemID	Optional	uint64	File system ID. **The value is described as follows:** 1-65535.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
fsName	Optional	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemID	Mandatory	uint64	File system ID. **The value is described as follows:** 1-65535.
switch	Mandatory	bool	Whether the on-demand antivirus scan task is enabled. **The value is described as follows:** 0: disabled 1: enabled
immediatelyDuration	Mandatory	string	Duration of an immediate scan task. **The value is described as follows:** 00:30-168:00 or 0.
isImmediatelyTask	Mandatory	bool	Whether a task is being executed immediately. **The value is described as follows:** 0: no. 1: yes.

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Parameter	Mandatory/ Conditional	Type	Description
scanBeginTime	Mandatory	string	Start time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanEndTime	Mandatory	string	End time of the latest antivirus scan. **The value is described as follows:** yyyy-mm-dd hh:mm:ss
scanObjectNum	Mandatory	uint64	Number of scanned objects.
scanFailedObjectNum	Mandatory	uint64	Number of objects that fail to be scanned.
infectedObjectNum	Mandatory	uint64	Number of infected objects.
scanProgress	Mandatory	uint32	Scan progress. **The value is described as follows:** 0..100.
scanStatus	Mandatory	enum	Scan task status. **The value is described as follows:** 0: ready 1: scanning 2: stopped 3. Antivirus does not support read-only file systems. 4: queuing
fsName	Mandatory	string	File system name. **The value is described as follows:** The value is a string of 1 to 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
policyName	Mandatory	string	Policy name. **The value is described as follows:** The value contains 1 to 127 ASCII characters, including digits, letters, underscores (_), hyphens (-), and periods (.).
totalObjectNum	Mandatory	uint64	Total number of scanned objects.
policyId	Mandatory	string	Antivirus scan policy ID. **The value is described as follows:** The value is a hexadecimal number of 1 to 32 digits.

Example

- Query an on-demand antivirus scan task.

```
Request: GET/deviceManager/rest/210235843710E7000007/AV_ON_DEMAND_TASK?
fileSystemID=2&vstoreId=1
Response: {
   "data": {
      "fileSystemID": "2",
      "switch": "true",
      "immediatelyDuration": "0",
      "isImmediatelyTask": "true",
      "policyId": "210021000004050645",
      "scanBeginTime": "--",
      "scanEndTime": "--",
      "scanObjectNum": "0",
      "scanFailedObjectNum": "0",
      "infectedObjectNum": "0",
      "totalObjectNum": "0",
      "scanProgress": "0",
      "scanStatus": "2",
      "policyName": "policy001",
      "fsName": "fs001"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.4.4.12 Interface for Querying Antivirus Scan Service Settings

Function

Query antivirus scan service settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_config

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in the vStore scenario.

Result

Parameter	Mandatory/Conditional	Type	Description
enableScan	Mandatory	string(enum)	Whether to enable scanning. **The value is described as follows:** 0: no. 1: yes.
avVersion	Mandatory	uint32	Interval for scanning antivirus versions. **The value is described as follows:** 0..65535

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Example

- Query antivirus scan service settings.

```
Request: GET /deviceManager/rest/210235843910E6000009/av_config

Response: {
   "data": {
      "enableScan": "0",
      "avVersion": "20",

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.13 Interface for Querying Antivirus Server Settings

Function

This interface is used to query antivirus server settings.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	int	Antivirus server ID.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 286: antivirus server
ID	Mandatory	string(int)	Antivirus server ID.
IPADDRESS	Mandatory	string	Antivirus server address. **Note:**IPv4 and IPv6 are supported.
NAME	Mandatory	string	Antivirus server name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 35: Invalid 89: Overloaded 53: Initializing
VENDOR	Mandatory	string(int)	Antivirus server vendor. **The value is described as follows:** 0: Symantec Protection Engine 1: Symantec Endpoint Protection 2: Trend Micro ServerProtect 3: McAfee VirusScan Enterprise 4: Sophos Endpoint Protection 5: Kaspersky Antivirus Protection 7: OPSWAT MetaDefender ICAP Server 8: Rising Virtualization Security (Storage Safe)

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Parameter	Mandatory/ Conditional	Type	Description
PORT	Mandatory	string(int)	Antivirus server port. **The value is described as follows:** The value ranges from 1 to 65535.

Example

- Querying settings about the antivirus server whose ID is "0".

```
Request: GET /deviceManager/rest/210235843910E6000009/av_server/0?vstoreId=1


Response:
{
   "data": {
      "ID": "0",
      "IPADDRESS": "1.1.1.1",
      "NAME": "hhhhhhh",
      "PORT": "26810",
      "RUNNINGSTATUS": "35",
      "TYPE": 286,
      "VENDOR": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.14 Interface for Querying the Number of Antivirus Scan Tasks

Function

Query the number of antivirus scan tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_SCAN_TASK/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters, including letters, digits, underscores (_), periods (.), and hyphens (-). **Length:**256

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of antivirus scan tasks. **Unit:**entry

Example

- Query the number of antivirus scan tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_SCAN_TASK/count?vstoreId=1

Response:
{
   "data": {
      "count": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.15 Interface for Querying the Number of Antivirus Servers

Function

Query the number of antivirus servers.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	uint32	Number of antivirus servers.

Example

- Query the number of antivirus servers.

```
Request: GET /deviceManager/rest/210235843910E6000009/av_server/count?vstoreId=1

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.16 Interface for Querying the Number of On-Access Antivirus Scan Policies

Function

Query the number of on-access antivirus scan policies.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONACCESS_POLICY/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This parameter must be delivered in vStore scenarios.
filter	Optional	string	**The value is described as follows:** Character string **Length:**128

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of on-access antivirus scan policies. **The value is described as follows:** 0..1024

Example

- Query the number of on-access antivirus scan policies.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONACCESS_POLICY/count?vstoreId=1

Response:
{
    "data": {
        "count": 35
    },
    "error": {
        "code": 0,
        "description": "0"
```

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```
    }
}
```

2.11.4.4.17 Interface for Querying the Number of On-Access Antivirus Scan Tasks

Function

Query the number of on-access antivirus scan tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_ACCESS_TASK/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of on-access antivirus scan tasks. **Unit:**entry

Example

- Query the number of on-access antivirus scan tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_ON_ACCESS_TASK/count?vstoreId=1

Response:
{
    "data": {
        "count": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.11.4.4.18 Interface for Querying the Number of On-Demand Antivirus Scan Policies

Function

Query the number of on-demand antivirus scan policies.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/ONDEMAND_POLICY/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.
filter	Optional	string	**The value is described as follows:** Character string **Length:**128

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of on-demand antivirus scan policies. **The value is described as follows:** 0..1024

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Example

- Query the number of on-demand antivirus scan policies.

```
Request: GET /deviceManager/rest/210235843710E7000007/ONDEMAND_POLICY/count?vstoreId=1

Response:
{
   "data": {
      "COUNT": 35
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.4.19 Interface for Querying the Number of On-Demand Antivirus Scan Tasks

Function

Query the number of on-demand antivirus scan tasks.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/AV_ON_DEMAND_TASK/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of on-demand antivirus scan tasks. **Unit:**entry

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Example

- Query the number of on-demand antivirus scan tasks.

```
Request: GET /deviceManager/rest/210235843910E6000009/AV_ON_DEMAND_TASK/count?vstoreId=1

Response:
{
    "data": {
        "count": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.4.5 Others

2.11.4.5.1 Interface for Checking Antivirus Server Connection

Function

This interface is used to check antivirus server connection.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/av_server/test_av_server

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Antivirus server name. **Length:**1~127

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Parameter	Mandatory/Optional/Conditional	Type	Description
VENDOR	Mandatory	enum	Antivirus server vendor. **The value is described as follows:** 0: Symantec Protection Engine 1: Symantec Endpoint Protection 2: Trend Micro ServerProtect 3: McAfee VirusScan Enterprise 4: Sophos Endpoint Protection 5: Kaspersky Antivirus Protection 7: OPSWAT MetaDefender ICAP Server 8: Rising Virtualization Security (Storage Safe)
PORT	Mandatory	uint32	Antivirus server port. **The value is described as follows:** The value ranges from 1 to 65535.
IPADDRESS	Mandatory	string	IP address of the antivirus server. **The value is described as follows:** The value can be an IPv4 or IPv6 address. **Length:**63
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1024 **Length:**16 **Note:**This field must be delivered in vStore scenarios.

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Result

N/A

Example

- Checking antivirus server connection.

```
Request: PUT /deviceManager/rest/1016964156/av_server/test_av_server

{
   "vstoreId":"1",
   "PORT": "26810",
   "VENDOR": "0",
   "NAME": "avserver03",
   "IPADDRESS": "45.6.9.99"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.4.5.2 Interface for Exporting Antivirus Agent Software

Function

Export the antivirus agent software.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/export/antivirusAgent

Access Method

GET

Parameters

N/A

Result

N/A

Example

- Download the antivirus agent software.

```
Request: GET /deviceManager/rest/210235843710E7000007/export/antivirusAgent

Response:
   SHVhd2VpIFRlY2hub2xvZ2llc.....
```

2.11.5 dtree

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2.11.5.1 Add

2.11.5.1.1 Interface for Creating a Dtree

Function

This interface is used to create a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Dtree name. **The value is described as follows:** The value contains 1 to 255 characters, only including letters, digits, spaces, and special characters (!\"#&%$'()*+-.;<=>?@[]^_`{|}~). In the CLI, the following characters must be entered in escape mode: "|" indicates "|", "\\" indicates "\", "\q" indicates "?", and "\s" indicates a space. **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTNAME	Conditional	string	Name of the parent file system object. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Length:**1~255 **Note:**PARENTID and PARENTNAME are mutually exclusive.
PARENTTYPE	Optional	enum	Object type of the parent file system. **The value is described as follows:** 40: file system **Default:**40: file system
PARENTID	Conditional	string	ID of the parent file system object. **The value is described as follows:** File system ID. **Note:**PARENTID and PARENTNAME are mutually exclusive.
QUOTASWITCH	Optional	bool	Quota switch. **The value is described as follows:** 0: disabled 1: enabled **Default:**0: disabled
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
path	Optional	string	Full path of the parent directory. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Default:**/ **Length:**1~1023
securityStyle	Optional	enum	Security style supported by a dtree directory. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed
nasLockingPolicy	Optional	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Default:**0: Mandatory

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Parameter	Mandatory/Optional/Conditional	Type	Description
unixPermissions	Optional	string	Permissions of the dtree directory. **The value is described as follows:** The value consists of three digits, where: The first digit refers to the permission of the owner. The second digit refers to the permission of the user group to which the owner belongs. The last digit refers to the permission of everyone else, ranging from 0 to 7, where: 1:"0": no permission. 2:"1": executable. 3:"2": writable. 4:"3": writable and executable. 5:"4": readable. 6:"5": readable and executable. 7:"6": readable and writable. 8:"7": readable, writable, and executable. **Length:**3 **Range:**[0-7]{3}

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 16445: dtree
ID	Mandatory	string	Dtree ID. **The value is described as follows:** -
NAME	Mandatory	string	Dtree name. **The value is described as follows:** -
PARENTNAME	Mandatory	string	Name of the parent file system object. **The value is described as follows:** The value contains only digits, letters, and underscores (_).
PARENTTYPE	Mandatory	enum	Object type ID of the parent file system. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	ID of the parent file system object. **The value is described as follows:** -
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: disabled 1: enabled

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Parameter	Mandatory/ Conditional	Type	Description
QUOTASWITCHSTATUS	Mandatory	enum	Indicates the quota running status. **The value is described as follows:** 0: Off 1: On 2: Initializing 3: --
NEEDINIT	Mandatory	string(bool)	Whether to initialize the dtree. **The value is described as follows:** true: yes false: no **Note:**This field is no longer used.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
path	Mandatory	string	Full path of the parent directory. **The value is described as follows:** The value contains only digits, letters, and underscores (_).

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Parameter	Mandatory/ Conditional	Type	Description
securityStyle	Mandatory	enum	Security style supported by a dtree directory. **The value is described as follows:** 0: Mixed 1: Native 2: NTFS 3: UNIX
unixPermissions	Mandatory	string	Permissions of the dtree directory. **The value is described as follows:** The value consists of three digits, where: The first digit refers to the permission of the owner. The second digit refers to the permission of the user group to which the owner belongs. The last digit refers to the permission of everyone else, ranging from 0 to 7, where: 1:"0": no permission. 2:"1": executable. 3:"2": writable. 4:"3": writable and executable. 5:"4": readable. 6:"5": readable and executable. 7:"6": readable and writable. 8:"7": readable, writable, and executable.

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Example

- Creating a dtree.

```
Request: POST /deviceManager/rest/210235843910E6000009/QUOTATREE
{
    "NAME": "dtree1",
    "PARENTTYPE": "40",
    "PARENTID": "1",
    "QUOTASWITCH": "false",
    "securityStyle": "3"
}

Response:
{
    "data": {
        "ID": "1@4097",
        "NAME": "dtree1",
    "PARENTTYPE": 40,
    "PARENTID": "1",
        "PARENTNAME": "fs1",
    "QUOTASWITCH": "false",
        "QUOTASWITCHSTATUS": "0",
    "path": "/",
        "securityStyle": "3",
    "vstoreId":"0",
        "vstoreName":"System_vStore",
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.5.2 Delete

2.11.5.2.1 Interface for Deleting a Dtree by ID

Function

This interface is used to delete a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

N/A

Example

- Deleting a dtree.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/QUOTATREE/17@4097

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.5.2.2 Interface for Deleting a Dtree by Name

Function

This interface is used to delete a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	ID of the parent object. **The value is described as follows:** File system ID. **Note:**PARENTID and PARENTNAME are mutually exclusive.
PARENTNAME	Conditional	string	Name of the parent object. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Length:**1~255 **Note:**PARENTID and PARENTNAME are mutually exclusive.
NAME	Mandatory	string	Dtree name. **The value is described as follows:** The value contains 1 to 255 characters, only including letters, digits, spaces, and special characters (! \"#&%$'()*+-.;<=>?@[]^_`{|}~). In the CLI, the following characters need to be represented with escape sequences: "|" indicates "|", "\\" indicates "\", "\q" indicates "?", and "\s" indicates a space. **Length:**1~255
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

N/A

Example

- Deleting a dtree.

```
Request: DELETE /deviceManager/rest/2102358439l0E6000009/QUOTATREE?
PARENTID=1&NAME=abc

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.5.3 Modify

2.11.5.3.1 Interface for Modifying Dtree Information by ID

Function

This interface is used to modify a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE/${ID}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	Dtree ID. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Conditional	string	Dtree name. **The value is described as follows:** The value contains only digits, letters, multilingual characters, underscores (_), periods (.), and hyphens (-). **Length:**1~255 **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.
QUOTASWITCH	Conditional	bool	Quota switch. **The value is described as follows:** 0: Off 1: On **Note:**At least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions must be selected.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

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Parameter	Mandatory/Optional/Conditional	Type	Description
securityStyle	Optional	enum	Security style supported by a dtree directory. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 3: Mixed **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.
nasLockingPolicy		enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Default:**0: Mandatory
PARENTID	Conditional	string	ID of the parent object. **The value is described as follows:** File system ID. **Note:**Either PARENTID or PARENTNAME is selected. If PARENTID is specified, PARENTNAME cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTNAME	Conditional	string	Name of the parent object. **The value is described as follows:** The value contains only digits, letters, multilingual characters, and underscores (_). **Note:**Either PARENTID or PARENTNAME is specified. If PARENTID is specified, PARENTNAME cannot be delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
unixPermissions	Optional	string	Permissions of the dtree directory. **The value is described as follows:** The value consists of three digits, where: The first digit refers to the permission of the owner. The second digit refers to the permission of the user group to which the owner belongs. The last digit refers to the permission of everyone else, ranging from 0 to 7, where: 1:"0": No permission. 2:"1": Executable. 3:"2": Writable. 4:"3": Writable and executable. 5:"4": Readable. 6:"5": Readable and executable. 7:"6": Readable and writable. 8:"7": Readable, writable, and executable. **Length:**3 **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.

Result

N/A

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Usage Guidelines

This interface is used to modify dtree information in a file system.

Example

- Modifying a dtree.

```
Request: PUT /deviceManager/rest/210235843910E6000009/QUOTATREE/1@4097
{
   "NAME": "Y",
   "QUOTASWITCH": "0",
   “SECURITYSTYLE”: "2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.5.3.2 Interface for Modifying Dtree Information by Name

Function

This interface is used to modify a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	ID of the parent object. **The value is described as follows:** File system ID. **Note:**PARENTID and PARENTNAME are mutually exclusive.

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Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTNAME	Conditional	string	Name of the parent object. **The value is described as follows:** The value contains only digits, letters, multilingual characters, and underscores (_). **Length:**1~255 **Note:**PARENTID and PARENTNAME are mutually exclusive.
NAME	Conditional	string	Dtree name. **The value is described as follows:** The value contains only digits, letters, multilingual characters, underscores (_), periods (.), and hyphens (-). **Length:**1~255 **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.
oldName	Mandatory	string	Old name of a dtree. **The value is described as follows:** The value contains only digits, letters, multilingual characters, underscores (_), periods (.), and hyphens (-). **Length:**1~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
QUOTASWITCH	Conditional	bool	Quota switch. **The value is described as follows:** 0: Off 1: On **Note:**At least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions must be selected.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.
securityStyle	Conditional	enum	Security style supported by a dtree directory. **The value is described as follows:** 1: Native 2: NTFS 3: UNIX 4: Mixed **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.

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Parameter	Mandatory/Optional/Conditional	Type	Description
unixPermissions	Conditional	string	Permissions of the dtree directory. **The value is described as follows:** The value consists of three digits, where: The first digit refers to the permission of the owner. The second digit refers to the permission of the user group to which the owner belongs. The last digit refers to the permission of everyone else, ranging from 0 to 7, where: 1:"0": No permission. 2:"1": Executable. 3:"2": Writable. 4:"3": Writable and executable. 5:"4": Readable. 6:"5": Readable and executable. 7:"6": Readable and writable. 8:"7": Readable, writable, and executable. **Length:**3 **Note:**Select at least one of NAME, QUOTASWITCH, securityStyle, and unixPermissions.

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Parameter	Mandatory/Optional/Conditional	Type	Description
nasLockingPolicy		enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Default:**0: Mandatory

Result

N/A

Example

- Modifying a dtree.

```
Request: PUT /deviceManager/rest/210235843910E6000009/QUOTATREE
{
        "oldName":"999",
    "PARENTID":"120",
    "NAME": "111",
    "securityStyle":"2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.5.4 Query

2.11.5.4.1 Interface for Batch Querying Dtree Information

Function

This interface is used to batch query basic information about dtrees.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

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Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Object type of the parent file system. **The value is described as follows:** 40: file system
PARENTID	Conditional	string	ID of the parent file system object. **Note:**PARENTID and PARENTNAME are mutually exclusive.
PARENTNAME	Conditional	string	Name of the parent file system object. **Note:**PARENTID and PARENTNAME are mutually exclusive.
filter	Optional	string	Fuzzy query: NAME. Exact query: quotaConfigured.
shareType	Optional	string	Share type: "NFS": NFS share. "CIFS": CIFS share. "null": no share created.

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Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
sort	Optional	string	Sorting condition. **The value is described as follows:** Sorting by NAME is supported.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type. **The value is described as follows:** 16445: QUOTATREE
ID	Mandatory	string	Dtree ID.
NAME	Mandatory	string	Dtree name.
PARENTTYPE	Mandatory	enum	Object type ID of the parent file system. **The value is described as follows:** 40: file system

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	ID of the parent file system object.
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: Off 1: On
QUOTASWITCHSTATUS	Mandatory	enum	Indicates the quota running status. **The value is described as follows:** 0: Off 1: On 2: Initializing 3: --
NEEDINIT	Mandatory	string(bool)	Whether to initialize the dtree. **The value is described as follows:** true: yes false: no **Note:**This field is no longer used.
usedCapacity	Mandatory	string	Capacity used by a dtree. **Note:**This field is not supported in the current version.
shareTypes	Mandatory	array	Share type list: "NFS": NFS share. "CIFS": CIFS share. An empty array indicates that no share is created.
quotaConfigured	Mandatory	bool	Whether the quota is configured.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **Note:**This field must be returned in multi-vStore scenarios.
securityStyle	Mandatory	enum	Security style supported by a dtree directory. **The value is described as follows:** 0: Mixed 1: Native 2: NTFS 3: UNIX
quotaCfgCount	Mandatory	uint32	Number of configured quotas. **The value is described as follows:** 0..8192
replicationCount	Mandatory	uint32	Number of remote replication pairs. **The value is described as follows:** 0..16
dtSnapCount	Mandatory	uint32	Number of snapshots. **The value is described as follows:** 0..4096
nasLockingPolicy	Conditional	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy. **Note:**This parameter is returned only when the security style is Native.

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Example

- Batch querying basic information about dtrees.

```
Request: GET /deviceManager/rest/65789AB65C7136CC98B5/QUOTATREE?
PARENTID=4&range=[0-100]

Response:
{
   "data": [
      {
         "ID": "4097@17",
         "NAME": "Root dtree",
         "NEEDINIT": "false",
         "PARENTID": "4",
         "PARENTTYPE": 40,
         "QUOTASWITCH": "false",
         "QUOTASWITCHSTATUS": "0",
         "TYPE": 16445
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.5.4.2 Interface for Querying Dtree Information by ID

Function

This interface is used to query basic information about a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE/${ID}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	File system ID. **The value is described as follows:** -

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type. **The value is described as follows:** 16445: dtree
ID	Mandatory	string	File system ID. **The value is described as follows:** -
NAME	Mandatory	string	Name. **The value is described as follows:** -
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 40: file system
PARENTID	Mandatory	string	Parent file system ID. **The value is described as follows:** ID of the file system.
PARENTNAME	Mandatory	string	Name of the parent file system. **The value is described as follows:** The value contains only digits, letters, and underscores (_).

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Parameter	Mandatory/ Conditional	Type	Description
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: off 1: on
QUOTASWITCHSTATUS	Mandatory	enum	Quota running status. **The value is described as follows:** 0: off 1: on 2: initializing 3: --
NEEDINIT	Mandatory	string(bool)	Whether to initialize the dtree. **The value is described as follows:** true: yes false: no **Note:**This field is no longer used.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
path	Mandatory	string	Full path of the parent directory.
usedCapacity	Mandatory	string	Capacity used by a dtree. **Note:**This field is not supported in the current version.

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Parameter	Mandatory/ Conditional	Type	Description
shareTypes	Mandatory	array	Share type list: "NFS": NFS share. "CIFS": CIFS share. An empty array indicates that no share is created.
quotaConfigured	Mandatory	bool	Whether the quota is configured.
securityStyle	Mandatory	enum	Security style supported by a dtree directory. **The value is described as follows:** 0: Mixed 1: Native 2: NTFS 3: UNIX
dtreeDirName	Mandatory	string	Dtree directory name.
nasLockingPolicy	Mandatory	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy.

Example

- Querying basic information about a dtree by ID.

```
Request: GET /deviceManager/rest/210235843910E6000009/QUOTATREE/ 4097@17

Response:
{
   "data": {
      "ID": "4097@17",
      "NAME": "Root dtree",
      "NEEDINIT": "false",
      "PARENTID": "4",
      "PARENTTYPE": 40,
      "QUOTASWITCH": "false",
      "QUOTASWITCHSTATUS": "0",
      "TYPE": 16445,
```

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```
        "SECURITYSTYLE": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.11.5.4.3 Interface for Querying Dtree Information by Name

Function

This interface is used to query basic information about a dtree.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTID	Conditional	string	Parent file system ID. **The value is described as follows:** File system ID. **Note:**PARENTID and PARENTNAME are mutually exclusive.
PARENTNAME	Conditional	string	Name of the parent file system. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Length:**1~255 **Note:**PARENTID and PARENTNAME are mutually exclusive.

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Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	Dtree name. **The value is described as follows:** The value contains only digits, letters, underscores (_), periods (.), and hyphens (-).
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Managed object type ID. **The value is described as follows:** 16445: QUOTATREE
ID	Mandatory	string	Dtree ID. **The value is described as follows:** -
NAME	Mandatory	string	Dtree name. **The value is described as follows:** -
PARENTTYPE	Mandatory	enum	Type number of the parent object. **The value is described as follows:** 40: file system

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Parameter	Mandatory/ Conditional	Type	Description
PARENTID	Mandatory	string	Parent file system ID. **The value is described as follows:** ID of the file system.
PARENTNAME	Mandatory	string	Name of the parent file system. **The value is described as follows:** The value contains only digits, letters, and underscores (_). **Note:**Discarded.
QUOTASWITCH	Mandatory	bool	Quota switch. **The value is described as follows:** 0: off 1: on
QUOTASWITCHSTATUS	Mandatory	enum	Quota running status. **The value is described as follows:** 0: off 1: on 2: initializing 3: --
NEEDINIT	Mandatory	string(bool)	Whether to initialize the dtree. **The value is described as follows:** true: yes false: no **Note:**This field is no longer used.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.

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Parameter	Mandatory/ Conditional	Type	Description
vstoreName	Conditional	string	vStore name. **The value is described as follows:** - **Note:**This field must be returned in multi-vStore scenarios.
path	Mandatory	string	Full path of the parent directory.
usedCapacity	Mandatory	string	Capacity used by a dtree. **Note:**This field is not supported in the current version.
shareTypes	Mandatory	array	Share type list: "NFS": NFS share. "CIFS": CIFS share. An empty array indicates that no share is created.
quotaConfigured	Mandatory	bool	Whether the quota is configured.
securityStyle	Mandatory	enum	Security style supported by a dtree directory. **The value is described as follows:** 0: Mixed 1: Native 2: NTFS 3: UNIX
dtreeDirName	Mandatory	string	Dtree directory name.

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Parameter	Mandatory/ Conditional	Type	Description
nasLockingPolicy	Mandatory	enum	NAS lock policy in Native security style. **The value is described as follows:** The value can be "Mandatory" or "Advisory", where: 0:"Mandatory": mandatory lock policy. 1:"Advisory": advisory lock policy.

Example

- Querying basic information about a dtree.

```
Request: GET /deviceManager/rest/210235843910E6000009/QUOTATREE?PARENTID=4&NAME=abc

Response:
{
   "data": {
      "ID": "4097@4",
      "NAME": "abc",
      "NEEDINIT": "false",
      "PARENTID": "4",
      "PARENTTYPE": 40,
      "QUOTASWITCH": "false",
      "QUOTASWITCHSTATUS": "0",
      "TYPE": 16445,
      "SECURITYSTYLE": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.5.4.4 Interface for Querying the Number of Dtrees

Function

This interface is used to query the number of dtrees.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/QUOTATREE/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PARENTTYPE	Optional	enum	Parent object type. **The value is described as follows:** 40: file system
PARENTID	Conditional	string	Parent object ID.
PARENTNAME	Conditional	string	Parent object name.
filter	Optional	string	Fuzzy query: NAME. Exact query: quotaConfigured.
shareType	Optional	string	Share type: "NFS": NFS share. "CIFS": CIFS share. "null": no share created.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried dtrees.

Example

- Querying the number of dtrees.

```
Request: GET /deviceManager/rest/210235843910E6000009/QUOTATREE/count?PARENTID=2

Response:
{
   "data": {
      "COUNT": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.5.5 Others

2.11.6 kerberos

2.11.6.1 Add

2.11.6.1.1 Interface for Adding a Kerberos Realm

Function

Add a Kerberos realm.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1-128 **Note:**This parameter is mandatory for non-default vStores.

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Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255
kdcIP	Mandatory	string	IP address of the KDC server. **The value is described as follows:** The value is a standard IPv4 or IPv6 address.
port	Mandatory	uint32	Listening port number of the KDC server. **The value is described as follows:** The value is an integer ranging from 1 to 65535. **Length:**1~65535
vendor	Mandatory	enum	KDC service provider. **The value is described as follows:** 1: Windows 2: Non_Windows

Result

N/A

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Example

- Add a Kerberos realm.

```
Request: POST /deviceManager/rest/210235843910E6000009/kerberos_realm{
    "vstoreId":"0",
    "name": "testkdc.com",
    "kdcIP": "10.11.11.11",
    "port":"88",
    "vendor": "1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.2 Delete

2.11.6.2.1 Interface for Deleting a Kerberos Realm

Function

Delete a Kerberos realm.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	Tenant ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default tenants.

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Parameter	Mandatory/Optional/Conditional	Type	Description
Name	Mandatory	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255

Result

N/A

Example

- Delete a Kerberos realm.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/kerberos_realm
{
   "vstoreId":"0",
   "name": "testkdc.com"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.6.3 Modify

2.11.6.3.1 Interface for Changing the Kerberos Encryption Type

Function

Change the encryption type supported by Kerberos for a vStore.

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HighRisk

You are about to change the NFS Kerberos encryption type.

This operation will change the encryption type supported by NFS Kerberos of the vStore, which may interrupt services. The 3DES algorithm has security risks.

Suggestion: Before performing this operation, ensure that you want to change the encryption type. If yes, preferentially select AES128 and AES256 algorithms which are more secure and stop service operations to prevent service exceptions caused by service interruption.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_encrypt_types

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
encryptType	Mandatory	string	Encryption type. **The value is described as follows:** The encryption type is AES128. AES256 and DES3 are separated by commas (,). **Length:**1-64
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default vStores.

Result

N/A

Example

- Change the Kerberos encryption type.

```
Request: PUT /deviceManager/rest/210235843910E6000009/kerberos_encrypt_types
{
   "encryptType":"AES128"
```

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```
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.3.2 Interface for Modifying a Kerberos Realm

Function

Modify a Kerberos realm.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default vStores.

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Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255
kdcIP	Optional	string	IP address of the KDC server. **The value is described as follows:** The value is a standard IPv4 or IPv6 address.
port	Optional	uint32	Listening port number of the KDC server. **The value is described as follows:** The value is an integer ranging from 1 to 65535. **Length:**1~65535
vendor	Optional	enum	KDC service provider. **The value is described as follows:** 1: Windows 2: Non_Windows

Result

N/A

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Example

- Modify a Kerberos realm.

```
Request: PUT /deviceManager/rest/210235843910E6000009/kerberos_realm{
   "vstoreId":"0",
    "name": "testkdc.com",
    "kdcIP": "10.11.11.11",
    "port":"88",
    "vendor": "1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.3.3 Interface for Modifying Kerberos LIF Information

Function

Modify the Kerberos service.

HighRisk

You are about to disable the Kerberos service on the LIF.

This operation may interrupt services.

Suggestion: Ensure that you want to perform this operation.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_interface

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	Tenant ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default tenants.

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Parameter	Mandatory/Optional/Conditional	Type	Description
status	Mandatory	enum	LIF service status. **The value is described as follows:** 0:open 1:close **Length:**0-1
lifName	Mandatory	string	LIF name. **The value is described as follows:** The value is a string of 1 to 256 characters. **Length:**1-256
spn	Conditional	string	Service principal name. **The value is described as follows:** The value consists of nfs/, FQDN, @, and the Kerberos realm name. An FQDN contains 1 to 128 characters and cannot contain @#*()=+[]|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. The Kerberos realm name is a string of 1 to 255 characters. It starts with a digit or uppercase letter and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain the following combination: _., ._, and ... **Length:**7-388 **Note:**This parameter is mandatory when the value of status is 0.

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Parameter	Mandatory/Optional/Conditional	Type	Description
adminName	Mandatory	string	Account for logging in to the Kerberos realm. **The value is described as follows:** The value is a string of 1 to 128 characters, excluding @#*()=+ []|;:",<>\/? and control characters. Characters ~!$%^&{}`' are not recommended. **Length:**1-128
passwd	Mandatory	string	Password. **The value is described as follows:** The value is a string of 1 to 32 characters. **Length:**1-32
isEnableOverwriteSameAccount	Optional	bool	Indicates whether to overwrite the machine account. **The value is described as follows:** true: yes false: no **Note:**The default value is false.

Result

N/A

Example

- Modify Kerberos LIF information.

```
Request: PUT /deviceManager/rest/210235843910E6000009/kerberos_interface
{
   "vstoreId":"0",
   "status":0,
   "lifName":"eth0",
   "spn":"huawei.ad53.com",
   "adminName":"huawei",
   "passwd":"Huawei@123",
   "isEnableOverwriteSameAccount":"1"
}

Response: {
    "data": {
```

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```
  },
  "error": {
     "code": 0,
     "description": "0"
  }
}
```

2.11.6.4 Query

2.11.6.4.1 Interface for Querying a Kerberos Realm

Function

Query a Kerberos realm.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
name	Mandatory	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Kerberos realm name.
kdcIP	Mandatory	string	IP address of the KDC server.
port	Mandatory	uint32	Listening port number of the KDC server.
vendor	Mandatory	enum	KDC service provider. **The value is described as follows:** 1: Windows 2: Non_Windows

Example

- Query a Kerberos realm.

```
Request: GET /deviceManager/rest/210235843910E6000009/kerberos_realm

Response: {
    "data": {
        "name": "testkdc.com",
        "kdcIP": "10.11.11.11",
        "port": "88",
        "vendor": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.4.2 Interface for Querying Available Kerberos LIFs in Batches

Function

Query the LIFs that can be used to enable the Kerberos service in batches.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/KERBEROS_LOGICAL_IP

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 1-128 **Length:**1-128 **Note:**This field must be delivered in multi-vStore scenarios.
filter	Optional	string	Query criteria. **Note:**Filtering based on the name is supported.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 pieces of data can be returned in the query result.

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Result

Parameter	Mandatory/ Conditional	Type	Description
lifName	Mandatory	string	Name of an available LIF. **The value is described as follows:** 1-256
id	Mandatory	string	LIF ID.

Example

- Query the LIFs that can be used to enable the Kerberos service in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/KERBEROS_LOGICAL_IP

Response: {
    "data": [
    {
        "lifName":"eth0",
        "id":"245323325",
    }
],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.4.3 Interface for Querying Kerberos LIF Information

Function

Query the Kerberos service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_interface

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
lifName	Mandatory	string	LIF name. **The value is described as follows:** The value is a string of 1 to 256 characters. **Length:**1-256
spn	Optional	string	Service principal name. **The value is described as follows:** The value consists of nfs/, FQDN, @, and the Kerberos realm name. An FQDN contains 1 to 128 characters and cannot contain @#*()=+[]|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. The Kerberos realm name is a string of 1 to 255 characters. It starts with a digit or uppercase letter and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain the following combination: _., ._, and ... **Length:**7-388 **Range:**^nfs/[^@#*()=+\[\]\|;:\",<>\\/?]{1,128}@[A-Z0-9][A-Z0-9._-]{0,255}$

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Parameter	Mandatory/Optional/Conditional	Type	Description
realmName	Optional	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255
vstoreId	Conditional	string	Tenant ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default tenants.

Result

Parameter	Mandatory/Conditional	Type	Description
lifName	Mandatory		LIF name. **The value is described as follows:** The value is a string of 1 to 256 characters.

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Parameter	Mandatory/ Conditional	Type	Description
spn	Mandatory		Service principal name. **The value is described as follows:** The value consists of nfs/, FQDN, @, and the Kerberos realm name. An FQDN contains 1 to 128 characters and cannot contain @#*()=+ []|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. The Kerberos realm name is a string of 1 to 256 characters. It starts with a digit or uppercase letter and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain the following combination: _., ._, and ... **Note:**This parameter must be delivered when the value of status is 0.

Example

- Query Kerberos LIF information.

```
Request: GET /deviceManager/rest/210235843910E6000009/kerberos_interface

Response: {
   "data": [
      {
         "lifName": "eth0",
         "spn": "huawei.ad53.com",

      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.11.6.4.4 Interface for Querying Kerberos LIFs in Batches

Function

Query Kerberos services in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_interface

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
spn	Optional	string	Service principal name. **The value is described as follows:** The value consists of nfs/, FQDN, @, and the Kerberos realm name. An FQDN contains 1 to 128 characters and cannot contain @#*()=+[]|;:",<>\/? or control characters. Characters such as ~!$%^&{}`' are not recommended. The Kerberos realm name is a string of 1 to 255 characters. It starts with a digit or uppercase letter and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain the following combination: _., ._, and ... **Length:**7-388 **Note:**Either realmName or spn is delivered, or neither is delivered.

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Parameter	Mandatory/Optional/Conditional	Type	Description
realmName	Optional		Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter, and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255 **Note:**Either realmName or spn is delivered, or neither is delivered.
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	Tenant ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default tenants.

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Result

Parameter	Mandatory/ Conditional	Type	Description
lifName	Mandatory		LIF name.
spn	Mandatory		Service principal name.

Example

- Query Kerberos LIF information.

```
Request: GET /deviceManager/rest/210235843910E6000009/kerberos_interface

Response: {
   "data": [
      {
         "lifName": "eth0",
         "spn": "huawei.ad53.com",

      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.6.4.5 Interface for Querying Kerberos Realms in Batches

Function

Query Kerberos realms in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 100 results can be returned.
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
name	Mandatory	string	Kerberos realm name.
kdcIP	Mandatory	string	IP address of the KDC server.
port	Mandatory	uint32	Listening port number of the KDC server.
vendor	Mandatory	enum	KDC service provider. **The value is described as follows:** 1: Windows 2: Non_Windows

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Example

- Query Kerberos realms in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/kerberos_realm

Response: {
   "data": {
      "name": "testkdc.com",
      "kdcIP": "10.11.11.11",
      "port": "88",
      "vendor": "1"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.6.4.6 Interface for Querying the Kerberos Encryption Type

Function

Query the encryption type supported by Kerberos in a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_encrypt_types

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default vStores.

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Result

Parameter	Mandatory/ Conditional	Type	Description
encryptType	Mandatory		Encryption type. **The value is described as follows:** The encryption type is AES128. AES256 and DES3 are separated by commas (,).

Example

- Query the Kerberos encryption type.

```
Request: GET/deviceManager/rest/210235843910E6000009/kerberos_encrypt_types

Response: {
   "data": {
      "encryptType":"AES128"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.6.4.7 Interface for Querying the Number of Kerberos LIFs with Services Enabled

Function

Query the number of Kerberos LIFs with services enabled.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_interface/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default vStores.
realmName	Mandatory	string	Kerberos realm name. **The value is described as follows:** The value is a string of 1 to 255 characters. The value starts with a digit or uppercase letter and consists of digits, uppercase letters, and the following characters: ._-. The value cannot contain _., ._, or .., and cannot contain only digits or end with a hyphen (-) or underscore (_). **Length:**1-255

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory		Number of Kerberos LIFs with services enabled.

Example

- Query the number of Kerberos LIFs with services enabled.

```
Request: GET/deviceManager/rest/210235843910E6000009/kerberos_interface/count?realmName=test

Response: {
    "data": {
        "count":0
    },
    "error": {
```

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```
    "code": 0,
    "description": "0"
  }
}
```

2.11.6.4.8 Interface for Querying the Number of Kerberos Realms

Function

Query the number of Kerberos realms.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/kerberos_realm/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	Tenant ID. **The value is described as follows:** 0..1023 **Note:**This parameter is mandatory for non-default tenants.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of Kerberos realms.

Example

- Query the number of Kerberos realms.

```
Request: GET /deviceManager/rest/210235843910E6000009/kerberos_realm/count

Response: {
  "data": {
    "count": 1
  },
  "error": {
    "code": 0,
    "description": "0"
```

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```
    }
}
```

2.11.6.4.9 Interface for Querying the Number of LIFs for Enabling the Kerberos Service

Function

Query the number of LIFs that can be used to enable the Kerberos service.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/KERBEROS_LOGICAL_IP/count

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId		string	vStore ID. **The value is described as follows:** 1-128 **Length:**1-128 **Note:**This field must be delivered in multi-vStore scenarios.

Result

Parameter	Mandatory/Conditional	Type	Description
count	Mandatory	uint32	Number of LIFs. **The value is described as follows:** 0..1024

Example

- Query the number of LIFs that can be used to enable the Kerberos service.

```
Request: GET /deviceManager/rest/210235843910E6000009/KERBEROS_LOGICAL_IP/count

Response: {
   "data": {
      "count":0
```

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```
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.6.5 Others

2.11.7 global_secure_compliance_clock

2.11.7.1 Add

2.11.7.2 Delete

2.11.7.3 Modify

2.11.7.4 Query

2.11.7.4.1 Interface for Querying the Global Security Compliance Clock

Function

Query the global security compliance clock.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/global_secure_compliance_clock

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
wormGlobalClock	Mandatory	string(uint64)	Global security compliance clock. **Unit:**Seconds **Note:**The value is the number of seconds elapsed since 00:00:00 on January 1, 1970 to the secure clock time.

Example

- Query the global security compliance clock.

```
Request: GET/deviceManager/rest/210235843910E6000009/global_secure_compliance_clock

Response:
{
   "data": {
      "wormGlobalClock": "18446612149339932304"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.7.5 Others

2.11.7.5.1 Interface for Initializing the Global Security Compliance Clock

Function

Initialize the global security compliance clock.

HighRisk

You are about to initialize the secure regulatory clock of this system. This procedure can be performed only once on this system.

Suggestion: Before performing this operation, ensure that the time you set is correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/global_secure_compliance_clock

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
wormGlobalClock	Mandatory	string(uint64)	Secure clock time to be set. **Unit:**Seconds **Note:**The value is the number of seconds elapsed since 00:00:00 on January 1, 1970 to the secure clock time to be set.

Result

N/A

Example

- Initialize the global security compliance clock.

```
Request: PUT /deviceManager/rest/210235843910E6000009/global_secure_compliance_clock
{
"wormGlobalClock": "0"
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.8 worm_legal_hold

2.11.8.1 Add

2.11.8.1.1 Interface for Creating a Legal-Hold Task

Function

Create a task of setting or unsetting a litigation hold task.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_LEGALHOLD

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
litigationName	Mandatory	string	Litigation name. **Length:**1~255
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
fileSystemName	Conditional	string	File system name. **Length:**1~255 **Note:**File system name, which is mutually exclusive with the file system ID.
path	Mandatory	string	File or path where a litigation hold task is to be set or unset. **Length:**1~4096
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.
operation	Mandatory	uint8	Operation type. **The value is described as follows:** 1:"set": creates a litigation hold task. 0:"unset": cancels a litigation hold task.

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Result

Parameter	Mandatory/ Conditional	Type	Description
fileSystemId	Mandatory	uint32	File system ID. **The value is described as follows:** 1..65535
fileSystemName	Mandatory	string	File system name.

Example

- Create a litigation hold task.

```
Request: POST /deviceManager/rest/ST000000000000000130/WORM_FILE_LEGALHOLD{
    "litigationName":"L2",
    "path":"/",
    "fileSystemId":"1",
    "vstoreId":"1",
    "operation":1
}

Response: {
    "data": {
        "fileSystemId": "1",
        "fileSystemName": "fs1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.8.2 Delete

2.11.8.2.1 Interface for Deleting a Legal-Hold Task

Function

Delete a litigation hold task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_LEGALHOLD

Access Method

DELETE

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
fileSystemName	Conditional	string	File system name. **Length:**1~255 **Note:**File system name, which is mutually exclusive with the file system ID.
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.
taskID	Mandatory	string(uint64)	Task ID. **The value is described as follows:** 0..18446744073709551615

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemId	Mandatory	uint32	File system ID. **The value is described as follows:** 1..65535
fileSystemName	Mandatory	string	File system name.

Example

- Delete a litigation hold task.

```
Request: DELETE /deviceManager/rest/ST000000000000000130/WORM_FILE_LEGALHOLD?
fileSystemId=1&taskID=4294967809&vstoreId=1
```

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```
Response: {
    "data": {
        "fileSystemId": "1",
        "fileSystemName": "fs1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.11.8.3 Modify

2.11.8.4 Query

2.11.8.4.1 Interface for Querying Legal-Hold Tasks

Function

Query the litigation hold task list and details about a specific litigation hold task.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_LEGALHOLD

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
fileSystemName	Conditional	string	File system name. **Length:**1~255 **Note:**File system name, which is mutually exclusive with the file system ID.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**The field must be delivered in multi-vStore scenarios.
range	Optional	string	Query range.
taskID	Optional	string(uint64)	Task ID. **The value is described as follows:** 0..18446744073709551615

Result

Parameter	Mandatory/Conditional	Type	Description
taskID	Mandatory	string(uint64)	Task ID. **The value is described as follows:** 0..18446744073709551615
litigationName	Mandatory	string	Litigation name.
fileSystemId	Mandatory	uint32	File system ID. **The value is described as follows:** 1..65535
fileSystemName	Mandatory	string	File system name.
path	Mandatory	string	File or path where a litigation hold task is set or unset.
dealOkFileNum	Mandatory	uint32	Number of files that are successfully processed. **The value is described as follows:** 0..4294967295

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Parameter	Mandatory/ Conditional	Type	Description
dealFailFileNum	Mandatory	uint32	Number of files that fail to be processed. **The value is described as follows:** 0..4294967295
operation	Mandatory	uint8	Operation type. **The value is described as follows:** 1:"set": creates a litigation hold task. 0:"unset": cancels a litigation hold task.
status	Mandatory	uint8	Task status. **The value is described as follows:** 0: initialized 1: running 2: completed 3: faulty 4: being deleted

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Parameter	Mandatory/ Conditional	Type	Description
statusDetails	Mandatory	enum	Detailed information about the status of the litigation hold task. 0:No Error: No error occurs. 1:Internal Error: An internal error occurs. 2:Maximum Number of File Litigations Reached: The litigation number of the file reaches the maximum. 3:Maximum Number of File System Litigations Reached: The litigation number of the file system reaches the maximum. 4:Storage Pool Fault: The storage pool is faulty. 5:FILE OR DIR Full Path Length Out Of Range: The length of the full path of the file or directory exceeds the upper limit. **The value is described as follows:** 0: No Error; 1:Internal Error; 2: Maximum Number of File Litigations Reached; 3: Maximum Number of File System Litigations Reached; 4: Storage Pool Fault; 5: FILE OR DIR Full Path Length Out Of Range.

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Example

- Query a litigation hold task.

```
Request: GET /deviceManager/rest/ST000000000000000244/WORM_FILE_LEGALHOLD?
fileSystemId=2&range=[0-100]

Response: {
   "data": [
      {
         "operation": "1",
         "litigationName": "lttest4",
         "fileSystemId": "2",
         "fileSystemName": "fs1",
         "taskID": "8589934848",
         "path": "/",
         "status": "2",
         "dealOkFileNum": "1",
         "dealFailFileNum": "0",
         "statusDetails": "0"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.8.5 Others

2.11.9 worm_fingerprint

2.11.9.1 Add

2.11.9.1.1 Interface for Creating a WORM File Fingerprint

Function

Create a WORM file fingerprint.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_FINGERPRINT

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemName	Conditional	string	File system name, which is mutually exclusive with the file system ID. **Length:**1~255 **Note:**Name of a file system.
path	Mandatory	string	Specifies the file path. **Length:**4096
fingerprintScope	Mandatory	enum	File fingerprint range. **The value is described as follows:** 0: file data and file metadata. 1: file data. 2: file metadata.
algorithm	Mandatory	enum	Algorithm. **The value is described as follows:** 0:SHA-256 **Note:**Fingerprint algorithm.
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.

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Result

Parameter	Mandatory/ Conditional	Type	Description
fileSystemId	Mandatory	uint32	File system ID. **The value is described as follows:** 0..65535
fileSystemName	Mandatory	string	Name of a file system.
path	Mandatory	string	Specifies the file path.
fingerprintScope	Mandatory	enum	File fingerprint range. **The value is described as follows:** 0: file data and file metadata. 1: file data. 2: file metadata.
algorithm	Mandatory	enum	Algorithm. **The value is described as follows:** 0:SHA-256
vstoreId	Mandatory	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.

Example

- Create a WORM file signature.

```
Request: POST /deviceManager/rest/ST00000000000000032/WORM_FILE_FINGERPRINT
{
   "path":"/file1",
   "fingerprintScope":"1",
   "algorithm":"0",
   "fileSystemId":"14",
    "vstoreId": "2",
}

Response: {
   "data": {
      "fileSystemId": "14",
      "fileSystemName": "FS1234",
      "path": "/file1",
      "fingerprintScope": "1",
      "algorithm": "0",
      "vstoreId": "2"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
  }
}
```

2.11.9.2 Delete

2.11.9.2.1 Interface for Deleting a WORM File Fingerprint

Function

Delete the WORM file fingerprint.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_FINGERPRINT

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
fileSystemName	Conditional	string	Name of a file system. **Length:**1~255 **Note:**File system name, which is mutually exclusive with the file system ID.
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
taskID	Mandatory	string(uint64)	Task ID.

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Result

N/A

Example

- Delete the WORM file signature.

```
Request: DELETE /deviceManager/rest/ST00000000000000032/WORM_FILE_FINGERPRINT?
vstoreId=2&fileSystemName=FS1234&taskID=6553600

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.9.3 Modify

2.11.9.4 Query

2.11.9.4.1 Interface for Batch Querying WORM File Fingerprints

Function

Query WORM file fingerprint information in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/WORM_FILE_FINGERPRINT

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemName	Conditional	string	Name of a file system. **Length:**1~255 **Note:**File system name, which is mutually exclusive with the file system ID.
range	Optional	string	Range.

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Parameter	Mandatory/Optional/Conditional	Type	Description
fileSystemId	Conditional	uint32	File system ID. **The value is described as follows:** 1..65535 **Note:**File system ID, which is mutually exclusive with the file system name.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be delivered in multi-vStore scenarios.
taskID	Optional	string(uint64)	Task ID.

Result

Parameter	Mandatory/Conditional	Type	Description
fileSystemName	Mandatory	string	Name of a file system.
taskStatus	Mandatory	enum	Task status. **The value is described as follows:** 0: waiting 1: running 2: abnormal 3: finished
dataFingerprint	Mandatory	string	Data fingerprint.
metadataFingerprint	Mandatory	string	Metadata fingerprint.
startTime	Mandatory	uint64	Specifies when the task started.
finishTime	Mandatory	uint64	Specifies when the task ended.
fileType	Mandatory	string	File type. **The value is described as follows:** 0:Regular;1:Worm;2:Worm Append;

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Parameter	Mandatory/ Conditional	Type	Description
fileSize	Mandatory	uint64	File size **Unit:**bytes
fileChangeTime	Mandatory	uint64	Time when a file is modified.
fingerprintScope	Mandatory	enum	File fingerprint range. **The value is described as follows:** 0: file data and file metadata 1: file data 2: file metadata
path	Mandatory	string	Specifies the file path.
algorithm	Mandatory	enum	Algorithm. **The value is described as follows:** 0:SHA-256
fileModificationTime	Mandatory	uint64	Time when a file is modified.
fileCreateTime	Mandatory	uint64	File creation time.
vstoreId	Conditional	string	vStore ID. **Note:**This field must be returned in multi-vStore scenarios.
fileSystemId	Mandatory	uint32	File system ID. **The value is described as follows:** 1..65535
fileUserId	Mandatory	uint32	User ID. **The value is described as follows:** 0..4294967295
fileGroupId	Mandatory	uint32	User group ID. **The value is described as follows:** 0..4294967295
fileAccessTime	Mandatory	uint64	File protection period.
taskID	Mandatory	string(uint64)	Task ID.

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Example

- Query the signature of a WORM file.

```
Request: GET /deviceManager/rest/ST000000000000000130/WORM_FILE_FINGERPRINT?
fileSystemId=90

Response: {
   "data": [
      {
         "fileSystemId": "14",
         "vstoreId": "0",
         "taskID": "6553600",
         "fileSystemName": "FS1234",
         "taskStatus": "3",
         "metadataFingerprint":
"a540e04042a8ffe06ca700db2f0e6400caf46c489d8b1edc1745114b28adda6e",
         "dataFingerprint":
"e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855",
         "fingerprintScope": "0",
         "algorithm": "0",
         "path": "/file1",
         "fileType": "0",
         "fileUserId": "0",
         "fileGroupId": "0",
         "fileSize": "0",
         "fileChangeTime": "1640062192",
         "fileModificationTime": "1640062192",
         "fileCreateTime": "1640062192",
         "fileAccessTime": "1640062192",
         "startTime": "1640062269",
         "finishTime": "1640062269"
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.11.9.5 Others

2.12 vStore management

2.12.1 vstore

2.12.1.1 Add

2.12.1.1.1 Interface for Batch Creating vStore Associations

Function

Create vStore associations in batches.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/associate/batch

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023 **Length:**1~4
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 216: storage pool
associateObjID	Conditional	string	Associated object ID. **The value is described as follows:** FC port ID or storage pool ID. **Note:**None.
associateObjName	Optional	string	Associated object name. **The value is described as follows:** The value is a string of 1 to 255 characters. **Length:**255 **Note:**None.

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Result

Parameter	Mandatory/ Conditional	Type	Description
id	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 216: storage pool
associateObjID	Mandatory	string	Associated object ID. **The value is described as follows:** FC port ID or storage pool ID.
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value is a string of 1 to 255 characters.

Example

- Add the association between the vStore and FC ports in batches.

```
Request: POST  /deviceManager/rest/210235843910E6000009/vstore/associate/batch
[{
    "ID": "1",
    "associateObjType": 212,
    "associateObjID": "562949954536704"
},{
    "ID": "1",
    "associateObjType": 212,
    "associateObjID": "562949954536705"
}]
Response:
{
    "data": [
        {
            "ID": "1",
            "associateObjID": "562949954536704",
            "associateObjType": "212",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        },
        {
```

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```
            "ID": "1",
            "associateObjID": "562949954536705",
            "associateObjType": "212",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Add the association between the vStore and storage pools in batches.


```
Request: POST  /deviceManager/rest/210235843910E6000009/vstore/associate/batch
[{
    "ID": "1",
    "associateObjType": 216,
    "associateObjID": "0"
}]
Response:
{
    "data": [
        {
            "ID": "1",
            "associateObjID": "0",
            "associateObjType": "216",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.12.1.1.2 Interface for Creating a vStore

Function

This interface is used to create a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
NAME	Mandatory	string	vStore name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~256
DESCRIPTION	Optional	string	Description. **Length:**0~255
ID	Optional	uint32	vStore ID. **The value is described as follows:** The value ranges from 1 to 1023.
nasCapacityQuota	Optional	uint64	Capacity quota of the NAS. **The value is described as follows:** 1: The value ranges from 2097152 to 18446744073709551614 sectors. 2: The value 0 indicates that there is no quota limit. **Note:**If this parameter is not delivered, the NAS quota of a vStore is unlimited by default.

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Result

Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16442: vStore
ID	Mandatory	string	vStore ID. **The value is described as follows:** The value ranges from 1 to 1023.
NAME	Mandatory	string	vStore name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 53: Initializing
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value consists of a maximum of 255 characters.
nasCapacityQuota	Mandatory	uint64	Capacity quota of the NAS. **The value is described as follows:** 1: The value ranges from 2097152 to 1844674407370955161 4 sectors. 2: 0 indicates that there is no quota limit.

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Example

- Creating a vStore.

```
Request: POST /deviceManager/rest/210235843710E7000007/vstore
{
   "NAME": "vStore009",
   "DESCRIPTION": "this is a vstore"
}

Response: {
   "data": {
      "DESCRIPTION": "this is a vstore",
      "ID": "9",
      "NAME": "vStore009",
      "RUNNINGSTATUS": "53",
      "TYPE": 16442,
      "nasCapacityQuota": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.1.2 Delete

2.12.1.2.1 Interface for Batch Deleting vStore Associations

Function

Delete vStore associations in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/associate/batch

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023

Parameter	Mandatory/Optional/Conditional	Type	Description
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 216: storage pool
associateObjID	Conditional	string	Associated object ID. **The value is described as follows:** FC port ID or storage pool ID. **Note:**None.
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value contains 1 to 255 characters. **Length:**255 **Note:**None.

Result

Parameter	Mandatory/Conditional	Type	Description
id	Mandatory	string	vStore ID. **The value is described as follows:** 0..1023
associateObjType	Mandatory	enum	Associated object type. **The value is described as follows:** 212: Fibre Channel port 216: storage pool
associateObjID	Mandatory	string	Associated object ID. **The value is described as follows:** FC port ID or storage pool ID.

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Parameter	Mandatory/ Conditional	Type	Description
associateObjName	Conditional	string	Associated object name. **The value is described as follows:** The value contains 1 to 255 characters.

Example

- Remove the association between the vStore and FC ports in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/vstore/associate/batch
[{
   "ID": "1",
   "associateObjType": 212,
   "associateObjID": "562949954536704"
},{
   "ID": "1",
   "associateObjType": 212,
   "associateObjID": "562949954536705"
}]
Response:
{
   "data": [
      {
         "ID": "1",
         "associateObjID": "562949954536704",
         "associateObjType": "212",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      },
      {
         "ID": "1",
         "associateObjID": "562949954536705",
         "associateObjType": "212",
         "error": {
            "code": 0,
            "description": "",
            "suggestion": ""
         }
      }
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Remove the association between the vStore and storage pools in batches.

```
Request: DELETE /deviceManager/rest/210235843910E6000009/vstore/associate/batch
[{
   "ID": "1",
   "associateObjType": 216,
   "associateObjID": "0"
}]
Response:
{
   "data": [
```

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```
        {
            "ID": "1",
            "associateObjID": "0",
            "associateObjType": "216",
            "error": {
                "code": 0,
                "description": "",
                "suggestion": ""
            }
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.12.1.2.2 Interface for Deleting a vStore

Function

This interface is used to delete a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/${id}

Access Method

DELETE

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Optional	string	vStore ID. **The value is described as follows:** The value ranges from 1 to 1023.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~256

Result

N/A

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Example

- Deleting a vStore.

```
Request: DELETE /deviceManager/rest/210235843710E7000007/vstore/1

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.1.3 Modify

2.12.1.3.1 Interface for Modifying vStore Information

Function

This interface is used to modify vStore information.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/${id}

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	vStore ID. **The value is described as follows:** The value ranges from 1 to 1023.
NAME	Optional	string	Name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.). **Length:**1~256
DESCRIPTION	Optional	string	Description. **Length:**0~255

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Parameter	Mandatory/Optional/Conditional	Type	Description
nasCapacityQuota	Optional	uint64	Capacity quota of the NAS. **The value is described as follows:** 1: The value ranges from 2097152 to 18446744073709551614 sectors. 2: 0 indicates that there is no quota limit.

Result

N/A

Example

- Modifying vStore information.

```
Request: PUT /deviceManager/rest/210235843710E7000007/vstore/1
{
   "DESCRIPTION": "123456"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.1.4 Query

2.12.1.4.1 Interface for Querying the Number of vStores

Function

This interface is used to query the number of vStores.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/count

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
filter	Optional	string	Query criteria. **The value is described as follows:** Parameters NAME, ID, and RUNNINGSTATUS are supported.

Result

Parameter	Mandatory/Conditional	Type	Description
COUNT	Mandatory	string(uint32)	Number of queried vStores.

Example

- Querying the number of vStores.

```
Request: GET /deviceManager/rest/210235843910E6000009/vstore/count

Response:
{
   "data": {
      "COUNT": "10"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.1.4.2 Interface for Querying vStore Information

Function

This interface is used to query basic information about a vStore.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore/${id}

Access Method

GET

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	vStore ID. **The value is described as follows:** The value ranges from 0 to 1023.

Result

Parameter	Mandatory/Conditional	Type	Description
TYPE	Mandatory	enum	Type number of the managed object. **The value is described as follows:** 16442: vStore.
ID	Mandatory	string	vStore ID. **The value is described as follows:** The value ranges from 0 to 1023.
NAME	Mandatory	string	vStore name. **The value is described as follows:** The value contains letters, digits, underscores (_), hyphens (-), and periods (.).
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: normal. 53: initializing.
DESCRIPTION	Mandatory	string	Description. **The value is described as follows:** The value consists of a maximum of 255 characters.

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Parameter	Mandatory/ Conditional	Type	Description
fileSystemCapacity	Mandatory	uint64	Configured capacity of the file system.
fileSystemUsedCapacity	Mandatory	uint64	Used capacity of the file system.
fileSystemUnUsedCapacity	Mandatory	uint64	Unused capacity of the file system.
lunCount	Mandatory	uint32	LUN quantity.
lunTotalCapacity	Mandatory	uint64	Total LUN capacity.
fileSystemCount	Mandatory	uint32	File system quantity.
unmappedLunCount	Mandatory	uint32	Quantity of unmapped LUNs.
mappedLunCount	Mandatory	uint32	Quantity of mapped LUNs.
mappedLunTotalCapacity	Mandatory	uint64	Total capacity of mapped LUNs.
unmappedLunTotalCapacity	Mandatory	uint64	Total capacity of unmapped LUNs.
auditLogStrategyEnabled	Mandatory	bool	Whether the audit log policy is configured. **The value is described as follows:** false: No true: Yes
metroCount	Mandatory	uint32	Number of vStore pairs to which the current vStore is added. **The value is described as follows:** 0 or 1.
RMCOUNT	Mandatory	uint32	Number of remote replication vStore pairs to which the current vStore is added. **The value is described as follows:** 0..65536

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Parameter	Mandatory/ Conditional	Type	Description
nasCapacityQuota	Mandatory	uint64	Capacity quota of the NAS. **The value is described as follows:** 1: The value ranges from 2097152 to 1844674407370955161 4. 2: The value 0 indicates that there is no quota limit. **Unit:**Sector
nasFreeCapacityQuota	Mandatory	uint64	Remaining capacity quota of the NAS. **The value is described as follows:** The value ranges from 0 to 1844674407370955161 4. **Unit:**Sector **Note:**-1 indicates an invalid value.

Example

- Querying basic information about a vStore.

```
Request: GET /deviceManager/rest/210235843710E7000007/vstore/1

Response: {
   "data": {
      "DESCRIPTION": "",
      "ID": "1",
      "RUNNINGSTATUS": "1",
      "auditLogStrategyEnabled": false,
      "fileSystemCapacity": "0",
      "fileSystemCount": "0",
      "fileSystemUnUsedCapacity": "0",
      "fileSystemUsedCapacity": "0",
      "lunCount": "0",
      "lunTotalCapacity": "0",
      "mappedLunCount": "0",
      "mappedLunTotalCapacity": "0",
      "unmappedLunCount": "0",
      "unmappedLunTotalCapacity": "0",
      "NAME": "ppp",
      "TYPE": 16442,
      "metroCount": "0",
      "RMCOUNT": "1",
      "nasCapacityQuota": "419430400",
      "nasFreeCapacityQuota": "419430400"
   },
```

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```
  "error": {
    "code": 0,
    "description": "0"
  }
}
```

2.12.1.5 Others

2.12.2 hyper_metro_vstore_pair

2.12.2.1 Add

2.12.2.1.1 Interface for Creating a vStore Pair

Function

This interface is used to create a vStore pair.

HighRisk

You are about to create a NAS HyperMetro vStore pair for the vStore. This operation may interrupt services of the local non-HyperMetro file systems of the vStore. Suggestion: Ensure that the HyperMetro relationship will be configured for all file systems of the vStore.
You are about to create a remote replication vStore pair. If you select "Synchronize Share and Authentication" and "Synchronize Network Configuration", all configurations will be synchronized. As a result, the IP addresses and domain names for accessing the primary and secondary vStores are the same. Ensure that the IP addresses of the primary and secondary vStores cannot be activated at the same time. Suggestion: Before performing this operation, ensure that the selected primary and secondary resources and the parameters are correct.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore_pair

Access Method

POST

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
PREFERREDMODE	Optional	enum	Preferred site switchover mode. **The value is described as follows:** 0: consistent with the active resource 1: manual **Default:**0: consistent with the active resource **Note:**Deleted.
PREFERREDSITE	Conditional	enum	Preferred site. **The value is described as follows:** 0: switching to the local site 1: switching to the remote site **Note:** This field must be delivered when the value of the PREFERREDMODE parameter is 1. Deleted.
DOMAINID	Conditional	string(uint64)	HyperMetro domain ID. **Note:**This parameter is mandatory when REPTYPE is set to 1.
LOCALVSTOREID	Mandatory	string(uint64)	Local vStore ID.
REMOTEVSTOREID	Mandatory	string(uint64)	Remote vStore ID.
REMOTEDEVICEID	Conditional	uint32	Remote device ID. **The value is described as follows:** 0..4294967295 **Note:**When the value of REPTYPE is 2, this parameter is mandatory.

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Parameter	Mandatory/Optional/Conditional	Type	Description
cmo_identity_preserve	Optional	bool	Whether to synchronize shared authentication information. **The value is described as follows:** Yes/No
REPTYPE	Mandatory	enum	Type of the copied object. **The value is described as follows:** 1: HyperMetro 2: remote replication
isNetworkSync	Optional	bool	Whether to synchronize network configurations. **The value is described as follows:** Yes/No

Result

Parameter	Mandatory/Conditional	Type	Description
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 25: Unsynchronized 35: Invalid 93: Force started
DOMAINID	Conditional	string	HyperMetro domain ID.
DOMAINNAME	Conditional	string	HyperMetro domain name.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: connected 2: disconnected

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Parameter	Mandatory/ Conditional	Type	Description
CONFIGSTATUS	Mandatory	string	Configuration status. **The value is described as follows:** 0: Normal 1: Synchronizing 2: To be synchronized **Note:**This field is returned for NAS HyperMetro.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
LOCALVSTOREID	Mandatory	string	Local vStore ID.
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
LOCALVSTORENAME	Mandatory	string	Local vStore name.
REMOTEVSTORENAME	Mandatory	string	Remote vStore name.
ID	Mandatory	string	vStore pair ID.
access	Conditional	enum	Access permission. **The value is described as follows:** 1: access forbidden 2: read-only 3: read/write
portStatus	Conditional	enum	Working status of the local logical port of a vStore pair. **The value is described as follows:** 1: connected 2: to work

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Parameter	Mandatory/ Conditional	Type	Description
cmo_identity_preserve	Conditional	bool	Indicates whether to enable the identity retention mode. **The value is described as follows:** 0: no 1: yes
ipWorkMode	Mandatory	enum	IP working mode of a vStore pair. **The value is described as follows:** 0: no working mode 1: load balancing working mode 2: preferred working mode
isLocalPrefer	Mandatory	enum	Whether the local end is the preferred end. **The value is described as follows:** 0: carefree role selection 1: non-preferred site 2: preferred site
isNetworkSync	Conditional	bool	Whether to synchronize network configurations. **The value is described as follows:** 0: no 1: yes

Example

- Creating a vStore pair.

```
Request: POST /deviceManager/rest/210235982510G2000038/vstore_pair
{
    "DOMAINID":"94dbda5f2e9e0101",
    "LOCALVSTOREID":"1",
    "REMOTEVSTOREID":"1",
    "REPTYPE":"1",
    "PREFERREDMODE":"0"
  }

Response: {
   "data": {
```

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```
        "CONFIGSTATUS": "1",
        "DOMAINID": "94dbda5f2e9e0101",
        "DOMAINNAME": "fs_HyperMetroDomain",
        "HEALTHSTATUS": "1",
        "ID": "210094dbda5f2e9e0000000600000000",
        "LINKSTATUS": "1",
        "LOCALVSTOREID": "1",
        "LOCALVSTORENAME": "hc_vst",
        "REMOTEVSTOREID": "1",
        "REMOTEVSTORENAME": "hc_vst",
        "REPTYPE": "1",
        "RUNNINGSTATUS": "1",
        "TYPE": 156,
        "ipWorkMode": "1",
        "isLocalPrefer": "0"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


- Create a remote replication vStore pair.


```
Request: POST /deviceManager/rest/210235982510G2000038/vstore_pair
{
     "LOCALVSTOREID":"2",
     "REMOTEVSTOREID":"2",
     "REPTYPE":"2",
     "PREFERREDMODE":"0",
     "REMOTEDEVICEID":"0"
  }

Response: {
    "data": {
        "CONFIGSTATUS": "1",
        "HEALTHSTATUS": "1",
        "ID": "210094dbda5f2e9e0000000600000003",
        "LINKSTATUS": "1",
        "LOCALVSTOREID": "2",
        "LOCALVSTORENAME": "rm_vst",
        "REMOTEDEVICEID": "0",
        "REMOTEDEVICENAME": "Huawei.Storage",
        "REMOTEDEVICESN": "66556678998778966333",
        "REMOTEVSTOREID": "2",
        "REMOTEVSTORENAME": "rm_vst",
        "REPTYPE": "2",
        "ROLE": "1",
        "RUNNINGSTATUS": "1",
        "TYPE": 156,
        "access": "1",
        "cmo_identity_preserve": "1",
        "ipWorkMode": "0",
        "isLocalPrefer": "0",
        "isNetworkSync": "0",
        "portStatus": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.12.2.2 Delete

2.12.2.3 Modify

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2.12.2.4 Query

2.12.2.4.1 Interface for Batch Querying vStore Pair Information

Function

This interface is used to batch query vStore pairs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore_pair

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
range	Optional	string	Query range. **The value is described as follows:** Query range: [i-j]. The "range" includes objects that are subscripted in sequence from i to j–1 in the query result. The objects are used for pagination query of data. **Note:**A maximum of 10000 results can be returned.
filter	Optional	string	Query criteria. **The value is described as follows:** Query by ID is supported.
REPTYPE	Optional	enum	Type of a vStore pair. **The value is described as follows:** 1: HyperMetro; 2: remote replication

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Result

Parameter	Mandatory/ Conditional	Type	Description
CONFIGSTATUS	Mandatory	string(enum)	Configuration status. **The value is described as follows:** 0: Normal 1: Synchronizing 2: To be synchronized
DOMAINID	Mandatory	string	HyperMetro domain ID.
DOMAINNAME	Mandatory	string	HyperMetro domain name.
HEALTHSTATUS	Mandatory	string(enum)	Health status. **The value is described as follows:** 0: Unknown 1: Normal 2: Faulty
ID	Mandatory	string	vStore pair ID.
LINKSTATUS	Mandatory	string(enum)	Link status. **The value is described as follows:** 1: Connected 2: Not connected
LOCALVSTOREID	Mandatory	string	Local vStore ID.
LOCALVSTORENAME	Mandatory	string	Local vStore name.
REMOTEVSTOREID	Mandatory	string	Remote vStore ID.
REMOTEVSTORENAME	Mandatory	string	Remote vStore name.
RUNNINGSTATUS	Mandatory	string(enum)	Running status. **The value is described as follows:** 1: Normal 25: Unsynchronized 26: Split 35: Invalid 93: Force started

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Parameter	Mandatory/ Conditional	Type	Description
TYPE	Mandatory	string(enum)	Type number of the managed object. **The value is described as follows:** 156: vStore pair
ROLE	Conditional	enum	Role. **The value is described as follows:** 0: non-preferred site; 1: preferred site
access	Conditional	enum	Access permission. **The value is described as follows:** The value can be 1 (access forbidden), 2 (read-only), or 3 (read-write).
REMOTEDEVICENAME	Conditional	string	Name of a remote device.
REMOTEDEVICESN	Conditional	string	Serial number of the remote device.
isNetworkSync	Conditional	bool	Whether to synchronize network configurations. **The value is described as follows:** Yes/No
cmo_identity_preserve	Conditional	bool	Whether to synchronize shared authentication information. **The value is described as follows:** Yes/No
REPTYPE	Mandatory	enum	Type of a vStore pair. **The value is described as follows:** 1: HyperMetro; 2: remote replication

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Parameter	Mandatory/ Conditional	Type	Description
portStatus	Conditional	enum	Working status of the logical port. **The value is described as follows:** 1: connected; 2: to be started
ipWorkMode	Mandatory	enum	IP working mode of a HyperMetro vStore pair. **The value is described as follows:** 1: load balancing working mode 2: preferred working mode
isLocalPrefer	Mandatory	enum	Preferred role of the local end of a vStore pair. **The value is described as follows:** 0: no preferred role 1: non-preferred site 2: preferred site
REMOTEDEVICEID	Mandatory	uint32	Remote device ID.

Example

- Batch querying vStore pairs.

```
Request: GET /deviceManager/rest/2102350RMG10H3000004/vstore_pair?range=[0-100]

Response: {
   "data": [
      {
         "CONFIGSTATUS": "0",
         "HEALTHSTATUS": "1",
         "ID": "21007079903ff8df0000000600000000",
         "LINKSTATUS": "1",
         "LOCALVSTOREID": "0",
         "LOCALVSTORENAME": "System_vStore",
         "REMOTEDEVICEID": "0",
         "REMOTEDEVICENAME": "Huawei.Storage",
         "REMOTEDEVICESN": "2102350BSB10F1000088",
         "REMOTEVSTOREID": "0",
         "REMOTEVSTORENAME": "System_vStore",
         "REPTYPE": "2",
         "ROLE": "1",
         "RUNNINGSTATUS": "1",
         "TYPE": 156,
         "access": "1",
         "cmo_identity_preserve": "1",
```

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```
            "ipWorkMode": "0",
            "isLocalPrefer": "0",
            "isNetworkSync": "0",
            "portStatus": "1"
        },
        {
            "CONFIGSTATUS": "0",
            "DOMAINID": "7079903ff8df0100",
            "DOMAINNAME": "FileHyperMetroDomain_000",
            "HEALTHSTATUS": "1",
            "ID": "21007079903ff8df0000000600000001",
            "LINKSTATUS": "1",
            "LOCALVSTOREID": "1",
            "LOCALVSTORENAME": "vst01",
            "REMOTEVSTOREID": "1",
            "REMOTEVSTORENAME": "vst01",
            "REPTYPE": "1",
            "RUNNINGSTATUS": "1",
            "TYPE": 156,
            "ipWorkMode": "1",
            "isLocalPrefer": "0"
        }
    ],
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.12.2.4.2 Interface for Querying vStore Pair Information

Function

This interface is used to query a vStore pair.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/vstore_pair/${id}

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
ID	Mandatory	string	vStore pair ID.

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Result

Parameter	Mandatory/ Conditional	Type	Description
CONFIGSTATUS	Mandatory	enum	Configuration synchronization status. **The value is described as follows:** 0: Normal 1: Synchronizing 2: To be synchronized
DOMAINNAME	Mandatory	string	HyperMetro domain name. **The value is described as follows:** string
LINKSTATUS	Mandatory	enum	Link status. **The value is described as follows:** 1: Connected 2: Not connected
DOMAINID	Mandatory	string(uint64)	HyperMetro domain ID.
HEALTHSTATUS	Mandatory	enum	Health status. **The value is described as follows:** 1: Normal 2: Faulty
ID	Mandatory	string	vStore pair ID. **The value is described as follows:** string
LOCALVSTOREID	Mandatory	string(uint64)	Local vStore ID.
LOCALVSTORENAME	Mandatory	string	Local vStore name. **The value is described as follows:** string
REMOTEVSTOREID	Mandatory	string(uint64)	Remote vStore ID.

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Parameter	Mandatory/ Conditional	Type	Description
RUNNINGSTATUS	Mandatory	enum	Running status. **The value is described as follows:** 1: Normal 25: Unsynchronized 26: Split 35: Invalid 93: Force started
REMOTEVSTORENAME	Mandatory	string	Remote vStore name. **The value is described as follows:** string
TYPE	Mandatory	enum	Object type. **The value is described as follows:** 156
role	Conditional	enum	Primary/secondary role. **The value is described as follows:** 0: secondary end; 1: primary end; **Note:**Returned only when the vStore pair type is remote replication.
REMOTEDEVICESN	Conditional	string	Serial number of the remote device.
REMOTEDEVICENAME	Conditional	string	Name of a remote device.
cmo_identity_preserve	Conditional	bool	Whether to synchronize shared authentication information. **The value is described as follows:** Yes/No
isNetworkSync	Conditional	bool	Whether to synchronize network configurations. **The value is described as follows:** Yes/No

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Parameter	Mandatory/ Conditional	Type	Description
portStatus	Conditional	enum	Working status of the logical port. **The value is described as follows:** 1: connected; 2: to be started
REPTYPE	Mandatory	enum	Type of a vStore pair. **The value is described as follows:** 1: HyperMetro; 2: remote replication
ipWorkMode	Mandatory	enum	IP working mode of a HyperMetro vStore pair. **The value is described as follows:** 1: load balancing working mode 2: preferred working mode
isLocalPrefer	Mandatory	enum	Preferred role of the local site of a HyperMetro vStore pair. **The value is described as follows:** 0: no role 1: non-preferred site 2: preferred site **Note:**If a vStore pair belongs to a HyperMetro domain in synchronous mode, the preferred site is not involved. Only the primary and secondary sites are different, and 0 is returned.

Example

- Querying a vStore pair.

```
Request: GET /deviceManager/rest/210235843910E6000009/vstore_pair/1051720c8a61c000
```

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```
Response: {
   "data": {
      "CONFIGSTATUS": "2",
      "DOMAINID": "30d17eb4f7610100",
      "DOMAINNAME": "HyperMetroDomain_001",
      "HEALTHSTATUS": "1",
      "ID": "1051720c8a61c000",
      "LINKSTATUS": "1",
      "LOCALVSTOREID": "6",
      "LOCALVSTORENAME": "Test_wGvStore006",
      "REMOTEVSTOREID": "5",
      "REMOTEVSTORENAME": "T4_vStore005",
      "REPTYPE": "1",
      "RUNNINGSTATUS": "1",
      "TYPE": 156,
      "ipWorkMode": "1",
      "isLocalPrefer": "0"
   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.2.5 Others

2.12.3 remote_replication_vstore_pair

2.12.3.1 Add

2.12.3.2 Delete

2.12.3.3 Modify

2.12.3.4 Query

2.12.3.5 Others

2.12.3.5.1 Interface for Activating All Logical Ports of the Local vStore of the Remote Replication vStore Pair

Function

Activate all logical ports of the local vStore in the remote replication vStore pair.

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HighRisk

You are about to enable all logical ports of the local vStore of the remote replication vStore pair. Ensure that the remote logical ports of the remote replication vStore pair are disabled. Otherwise, this operation may cause IP address conflicts or data loss. Suggestion: Before performing this operation, ensure that all remote logical ports of the remote replication vStore pair are disabled. If the remote logical ports cannot be disabled due to, for example, a fault on the remote storage array, disconnect the remote site from the host.
You are about to disable all logical ports of the local vStore of the remote replication vStore pair. This operation may cause service interruption and exceptions. Suggestion: Before performing this operation, confirm that this operation is necessary.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/change_local_logical_port_work_status

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore pair ID. **The value is described as follows:** string **Length:**128
portStatus	Mandatory	enum	Working status of the logical port. **The value is described as follows:** 1: connected; 2: to be started

Result

N/A

Example

- This interface is used to change the local port status of a vStore pair.

  ```
  Request: PUT /deviceManager/rest/ST000000000000000049/VSTORE_PAIR/change_local_logical_port_work_status
  ```

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```
{
  "ID":"2100630000040506000000600000004",
  "portStatus":"2"
}

Response:
{
   "data": {},
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.12.3.5.2 Interface for Setting Secondary Resource Protection for a Remote Replication vStore Pair

Function

Set secondary resource protection for a remote replication vStore pair.

HighRisk

You are about to enable secondary resource protection for the remote replication vStore pair. If a new dtree is created on the secondary resource and a share is created when secondary resource protection is disabled on the secondary end, the new dtree and share will be deleted after synchronization is started. Suggestion: Before performing this operation, ensure that the newly created dtree and share on the secondary resource can be deleted.
You are about to cancel secondary resource protection for the remote replication vStore pair and the remote replication pair in the vStore pair. If there are a large number of dtrees in the primary and secondary namespaces of the remote replication pair in the vStore pair, the current operation may time out. Suggestion: If the current operation involves a large number of dtrees, this operation will time out. Please wait.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/VSTORE_PAIR/change_secondary_fs_access

Access Method

PUT

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Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
id	Mandatory	string	vStore pair ID. **The value is described as follows:** string **Length:**128
access	Mandatory	enum	Access permission. **The value is described as follows:** 1: access forbidden; 2: read-only (not supported in the current version); 3: read and write

Result

N/A

Example

- Set secondary resource protection for a vStore pair.

```
Request: PUT /deviceManager/rest/ST000000000000000049/VSTORE_PAIR/
change_secondary_fs_access
{
   "ID":"2100630000040506000000600000004",
   "access":"1"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.13 Import and export management

2.13.1 logfile

2.13.1.1 Add

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2.13.1.2 Delete

2.13.1.3 Modify

2.13.1.4 Query

2.13.1.5 Others

2.13.1.5.1 Interface for Exporting FTDS Logs

Function

Export FTDS logs.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/exportFTDS

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
tag	Mandatory	string	Export operation flag. **The value is described as follows:** package: packing logs getpath: obtaining the path check: checking whether logs can be downloaded Node ID: downloading logs
nid	Conditional	string	Node ID. **Note:**The value must be configured for checking whether logs can be downloaded.

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Result

Parameter	Mandatory/ Conditional	Type	Description
description	Conditional	string	Description. **Note:**This parameter is returned when the path for storing exported FTDS logs is obtained.
name	Conditional	string	Name of a log file. **Note:**The value is returned when the path for exporting FTDS logs is queried and the log files are successfully exported.
nodeid	Conditional	string	Node ID. **Note:**The value is returned when the path for exporting FTDS logs is queried.
result	Conditional	uint32	Export the result. **The value is described as follows:** 0: successful 1: exporting 2: partially successful 3: busy 4: failed 5: export node offline 6: insufficient memory on the export node 100: downloading 101: download successful 102: download failed **Note:**The value is returned when the path for exporting FTDS logs is queried.

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Example

- Package and collect FTDS logs.

```
Request: GET /deviceManager/rest/210235843710E7000007/exportFTDS?tag=package

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Obtain the path for storing exported FTDS logs.

```
Request: GET /deviceManager/rest/210235843710E7000007/exportFTDS?tag=getpath

Response: {
   "data": [
      {
         "description": "",
         "name": "ftds_statdata_0A.tgz",
         "nodeid": "0A",
         "result": 101
      },
      {
         "description": "",
         "name": "ftds_statdata_0B.tgz",
         "nodeid": "0B",
         "result": 101
      }
   ],
   "error": {
      "code": 1073793331,
      "description": "查询导出状态失败。",
      "errorParam": "",
      "suggestion": "使用该命令查询导出状态前请先执行“show file export_path”命令进行信息收集。"
   }
}
```

- Check whether FTDS logs can be downloaded.

```
Request: GET /deviceManager/rest/210235843710E7000007/exportFTDS?tag=check&nid=0A

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

- Download FTDS logs.

```
Request: GET /deviceManager/rest/210235843710E7000007/exportFTDS?tag=0A

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

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2.14 Others

2.14.1 Other

2.14.1.1 Add

2.14.1.2 Delete

2.14.1.3 Modify

2.14.1.4 Query

2.14.1.5 Others

2.14.1.5.1 Interface for Obtaining Performance Data in Batches

Function

This interface is used to obtain the performance data in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_data

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
object_type	Mandatory	enum	Enumeration value number of the object type. **The value is described as follows:** 10: Disk 207: controller 11: LUN 213: Ethernet port 235: bond port 212: Fibre Channel port 16500: IB port 252: FCoE port 216: storage pool Note: For details about the IDs of other object types, see the type row in the section about the performance indicators supported by the interface for obtaining performance data in batches. For example, to query the performance data of the LUN type, set object_type to 11.

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Parameter	Mandatory/Optional/Conditional	Type	Description
object_list	Optional	array	Indicates the ID list of statistical objects. **The value is described as follows:** Indicates the object ID. You can obtain the object ID through the batch query and statistics interface of the object. Multiple object IDs are separated by commas (,). For example, if you want to query the performance data of a specific LUN, you can use the Request: GET /deviceManager/rest/210235843910E6000XXXX/lun interface to obtain the LUN ID. In this case, set object_list to [0,1].
indicators	Optional	array	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the ID column in Obtaining Performance Indicators supported by Interface for Obtaining Performance Data in Batches. Multiple performance indicators are separated by commas (,). For example, to query the block bandwidth and IOPS of the object, set indicators to [21,22].

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Result

Parameter	Mandatory/ Conditional	Type	Description
timestamp	Mandatory	string(uint64)	Performance collection time (device UTC time).
indicator_values	Mandatory	array	Value of the object performance indicator. **The value is described as follows:** The sequence is the same as that of the delivered performance indicator value.
indicators	Mandatory	array	List of enumeration numbers (each maps to a performance indicator). **The value is described as follows:** For details, see the object performance indicator enumeration list in the appendix. Multiple indicators are separated by commas (,).
object_id	Mandatory	string	Object ID.

Usage Guidelines

You can obtain the performance data after enabling the performance monitoring function. If the function is disabled, data cannot be obtained. This interface cannot be invoked concurrently.

Example

- Obtain LUN performance data in batches.

```
Request: GET /deviceManager/rest/210235843910E6000009/performance_data?
object_type=11&object_list=[0,1]&indicators=[21,22]

Response: {
   "data": [
      {
         "indicator_values": [
            0,
            0
```

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```
            ],
            "indicators": [
                21,
                22
            ],
            "object_id": "0",
            "timestamp": 1512364495
        },
        {
            "indicator_values": [
                0,
                0
            ],
            "indicators": [
                21,
                22
            ],
            "object_id": "1",
            "timestamp": 1512364495
        }
    ],
    "error": {
        "code": 0,
        "description": "",
        "suggestion": ""
    }
}
```

- Obtain controller performance data.

```
Request: GET /deviceManager/rest/2102353BAG2008010101/performance_data?
object_type=207&object_list=["0A","0B"]&indicators=[21,370]

Response: {
    "data": [
        {
            "indicator_values": [
                0,
                0
            ],
            "indicators": [
                21,
                370
            ],
            "object_id": "0A",
            "timestamp": 1512364495
        },
        {
            "indicator_values": [
                0,
                0
            ],
            "indicators": [
                21,
                370
            ],
            "object_id": "0B",
            "timestamp": 1512364495
        }
    ],
    "error": {
        "code": 0,
        "description": "",
        "suggestion": ""
    }
}
```

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2.14.1.5.2 Interface for Obtaining Realtime Performance Data in Batches

Function

Obtain real-time performance data in batches.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/performance_data

Access Method

POST

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
object_type	Mandatory	enum	ID of an enumerated value of an object type. **The value is described as follows:** 10: Disk 207: controller 11: LUN 213: Ethernet port 235: bond port 212: Fibre Channel port 16500: IB port 252: FCoE port 216: storage pool Note: For details about other object type IDs, see the type row in section "Object Performance Indicators." For example, to query the performance data of the LUN type, enter "object_type":11.

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Parameter	Mandatory/Optional/Conditional	Type	Description
object_list	Optional	array	Indicates the ID list of statistical objects. **The value is described as follows:** Indicates the object ID. You can obtain the object ID through the batch query and statistics interface of the object. Multiple object IDs are separated by commas (,). For example, to query the performance data of a specified LUN, you can use the LUN batch query interface Request: GET /deviceManager/rest/210235843910E6000XXXX/lun, that is, "object_list":["1","2"].
indicators	Optional	array	Enumeration number of a performance indicator. **The value is described as follows:** For details, see the ID column in Object Performance Indicators. Multiple performance indicators are separated by commas (,). For example, to query the block bandwidth and IOPS of the object, set "indicators": [21,22].

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Result

Parameter	Mandatory/ Conditional	Type	Description
timestamp	Mandatory	string(uint64)	Time when performance data is collected (UTC time of the device). **Unit:**s
indicator_values	Mandatory	array	Value of the object performance indicator. **The value is described as follows:** The sequence is the same as that of supported performance indicators.
indicators	Mandatory	array	Enumeration number of a performance indicator. **The value is described as follows:** For details, see the object performance indicator enumeration list in the appendix. Multiple indicators are separated by commas (,).
object_id	Mandatory	string	Object ID.

Usage Guidelines

You can obtain the performance data after enabling the performance monitoring function. If the function is disabled, data cannot be obtained. This interface cannot be invoked concurrently.

Example

- Obtaining real-time performance data in batches.

```
Request: POST /deviceManager/rest/210235843910E6000009/performance_data
{
"object_type":11,
"indicators":[21,22],
"object_list":["1","2"]
}

Response: {
   "data": [
```

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```
    {
        "indicator_values": [
            0,
            0
        ],
        "indicators": [
            21,
            22
        ],
        "object_id": "5",
        "timestamp": 1512364495
    },
    {
        "indicator_values": [
            0,
            0
        ],
        "indicators": [
            21,
            22
        ],
        "object_id": "8",
        "timestamp": 1512364495
    }
  ],
  "error": {
    "code": 0,
    "description": "",
    "suggestion": ""
  }
}
```


2.14.1.5.3 Interface for Obtaining the OTA Upgrade Version Information

Function

Obtain the OTA upgrade version information.

URL

Request: GET deviceManager/rest/2102352VVA10L4000014/OTA_UPGRADE/ota_upg_get_version_info?isAuto=true

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
isAuto	Mandatory	bool	Whether to enable the automatic mode. **The value is described as follows:** The value can be true(0) or false(1).

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Result

Parameter	Mandatory/ Conditional	Type	Description
packageVersion	Mandatory	string	Package version information. **The value is described as follows:** 0 to 32
packageDescriptionEn	Conditional	string	Description in English. **The value is described as follows:** 0 to 1024
packageDescriptionZh	Conditional	string	Description in Chinese. **The value is described as follows:** 0 to 1024
downloadPath	Mandatory	string	Package download path. **The value is described as follows:** 0 to 512
createTime	Mandatory	string	Creation time. **The value is described as follows:** 0 to 255
packageType	Mandatory	enum	Packet type. **The value is described as follows:** 1: system software package; 3: hot patch package; 7: patch installation during the upgrade; 8: check item package
pkgSize	Mandatory	string	Packet size. **The value is described as follows:** 0 to 32

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Parameter	Mandatory/ Conditional	Type	Description
otaUpgType	Mandatory	enum	OTA upgrade mode. **The value is described as follows:** 0: online upgrade (rolling upgrade) 1: offline upgrade; 2: fast upgrade; 999: default value (not specified)

Application Scope

For internal use by R&D engineers.

Example

- Automatically query version information.

```
Request: GET deviceManager/rest/2102352VVA10L4000014/OTA_UPGRADE/ota_upg_get_version_info?
isAuto=true
Response: {
   "data": [
      "createTime": "2021-05-26T15:03:20.563+08:00",
      "downloadPath": "serverscene/common/eservice/hp1603079198781EnterpriseStorage_local/
OceanStor Dorado 18800 V6/OceanStor Dorado 18800 V6 6.1.0/
OceanStor_Dorado_V6_Software_6.0.0.tgz",
      "downloadType": "HOUP",
      "otaUpgType": 2,
      "packageDescriptionEn": "desc_zh_3",
      "packageDescriptionZh": "desc_zh_3",
      "packageType": "1",
      "packageVersion": "6.1.3",
      "pkgSize": "584455337"
   ],
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.14.2 upgrade

2.14.2.1 Add

2.14.2.2 Delete

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2.14.2.2.1 Interface for Deleting the Current Upgrade Phase

Function

Delete the current upgrade phase.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/delete_current_upgrade_stage

Access Method

DELETE

Parameters

N/A

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Delete the current upgrade phase.

```
Request: DELETE /deviceManager/rest/2102354CGM118D210312/OTA_UPGRADE/delete_current_upgrade_stage
Response:
{
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.14.2.3 Modify

2.14.2.4 Query

2.14.2.4.1 Interface for Querying the Current Upgrade Phase

Function

Query the current upgrade phase.

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URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/query_current_upgrade_stage

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
upgradeMethod	Conditional	enum	Upgrade method. **The value is described as follows:** 1: OTA upgrade; 2: others.
currentStage	Conditional	enum	Current upgrade phase. **The value is described as follows:** 0: evaluation; 1: package download; 2: package distribution; 3: pre-upgrade check; 4: upgrade; 5: hot patch installation; 6: post-upgrade check.

Application Scope

For internal use by R&D engineers.

Example

- Query the current upgrade phase.

```
Request: GET /deviceManager/rest/2102354CGM118D210312/OTA_UPGRADE/
query_current_upgrade_stage
Response:
{
   "data": {
```

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```
        "currentStage": "6",
        "upgradeMethod": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.14.2.4.2 Interface for Querying the Package Download Progress

Function

Query the package download progress.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/ota_pkg_dld_progress

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
packageType	Mandatory	string	Packet type. **The value is described as follows:** 1: system software 2: cold patch 3: hot patch 4: disk 6: OEM package 7: hot patch during the upgrade 8: check item component package 9: system disk 11: BBU 12: image package 13: chart package **Length:**0~32

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Parameter	Mandatory/Optional/Conditional	Type	Description
packageVersion	Mandatory	string	Package version. **The value is described as follows:** - **Length:**0~32

Result

Parameter	Mandatory/Conditional	Type	Description
remainTime	Mandatory	string	Remaining time. **The value is described as follows:** 0~255
progress	Mandatory	int32	Progress. **The value is described as follows:** 0..100
detail	Conditional	json	Details. **The value is described as follows:** {"errorcode":" ","param":" "}
status	Mandatory	enum	Status. **The value is described as follows:** 0: initial; 1: downloading; 2: suspended; 3: failed; 4: successful

Application Scope

For internal use by R&D engineers.

Example

- Query the package download progress.

```
Request: GET /deviceManager/rest/2102352VVA10L4000014/OTA_UPGRADE/ota_pkg_dld_progress?
packageType=1&packageVersion=6.1.5

Response: {
   "data": {
```

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```
        "detail": "{}",
        "progress": "0",
        "remainTime": "0",
        "status": "1"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```


2.14.2.5 Others

2.14.2.5.1 Interface for Downloading the Software Package

Function

Download the software package.

HighRisk

You are about to delete the upgrade package that has been downloaded or is being downloaded. If you need to perform the upgrade again after the deletion, you need to download the upgrade package again. Suggestion: Confirm that you want to continue the deletion.
You are about to cancel the upgrade package download task that is being executed. This operation will delete the upgrade package that is being downloaded. If you need to perform the upgrade again after the deletion, you need to download the upgrade package again. Suggestion: Confirm that you want to cancel the download.

URL

https://${ip}:${port}deviceManager/rest/2102352VVA10L4000014/OTA_UPGRADE/ota_pkg_dld

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
packageVersion	Mandatory	string	Package version. **The value is described as follows:** 0 to 32 **Length:**0~32

Parameter	Mandatory/Optional/Conditional	Type	Description
packageType	Mandatory	enum	Packet type. **The value is described as follows:** 1: system software package; 3: hot patch package; 7: patch installation during the upgrade; 8: check item package
startType	Mandatory	enum	Startup mode. **The value is described as follows:** 0: start; 1: resume; 2: pause; 3: cancel download; 4: delete

Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Download the package.

```
Request: GET deviceManager/rest/2102352VVA10L4000014/OTA_UPGRADE/ota_pkg_dld?
startType=0&packageType=1&packageVersion=6.1.3


Response: {
    "data": {},
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.14.2.5.2 Interface for Executing the Upgrade Check

Function

Execute the pre-upgrade check.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/execute_upgrade_check

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
checkType	Mandatory	string	Upgrade check type. **The value is described as follows:** For details, see the upgrade check type. **Note:** FastUpgradeEvaluate: pre-upgrade evaluation HotpatchPrecheck: check before the hot patch upgrade HotpatchVerify: check after the hot patch upgrade EntireFastUpgrade: pre-upgrade check FastPostUpgrade: post-upgrade check
checkCMD	Mandatory	enum	Check command. **The value is described as follows:** 0: starts the check. 1: retries the check. 2: skips the check.
skipItem	Optional	string	Item to be skipped. **The value is described as follows:** Skipped item name. **Note:**This parameter is delivered when "checkCMD" is delivered to skip the check.
associate_obj_id	Optional	string	ID of the disk to be checked.
extend_param	Optional	string	Additional parameter.

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Result

Parameter	Mandatory/ Conditional	Type	Description
returnValue	Conditional	uint32	Return value. **The value is described as follows:** 0..4294967295

Example

- Execute the pre-upgrade check.

```
Request: PUT /deviceManager/rest/210235982510F7000011/execute_upgrade_check
{
        "checkType":"FastUpgradeEvaluate"
        "checkCMD":"0"
}

Response:
{
   "data":{},
   "error":{
      "code":0,
      "description":"0"
   }
}
```

2.14.2.5.3 Interface for Obtaining Off-Peak Download Parameters

Function

Obtain off-peak download setting parameters.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/ota_get_off_peak_download

Access Method

GET

Parameters

N/A

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Result

Parameter	Mandatory/ Conditional	Type	Description
switch	Mandatory	bool	Whether to enable the function of downloading content in idle hours. **The value is described as follows:** The value can be True or False.
offPeakStartTime	Mandatory	string	Start time of the off-peak download. **The value is described as follows:** 0 to 24
offPeakEndTime	Mandatory	string	End time of the off-peak download. **The value is described as follows:** 0 to 24
maxSpeed	Mandatory	int32	Maximum download speed during off-peak hours. **The value is described as follows:** The value can be 1, 20, or 100, in Mbit/s.

Application Scope

For internal use by R&D engineers.

Example

- Obtain off-peak download setting parameters.

```
Request: GET /deviceManager/rest/2102354CGM118D210312/OTA_UPGRADE/
ota_get_off_peak_download
Response:
{
   "data": {
      "switch": "true",
      "offPeakStartTime": "2",
      "offPeakEndTime": "4",
      "maxSpeed": "20"
   },
   "error": {
      "code": 0,
      "description": "0"
```

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```
    }
}
```

2.14.2.5.4 Interface for Obtaining Off-Peak Upgrade Parameters

Function

Obtain off-peak upgrade parameters.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/get_idle_time_upg_switch

Access Method

GET

Parameters

N/A

Result

Parameter	Mandatory/ Conditional	Type	Description
upgSwitch	Mandatory	bool	Whether the off-peak upgrade is enabled. **The value is described as follows:** The value can be True or False.

Application Scope

For internal use by R&D engineers.

Example

- Obtain off-peak upgrade parameters.

```
Request: GET /deviceManager/rest/2102353YTA10LA000009/OTA_UPGRADE/get_idle_time_upg_switch

Response: {
    "data": {
        "upgSwitch": "true"
    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

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2.14.2.5.5 Interface for Setting Off-Peak Download Parameters

Function

Set off-peak download parameters.

HighRisk

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/ota_set_off_peak_download

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
switch	Optional	bool	Off-peak download switch. **The value is described as follows:** The value can be true or false.
offPeakStartTime	Optional	string	Start time of the off-peak download. **The value is described as follows:** 0 to 24 **Length:**256
maxSpeed	Optional	int32	Maximum download speed during off-peak hours. **The value is described as follows:** The value can be 1, 20, or 100, in Mbit/s.
offPeakEndTime	Optional	string	End time of the off-peak download. **The value is described as follows:** 0 to 24 **Length:**256

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Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Set off-peak download parameters.

```
Request PUT /deviceManager/rest/2102354CGM118D210312/OTA_UPGRADE/
ota_set_off_peak_download
{
    "switch": true,
    "offPeakStartTime": 2,
    "offPeakEndTime": 4
}
Response: {
    "data": { },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.14.2.5.6 Interface for Setting Off-Peak Upgrade Parameters

Function

Set off-peak upgrade parameters.

HighRisk

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/OTA_UPGRADE/set_idle_time_upg_switch

Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
upgSwitch	Mandatory	bool	Whether the off-peak upgrade is enabled. **The value is described as follows:** The value can be True or False.

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Result

N/A

Application Scope

For internal use by R&D engineers.

Example

- Set off-peak upgrade parameters.

```
Request: PUT /deviceManager/rest/2102353YTA10LA000009/OTA_UPGRADE/set_idle_time_upg_switch
{
"upgSwitch": true
}

Response: {
   "data": {

   },
   "error": {
      "code": 0,
      "description": "0"
   }
}
```

2.15 AntiRansomware

2.15.1 anti_ransomware

2.15.1.1 Add

2.15.1.2 Delete

2.15.1.3 Modify

2.15.1.3.1 Interface for Modifying Anti-ransomware Configurations

Function

Modify the in-event detection configuration of the anti-ransomware feature.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/anti_ransomware

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Access Method

PUT

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
antiRansomwareSwitch	Mandatory	enum	Anti-ransomware in-event detection switch. **The value is described as follows:** 0: disabled; 1: enabled
auditItems	Conditional	uint64	Audit item of the file system. **The value is described as follows:** 7936: Create, Delete, Read, Write, and Rename operations are audited. **Note:**Audit item of the file system.
vstoreId	Optional	string	vStore ID. **The value is described as follows:** vStore ID. The default value is "0". **Length:**1-4 **Note:**If no vStore is specified, the anti-ransomware configuration of the built-in system vStore is modified.

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Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters. You can run the "show vstore" command without parameters to obtain the value. **Length:**1 ~ 256 **Note:**If no vStore is specified, the anti-ransomware configuration of the built-in system vStore is modified.

Result

N/A

Usage Guidelines

None.

Example

- Modify the in-event detection configuration of the anti-ransomware feature.

```
Request: PUT /deviceManager/rest/210235843910E6000009/anti_ransomware
{
    "vstoreId":"1",
    "vstoreName":"vstore_1",
    "antiRansomwareSwitch":"1",
    "auditItems":"7936"
}

Response: {
    "data": {

    },
    "error": {
        "code": 0,
        "description": "0"
    }
}
```

2.15.1.4 Query

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2.15.1.4.1 Interface for Querying Anti-ransomware Configurations

Function

Query the in-event detection configuration of the anti-ransomware feature.

URL

https://${ip}:${port}/deviceManager/rest/${deviceId}/anti_ransomware

Access Method

GET

Parameters

Parameter	Mandatory/Optional/Conditional	Type	Description
vstoreId	Optional	string	vStore ID. **The value is described as follows:** Specified vStore ID. The default value is "0". **Length:**1-4 **Note:**If no vStore is specified, the anti-ransomware configuration of the built-in system vStore is queried.
vstoreName	Optional	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters. You can run the "show vstore" command without parameters to obtain the value. **Length:**1 ~ 256 **Note:**If no vStore is specified, the anti-ransomware configuration of the built-in system vStore is queried.

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Result

Parameter	Mandatory/ Conditional	Type	Description
antiRansomwareS-witch	Mandatory	enum	Anti-ransomware in-event detection switch. **The value is described as follows:** 0: disabled; 1: enabled
auditItems	Mandatory	uint64	Audit item of the file system. **The value is described as follows:** 7936: Create, Delete, Read, Write, and Rename operations are audited.
vstoreId	Mandatory	string	vStore ID. **The value is described as follows:** Specified vStore ID. The default value is "0".
vstoreName	Mandatory	string	vStore name. **The value is described as follows:** The value is a string of 1 to 256 characters. You can run the "show vstore" command without parameters to obtain the value.

Usage Guidelines

None.

Example

- Query the in-event detection configuration of the anti-ransomware feature.

```
Request: GET /deviceManager/rest/210235843910E6000009/anti_ransomware?vstoreId=1

Response: {
    "data": {
        "vstoreId": "1",
        "vstoreName": "vstore_1",
        "antiRansomwareSwitch": "1",
        "auditItems": "7936"
    },
    "error": {
```

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```
        "code": 0,
        "description": "0"
    }
}
```

2.15.1.5 Others

3 Appendix

3.1 List of escape characters

3.2 Table of Defining Role Permissions

3.3 Object Performance Indicators

3.4 Performance Indicators Supported by the Interface for Obtaining Performance Data in Batches

3.1 List of escape characters

Before	After
<	<
>	>
(	(
)	)
&	&

3.2 Table of Defining Role Permissions

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3.2.1 Table of Defining Role Permissions in the System View

ObjectName	Term	SuperAdministrator	Administrator	SecurityAdministrator	SANResourceAdministrator	NASResourceAdministrator	DataProtectionAdministrator	EmptyRole	Remote Device Administrator	Monitoring Administrator	NDMP Backup Administrator	VStore Administrator	VStore Protocol Administrator	VStore Data Protection Administrator	VStore WORM Administrator	VStore NDMP Backup Administrator
alarm	Alarm Policy Management and Query and System Log, Configuration Information, and Diagnostic File Export	Read-write	Read-write							Read-write						

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anti_ransomware	Ransomware Protection Management and Query	Read-write	Read-write													
antivirus	Antivirus Service Management and Query	Read-write	Read-write	Read-write								Read-write				
audit_strategy	Audit Log Management and Query	Read-write	Read-write			Read-write				Read		Read-write				
base	Basic Function Management and Query: This object is used only for built-in roles and cannot be configured during custom role creation.	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write

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batch_configuration	Batch Configuration Function Management and Query	Read-write	Read-write													
bbu	BBU Management and Query	Read-write	Read-write				Read			Read						
bgp	BGP Management and Query	Read-write	Read-write		Read-write	Read-write										
bgp_peer	BGP Peer Management and Query	Read-write	Read-write		Read-write	Read-write										
boot	Storage System Power-Off and Restart	Read-write								Read						
cabinet	Cabinet Management and Query	Read-write	Read-write							Read						

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call_home	Call Home (eService) Service Management and Query	Read-write	Read-write							Read-write					
certificate	Certificate Management and Query	Read-write	Read-write	Read-write						Read		Read-write			
cifs_service	CIFS Service Management and Query	Read-write	Read-write			Read-write				Read		Read-write	Read		Read
configuration_data	Configuration File Management and Query	Read-write	Read-write							Read-write					
consistency_group	Consistency Group Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read-write		Read-write	Read-write

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container_application	Containerized Application Management and Query	Read-write	Read-write													
container_node	Container Node Management and Query	Read-write	Read-write													
container_pod	Container Instance Management and Query	Read-write	Read-write													
container_service	Container Service Management and Query	Read-write	Read-write													
controller	Controller Management and Query	Read-write	Read-write		Read-write	Read	Read			Read		Read				
data_turbo（X8000）	DataTurbo Management and Query	Read-write														

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debug	Management and Query Commands in the Diagnostic View	Read-write	Read-write													
disk	Disk Management and Query	Read-write	Read-write	Read-write	Read-write	Read	Read			Read						
disk_destroy_data	Disk Data Destruction Policy Management and Query	Read-write	Read-write	Read-write						Read						
disk_domain	Disk Domain Management and Query	Read-write	Read-write		Read-write	Read-write				Read						
dns_server	DNS Server Management and Query	Read-write	Read-write							Read						

dns_zone	DNS Load Balancing Service Management and Query	Read-write	Read-write	Read	Read-write	Read-write				Read		Read				
domain	Service Plane Domain Server Management	Read-write	Read-write			Read-write				Read		Read-write	Read-write		Read	
dr_star	DR Star Management and Query	Read-write	Read-write				Read-write			Read		Read-write		Read-write		
dtree	Dtree Service Management and Query	Read-write	Read-write			Read-write	Read-write		Read-write	Read	Read-write	Read-write	Read	Read	Read	Read-write
enclosure	Controller Enclosure or Disk Enclosure Management and Query	Read-write	Read-write	Read	Read-write	Read				Read						

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expansion_module	Expansion Module Information Management and Query	Read-write	Read-write							Read						
fan	Fan Module Management and Query	Read-write	Read-write							Read						
file_system	File System and Clone File System Management and Query	Read-write	Read-write	Read		Read-write	Read-write		Read-write	Read	Read-write	Read-write	Read	Read-write	Read-write	Read-write
fs_snapshot	File Service Snapshot Management and Query	Read-write	Read-write	Read-write		Read-write	Read-write		Read-write	Read	Read-write	Read-write		Read-write	Read	Read-write
global_secure_compliance_clock	File System WORM Management and Query	Read-write													Read-write	

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host	Host Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
host_group	Host Group Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
hyper_cdp	HyperCDP Management and Query	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
hyper_clone	HyperClone Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
hyper_clone_group	Clone Consistency Group Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write

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hyper_metro_consistency_group	HyperMetro Consistency Group Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
hyper_metro_domain	HyperMetro Domain Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read		Read		Read-write
hyper_metro_pair	HyperMetro Pair Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
initiator	Initiator Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
interface_module	Interface Module Management and Query	Read-write	Read-write		Read-write	Read	Read			Read						

isns	iSNS Server Management and Query	Read-write	Read-write		Read-write					Read						
kerberos	Kerberos Realm, Service, and Encryption Type Management and Query	Read-write	Read-write			Read-write				Read		Read-write	Read-write		Read	
kmc	Key Service Management and Query	Read-write	Read-write	Read-write						Read						
kms	Key Management Service Management and Query	Read-write	Read-write													
ldap	Domain Authentication Server Management and Query	Read-write	Read-write							Read						
license	License Management and Query	Read-write	Read-write							Read						

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logfile	System Log Management and Query	Read-write	Read-write							Read-write						
lun	LUN and Clone LUN Management and Query	Read-write	Read-write	Read	Read-write		Read-write		Read-write	Read	Read	Read-write		Read-write	Read	Read
lun_consistency_group	LUN Consistency Group Management and Query	Read-write	Read-write		Read-write		Read-write			Read		Read-write		Read-write		
lun_group	LUN Group Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
lun_snapshot	Block Service Snapshot Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write

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mapping_view	Mapping View Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
mirror_domain	Mirroring Policy Management and Query	Read-write	Read-write						Read-write	Read	Read-write					Read-write
nas	NAS Service Management and Query	Read-write	Read-write							Read						
ndmp_service	NDMP Service Management and Query	Read-write	Read-write				Read-write			Read	Read-write	Read-write		Read-write		Read-write
nfs_service	NFS Service Management and Query	Read-write	Read-write			Read-write				Read		Read-write	Read		Read	
nfsv3	NFSv3 Protocol Management and Query	Read-write	Read-write							Read						

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performance	Performance Statistics Policy Management and Query	Read-write	Read-write							Read						
ping	Storage Connectivity Management and Query	Read-write	Read-write		Read-write	Read-write	Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
port	Port Management and Query	Read-write	Read-write		Read-write	Read-write	Read-write		Read-write	Read	Read-write	Read	Read	Read	Read	Read-write
port_group	Port Group Management and Query	Read-write	Read-write		Read-write		Read		Read-write	Read	Read-write	Read-write		Read		Read-write
power_supply	Power Module Management and Query	Read-write	Read-write							Read						

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protect_group	Protection Group Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		
quorum_server	Quorum Server Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read		Read		Read-write
quota	Quota Service Management and Query	Read-write	Read-write			Read-write	Read-write		Read-write	Read	Read-write	Read-write		Read	Read	Read-write
recycle_bin	Recycle Bin Policy and Internal Object Management and Query	Read-write	Read-write	Read	Read-write		Read-write		Read-write	Read	Read					Read
remote_device	Remote Device Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read		Read		Read-write

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remote_replication	Remote Replication Management and Query	Read-write	Read-write				Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
role	Role Management and Query: This object is used only for built-in roles and cannot be configured during custom role creation.	Read-write								Read						
running_data	Operation Data (Configuration Information) Management and Query	Read-write	Read-write							Read-write						
s3_secret_key（Dorado和新融合）	S3 Key Management and Query	Read-write														

safe_strategy	Security Policy Management and Query	Read-write	Read-write	Read-write						Read						
security_rule	Security Rule Management and Query	Read-write	Read-write	Read-write						Read						
share	Share and Share Permission Management and Query	Read-write	Read-write			Read-write				Read		Read-write	Read-write		Read-write	
smart_cache	SmartCache Management and Query	Read-write	Read-write						Read	Read	Read					Read
smart_migration	LUN Migration Management and Query	Read-write	Read-write						Read-write	Read	Read-write	Read-write				Read-write
smart_qos	SmartQoS Management and Query	Read-write	Read-write						Read-write	Read	Read-write	Read-write				Read-write

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smis	SMIS Service Management and Query	Read-write	Read-write							Read						
snap_group	Snapshot Consistency Group Management and Query	Read-write	Read-write		Read-write		Read-write		Read-write	Read	Read-write	Read-write		Read-write		Read-write
snmp	SNMP Policy Management and Query	Read-write	Read-write							Read						
ssh	SSH Information Management and Query	Read-write	Read-write							Read						
storage_engine	Controller Enclosure Management and Query	Read-write	Read-write							Read						
storage_pool	Storage Pool Management and Query	Read-write	Read-write		Read-write	Read-write	Read			Read		Read		Read	Read	

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support_major	Major Management and Query O&M Commands in the Developer and Engineer Views	Read-write								Read						
support_minor	Minor Management and Query O&M Commands in the Developer and Engineer Views	Read-write	Read-write							Read						
system	System Information Management and Query	Read-write	Read-write	Read					Read-write	Read	Read-write					Read-write
system_reporter	Performance Monitoring Parameter Management and Query	Read-write	Read-write							Read						
target	Target Management and Query	Read-write	Read-write		Read-write					Read		Read				

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task	omtask Management and Query	Read-write	Read-write		Read-write	Read-write	Read-write		Read-write	Read	Read-write	Read-write	Read-write	Read-write	Read-write	Read-write
upgrade	Storage System Upgrade Management and Upgrade Status Query	Read-write	Read-write							Read						
user	User Management and Query: This object is used only for built-in roles and cannot be configured during custom role creation.	Read-write								Read						
user_mode	Management and Query of CLI Views Supporting Switchover	Read-write	Read-write							Read-write						

version	Storage System Version Information Query	Read-write	Read-write							Read						
vstore	vStore Service Management and Query	Read-write	Read-write	Read	Read		Read-write		Read	Read	Read	Read	Read	Read	Read	Read
workload_type	Application Type Object Management and Query	Read-write	Read-write	Read	Read-write	Read-write	Read-write		Read	Read		Read	Read	Read	Read	
worm_fingerprint	File Signature Management and Query	Read-write	Read-write			Read-write						Read-write			Read-write	
worm_legal_hold	Litigation Hold File Management and Query	Read-write													Read-write	

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3.3 Object Performance Indicators

3.3.1 Block Storage Performance Indicators

Indicator	**ID**	Statistics Type									
		LUN	Controller	Storage Pool	Ethernet Port	LIF	bond port	Host	Disk Domain	IO Class	FC Port
Type		11	207	216	213	279	235	21	266	230	212
Max. Bandwidth (MB/s)	5	√						√		√	
Usage (%)	18				√		√				√
Queue Length	19	√	√	√	√	√	√	√	√	√	√
Block Bandwidth (MB/s)	21	√	√	√	√	√	√	√	√	√	√
IOPS(IO/s)	22	√	√	√	√	√	√	√	√	√	√

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Read Bandwidth (MB/s)	23	√	√	√	√	√	√	√	√	√	√
Avg. read I/O size(KB)	24	√	√	√	√	√	√	√	√	√	√
Read IOPS(IO/s)	25	√	√	√	√	√	√	√	√	√	√
Write Bandwidth (MB/s)	26	√	√	√	√	√	√	√	√	√	√
Avg. write I/O size(KB)	27	√	√	√	√	√	√	√	√	√	√
Write IOPS(IO/s)	28	√	√	√	√	√	√	√	√	√	√
Service Time	29									√	

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Read I/O Granularity Distribution: [4 KB, 8 KB) (%)	33	√	√	√	√	√	√	√	√	√	√
Read I/O Granularity Distribution: [8 KB, 16 KB) (%)	34	√	√	√	√	√	√	√	√	√	√
Read I/O Granularity Distribution: [16 KB, 32 KB) (%)	35	√	√	√	√	√	√	√	√	√	√

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Read I/O Granularity Distribution: [32 KB, 64 KB) (%)	36	√	√	√	√	√	√	√	√	√	√
Read I/O Granularity Distribution: [64 KB, 128 KB) (%)	37	√	√	√	√	√	√	√	√	√	√
Write I/O Granularity Distribution: [4 KB, 8 KB) (%)	44	√	√	√	√	√	√	√	√	√	√

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Write I/O Granularity Distribution: [8 KB, 16 KB) (%)	45	√	√	√	√	√	√	√	√	√	√
Write I/O Granularity Distribution: [16 KB, 32 KB) (%)	46	√	√	√	√	√	√	√	√	√	√
Write I/O Granularity Distribution: [32 KB, 64 KB) (%)	47	√	√	√	√	√	√	√	√	√	√

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Write I/O Granularity Distribution: [64 KB, 128 KB) (%)	48	√	√	√	√	√	√	√	√	√	√
Avg. CPU Usage (%)	68		√								
Avg. Cache Usage (%)	69		√								
Cache Flushes in Write Requests (%)	81		√								
Cache Flushing Bandwidth (MB/s)	82		√								

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Read Cache Hit Ratio (%)	93	√	√							
Write Cache Hit Ratio (%)	95	√	√							
Cache read usage(%)	110		√							
Cache write usage(%)	120		√							
OPS	182			√						
Avg. I/O size(KB)	228	√		√				√	√	
Read OPS	232			√						
Write OPS	233			√						

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Back-end read/write requests per second	257			√					√		
Back-end read requests per second	258			√					√		
Back-end write requests per second	259			√					√		
Back-End traffic(MB/s)	260			√					√		
Back-end read traffic(MB/s)	261			√					√		

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Back-end write traffic(MB/s)	262			√					√		
Ratio of read I/Os to total I/Os(%)	265	√		√	√	√	√		√	√	√
Ratio of write I/Os to total I/Os(%)	266	√		√	√	√	√		√	√	√
Ratio of back-end read requests(%)	277			√					√		
Ratio of back-end write requests(%)	278			√					√		

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Hit Ratio (%)	303	√	√							
Max. IOPS(IO/s)	307	√			√	√	√	√		√	√
Cache Watermark (%)	333		√							
Service Time(us)	369	√	√	√	√	√	√	√	√	√	√
Avg. I/O Response Time (us)	370	√	√	√	√	√	√	√	√	√	√
Max. I/O Response Time (us)	371	√	√	√	√	√	√	√	√	√	√

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Avg. Read I/O Response Time (us)	384	√	√	√	√	√	√	√	√	√	√
Avg. Write I/O Response Time (us)	385	√	√	√	√	√	√	√	√	√	√
Read I/O Latency Distribution: [0 us, 500 us) (%)	392	√									
Read I/O Latency Distribution: [500 us, 1 ms) (%)	393	√									

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Read I/O Latency Distribution: [1 ms, 2 ms) (%)	394	√									
Read I/O Latency Distribution: [2 ms, 5 ms) (%)	395	√									
Read I/O Latency Distribution: [5 ms, 10 ms) (%)	396	√									

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Read I/O Latency Distribution: [10 ms, +∞) (%)	397	√									
Write I/O Latency Distribution: [0 us, 500 us) (%)	398	√									
Write I/O Latency Distribution: [500 us, 1 ms) (%)	399	√									

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Write I/O Latency Distribution: [1 ms, 2 ms) (%)	400	√									
Write I/O Latency Distribution: [2 ms, 5 ms) (%)	401	√									
Write I/O Latency Distribution: [5 ms, 10 ms) (%)	402	√									

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Write I/O Latency Distribution: [10 ms, +∞) (%)	403	√									
Read and Write I/O Latency Distribution: [0 us, 500 us) (%)	404	√									
Read and Write I/O Latency Distribution: [500 us, 1 ms) (%)	405	√									

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File Bandwidth (KB/s)	511			√							
Service Time(Excluding Queue Time) (us)	523			√							
Avg. Read OPS Response Time (us)	524			√							
Avg. Write OPS Response Time (us)	525			√							
Failed Read I/Os	532	√									

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Failed Write I/Os	533	√									
NFS operation count per second	627		√								
Total NFS Bandwidth (KB/s)	703				√	√	√				
Total CIFS Bandwidth (KB/s)	706				√	√	√				
NFS Read Bandwidth (KB/s)	709				√	√	√				

CIFS Read Bandwidth (KB/s)	712				√	√	√				
NFS Write Bandwidth (KB/s)	715				√	√	√				
CIFS Write Bandwidth (KB/s)	718				√	√	√				
Total NFS OPS	721				√	√	√				
Total CIFS OPS	724				√	√	√				
Total NFS Read OPS	727				√	√	√				
Total CIFS read OPS	730				√	√	√				

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Total NFS write OPS	733				√	√	√				
Total CIFS Write OPS	736				√	√	√				
Other NFS OPS	739				√	√	√				
Other CIFS OPS	742				√	√	√				
Average NFS I/O response time(us)	745				√	√	√				
Average CIFS I/O response time(us)	748				√	√	√				

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Average NFS read I/O response time(us)	751				√	√	√				
Average CIFS read I/O response time(us)	754				√	√	√				
Average NFS write I/O response time(us)	757				√	√	√				
Average CIFS write I/O response time(us)	760				√	√	√				

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Average response time of other NFS I/Os(us)	763				√	√	√				
Average response time of other CIFS I/Os(us)	766				√	√	√				
File Read Bandwidth (KB/s)	770			√							
File Write Bandwidth (KB/s)	771			√							

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Max. Read I/O Size (KB)	802	√	√								
Max. Write I/O Size (KB)	803	√	√								
Max. I/O Size (KB)	804	√	√								
Back-End Read Response Time (us)	805			√					√		
Back-End Write Response Time (us)	806			√					√		

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Avg. Back-End Response Time (us)	807			√					√		
Avg. Member Disk Usage (%)	808			√					√		
Normalized IOPS(IO/s)	810									√	
Transmitting Bandwidth for Replication (KB/s)	812				√	√					√

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Receiving Bandwidth for Replication (KB/s)	813				√	√					√
Cache Page Preservation (%)	1059	√									
Data Reduction Ratio	1090			√							
Deduplication Ratio	1091			√							
Compression Ratio	1092			√							

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Overall Space Saving Ratio	1093			√							
Thin LUN Space Saving Rate(%)	1094			√							
Avg. Write I/O Link Transmission Delay(us)	1140				√	√	√				√
NFS connection Count	1143		√								
CIFS session Count	1142		√								

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Unmap Command Bandwidth (MB/s)	1154	√	√	√				√			
Unmap Command IOPS (IO/s)	1155	√	√	√				√			
Avg. Unmap Command Size (KB)	1156	√	√	√				√			
Avg. Unmap Command Response Time (us)	1157	√	√	√				√			

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WRITE SAME Command Bandwidth (MB/s)	1158	√	√	√				√			
WRITE SAME Command IOPS (IO/s)	1159	√	√	√				√			
Avg. WRITE SAME Command Size (KB)	1160	√	√	√				√			
Avg. WRITE SAME Command Response Time (us)	1161	√	√	√				√			

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Full Copy Read Request Bandwidth (MB/s)	1162	√	√								
Full Copy Read Request IOPS (IO/s)	1163	√	√								
Avg. Full Copy Read Request Size (KB)	1164	√	√								
Avg. Full Copy Read Request Response Time (us)	1165	√	√								

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Full Copy Write Request Bandwidth (MB/s)	1166	√	√								
Full Copy Write Request IOPS (IO/s)	1167	√	√								
Avg. Full Copy Write Request Size (KB)	1168	√	√								
Avg. Full Copy Write Request Response Time (us)	1169	√	√								

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ODX Read Request Bandwidth (MB/s)	1170	√	√								
ODX Read Request IOPS (IO/s)	1171	√	√								
Avg. ODX Read Request Size (KB)	1172	√	√								
Avg. ODX Read Request Response Time (us)	1173	√	√								

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ODX Write Request Bandwidth (MB/s)	1174	√	√								
ODX Write Request IOPS (IO/s)	1175	√	√								
Avg. ODX Write Request Size (KB)	1176	√	√								
Avg. ODX Write Request Response Time (us)	1177	√	√								

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ODX Write Zero Request Bandwidth (MB/s)	1178	√	√	√				√			
ODX Write Zero Request IOPS (IO/s)	1179	√	√	√				√			
Avg. ODX Write Zero Request Size (KB)	1180	√	√	√				√			
Avg. ODX Write Zero Request Response Time (us)	1181	√	√	√				√			

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Read I/O Granularity Distribution: [0K, 4K) (%)	1182	√	√	√	√	√	√	√	√	√	√
Read I/O Granularity Distribution: [128K,+∞) (%)	1183	√	√	√	√	√	√	√	√	√	√
Write I/O Granularity Distribution: [0K, 4K) (%)	1184	√	√	√	√	√	√	√	√	√	√

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Write I/O Granularity Distribution: [128K,+∞) (%)	1185	√	√	√	√	√	√	√	√	√	√
VAAI Bandwidth (MB/s)	1188	√									
VAAI IOPS (IO/s)	1189	√									
Avg. VAAI Size (KB)	1190	√									
Avg. VAAI Response Time (us)	1191	√									

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Copy Read Request Bandwidth	1192	√									
Copy Read Request IOPS (IO/s)	1193	√									
Avg. Copy Read Request Size (KB)	1194	√									
Avg. Copy Read Request Response Time (us)	1195	√									

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Copy Write Request Bandwidth	1196	√									
Copy Write Request IOPS (IO/s)	1197	√									
Avg. Copy Write Request Size (KB)	1198	√									
Avg. Copy Write Request Response Time (us)	1199	√									

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Normalized Latency (us)	1211									√	
AI Cache Hit Ratio (%)	1225		√								
I/O Sequentiality(%)	1233	√									
Read SmartCache Hit Ratio (%)	1234	√	√								
Full Copy Command Bandwidth (MB/s)	1243			√				√			

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Full Copy Command IOPS (IO/s)	1244			√				√			
Avg. Full Copy Command Size (KB)	1245			√				√			
Avg. Full Copy Command Response Time (us)	1246			√				√			
ODX Command Bandwidth (MB/s)	1247			√				√			

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ODX Command IOPS (IO/s)	1248			√				√			
Avg. ODX Command Size (KB)	1249			√				√			
Avg. ODX Command Response Time (us)	1250			√				√			
Total Block IOPS(IO/s)	1251		√								
Total Block Bandwidth (MB/s)	1252		√								

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Background Copy Bandwidth (KB/s)	1277		√								
KV CPU Usage (%)	1299		√								

Indicator	**ID**	Statistics Type				
		Disk	SAS Port	LUNPriorityStatistic	Snapshot	ETH_EXP_Port
Type		10	214	272	27	57867
Usage (%)	18	√	√			
Queue Length	19	√				
Block Bandwidth (MB/s)	21	√	√	√		√
IOPS(IO/s)	22	√	√	√		√
Read Bandwidth (MB/s)	23	√	√	√		
Avg. read I/O size(KB)	24	√				

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Read IOPS(IO/s)	25	√	√	√		
Write Bandwidth (MB/s)	26	√	√	√		
Avg. write I/O size(KB)	27	√				
Write IOPS(IO/s)	28	√	√	√		
Read I/O Granularity Distribution: [4 KB, 8 KB) (%)	33	√				
Read I/O Granularity Distribution: [8 KB, 16 KB) (%)	34	√				
Read I/O Granularity Distribution: [16 KB, 32 KB) (%)	35	√				
Read I/O Granularity Distribution: [32 KB, 64 KB) (%)	36	√				

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Read I/O Granularity Distribution: [64 KB, 128 KB) (%)	37	√				
Write I/O Granularity Distribution: [4 KB, 8 KB) (%)	44	√				
Write I/O Granularity Distribution: [8 KB, 16 KB) (%)	45	√				
Write I/O Granularity Distribution: [16 KB, 32 KB) (%)	46	√				
Write I/O Granularity Distribution: [32 KB, 64 KB) (%)	47	√				
Write I/O Granularity Distribution: [64 KB, 128 KB) (%)	48	√				

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Read Requests to the Snapshot LUN	101				√	
Read Requests Redirected to the Source LUN	102				√	
Write Requests to the Snapshot LUN	105				√	
Service Time(us)	369	√				
Avg. I/O Response Time (us)	370	√	√	√		√
Max. I/O Response Time (us)	371	√	√			
Max. Read I/O Response Time (us)	382		√			
Max. Write I/O Response Time (us)	383		√			
Avg. Read I/O Response Time (us)	384	√	√	√		

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Avg. Write I/O Response Time (us)	385	√	√	√		
Total Capacity (GB)	90001	√				
Used Capacity (GB)	90002	√				
Capacity Usage (%)	90004	√				
Free capacity ratio(%)	90006	√				
Write Requests Less than the Grain Size to the Snapshot LUN	700				√	
Read I/O Granularity Distribution: [0K,4K) (%)	1182	√				
Read I/O Granularity Distribution: [128K,+∞)(%)	1183	√				

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Write I/O Granularity Distribution: [0K,4K) (%)	1184	√				
Write I/O Granularity Distribution: [128K,+∞)(%)	1185	√				

3.3.2 Data Protection Performance Indicators

Indicator	**ID**	Statistics Type					
		Remote Device	FC Replication Link	eISCSI_LINK	eFC_LINK	Remote Replication Pair	Remote Replication CG
Type		224	225	304	303	263	221
Queue Length	19	√	√	√	√		
IOPS(IO/s)	22	√	√	√	√		
Avg. read I/O size(KB)	24	√	√	√	√		
Read IOPS(IO/s)	25	√	√	√	√		
Avg. write I/O size(KB)	27	√	√	√	√		
Write IOPS(IO/s)	28	√	√	√	√		

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Service Time	29	√	√				
Time Since Last Synchronization (s)	99					√	
Read Bandwidth (KB/s)	123	√	√	√	√		
Write Bandwidth (KB/s)	124	√	√	√	√		
Max. IOPS(IO/s)	307	√	√	√	√		
Failed I/Os	308	√	√	√	√		
Failed I/Os per Sec	309	√	√	√	√		
Faulty I/Os (%)	310	√	√	√	√		
Service Time(us)	369			√	√		
Avg. I/O Response Time (us)	370	√	√	√	√		
Max. I/O Response Time (us)	371	√	√	√	√		

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Avg. Read I/O Response Time (us)	384	√	√	√	√		
Avg. Write I/O Response Time (us)	385	√	√	√	√		
Time Difference (s)	699					√	
Max. Bandwidth (KB/s)	800	√	√	√	√		
Bandwidth (KB/s)	801			√	√	√	
Logical Bandwidth (KB/s)	809					√	
Total Bandwidth (KB/s)	811	√	√				
Transmitting Bandwidth for Replication (KB/s)	812	√	√				
Receiving Bandwidth for Replication (KB/s)	813	√	√				

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Synchronization Duration (s)	1054					√	√

3.3.3 File System Performance Indicators

Indicator	ID	Statistics Type	
		ControllerNFSV41	FileSystem
Type		57636	40
Read Bandwidth (MB/s)	23		√
Avg. read I/O size(KB)	24	√	√
Write Bandwidth (MB/s)	26		√
Avg. write I/O size(KB)	27	√	√
Read I/O Granularity Distribution: [1 KB, 2 KB) (%)	31	√	
Read I/O Granularity Distribution: [2 KB, 4 KB) (%)	32	√	
Read I/O Granularity Distribution: [4 KB, 8 KB) (%)	33	√	
Read I/O Granularity Distribution: [8 KB, 16 KB) (%)	34	√	
Read I/O Granularity Distribution: [16 KB, 32 KB) (%)	35	√	

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Read I/O Granularity Distribution: [32 KB, 64 KB) (%)	36	√	
Read I/O Granularity Distribution: [64 KB, 128 KB) (%)	37	√	
Read I/O Granularity Distribution: [128 KB, 256 KB) (%)	38	√	
Write I/O Granularity Distribution: [1 KB, 2 KB) (%)	42	√	
Write I/O Granularity Distribution: [2 KB, 4 KB) (%)	43	√	
Write I/O Granularity Distribution: [4 KB, 8 KB) (%)	44	√	
Write I/O Granularity Distribution: [8 KB, 16 KB) (%)	45	√	
Write I/O Granularity Distribution: [16 KB, 32 KB) (%)	46	√	
Write I/O Granularity Distribution: [32 KB, 64 KB) (%)	47	√	
Write I/O Granularity Distribution: [64 KB, 128 KB) (%)	48	√	
Write I/O Granularity Distribution: [128 KB, 256 KB) (%)	49	√	

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Read Bandwidth (KB/s)	123	√	√
Write Bandwidth (KB/s)	124	√	√
OPS	182	√	√
Read I/O Latency Distribution: [0 ms, 10 ms) (%)	199	√	
Read I/O Latency Distribution: [10 ms, 20 ms) (%)	200	√	
Read I/O Latency Distribution: [20 ms, 50 ms) (%)	201	√	
Read I/O Latency Distribution: [50 ms, 100 ms) (%)	202	√	
Read I/O Latency Distribution: [100 ms, 200 ms) (%)	203	√	
Write I/O Latency Distribution: [0 ms, 10 ms) (%)	205	√	
Write I/O Latency Distribution: [10 ms, 20 ms) (%)	206	√	
Write I/O Latency Distribution: [20 ms, 50 ms) (%)	207	√	
Write I/O Latency Distribution: [50 ms, 100 ms) (%)	208	√	
Write I/O Latency Distribution: [100 ms, 200 ms) (%)	209	√	
Avg. I/O size(KB)	228	√	√
Read OPS	232	√	√
Write OPS	233	√	√

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Read I/O Granularity Distribution: [0 Bytes, 512 Bytes) (%)	466	√	
Read I/O Granularity Distribution: [512B,1K)(%)	467	√	
Read I/O Granularity Distribution: [256K,+∞)(%)	468	√	
Write I/O Granularity Distribution: [0 Bytes, 512 Bytes) (%)	469	√	
Write I/O Granularity Distribution: [512B,1K)(%)	470	√	
Write I/O Granularity Distribution: [256K,+∞)(%)	471	√	
Avg. Operation Response Time (us)	508	√	
Max. Operation Response Time (us)	509	√	
Min. Operation Response Time (us)	510	√	
File Bandwidth (KB/s)	511	√	√
Service Time(Excluding Queue Time)(us)	523		√
Avg. Read OPS Response Time (us)	524	√	√

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Avg. Write OPS Response Time (us)	525	√	√
Other NFS OPS	739	√	√
Other CIFS OPS	742		√
Average response time of other NFS I/Os(us)	763	√	√
Average response time of other CIFS I/Os(us)	766		√
Cache Page Preservation (%)	1059		√
Cache Chunk Preservation (%)	1060		√
Total NFS lookup OPS	1099	√	√
Total NFS create OPS	1100	√	√
Total NFS remove OPS	1101	√	√
Total NFS getattr OPS	1102	√	√
Total NFS setattr OPS	1103	√	√
Total NFS mkdir OPS	1104	√	√
Total NFS rmdir OPS	1105	√	√
Total NFS access OPS	1106	√	√
Total NFS readdir OPS	1107	√	√
Total NFS readdir plus OPS	1108	√	√
Total NFS open OPS	1109	√	
Total CIFS create OPS	1110		√

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Total CIFS queryinfo OPS	1111		√
Total CIFS querydir OPS	1112		√
Total CIFS setinfo OPS	1113		√
Avg. NFS lookup response time(us)	1114	√	√
Avg. NFS create response time(us)	1115	√	√
Avg. NFS remove response time(us)	1116	√	√
Avg. NFS getattr response time(us)	1117	√	√
Avg. NFS setattr response time(us)	1118	√	√
Avg. NFS mkdir response time(us)	1119	√	√
Avg. NFS rmdir response time(us)	1120	√	√
Avg. NFS readdir response time(us)	1121	√	√
Avg. NFS access response time(us)	1122	√	√
Avg. NFS readdir plus response time(us)	1123	√	√
Avg. CIFS create response time(us)	1124		√
Avg. CIFS queryinfo response time(us)	1125		√
Avg. CIFS querydir response time(us)	1126		√
Avg. CIFS setinfo response time(us)	1127		√
Avg. NFS open response time(us)	1128	√	

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Read I/O Latency Distribution: [200ms, 1s)(%)	1129	√	
Read I/O Latency Distribution: [1s, 3s)(%)	1130	√	
Read I/O Latency Distribution: [3s, 5s)(%)	1131	√	
Read I/O Latency Distribution: [5s, 8s)(%)	1132	√	
Read I/O Latency Distribution: [8s, +∞)(%)	1133	√	
Write I/O Latency Distribution: [200ms, 1s)(%)	1134	√	
Write I/O Latency Distribution: [1s, 3s)(%)	1135	√	
Write I/O Latency Distribution: [3s, 5s)(%)	1136	√	
Write I/O Latency Distribution: [5s, 8s)(%)	1137	√	
Write I/O Latency Distribution: [8s, +∞)(%)	1138	√	
Total NFS readlink OPS	1212	√	√
Total NFS symlink OPS	1213	√	√
Total NFS rename OPS	1214	√	√
Total NFS link OPS	1215	√	√
Total NFS fsstat OPS	1216	√	√
Avg. NFS readlink response time(us)	1217	√	√

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Avg. NFS symlink response time(us)	1218	√	√
Avg. NFS rename response time(us)	1219	√	√
Avg. NFS link response time(us)	1220	√	√
Avg. NFS fsstat response time(us)	1221	√	√
Read SmartCache Hit Ratio (%)	1234		√
NFSv4 Compound Requests	1254	√	
Avg. NFS compound response time(us)	1255	√	
Background Copy Bandwidth (KB/s)	1277		√
NFSv4 getAcl OPS	1278	√	√
NFSv3 getAcl OPS	1279		√
CIFS getAcl OPS	1280		√
NFSv4 setAcl OPS	1281	√	√
NFSv3 setAcl OPS	1282		√
CIFS setAcl OPS	1283		√
Avg. NFSv4 getAcl response time(us)	1284	√	√
Avg. NFSv3 getAcl response time(us)	1285		√
Avg. CIFS getAcl response time(us)	1286		√
Avg. NFSv4 setAcl response time(us)	1287	√	√
Avg. NFSv3 setAcl response time(us)	1288		√
Avg. CIFS setAcl response time(us)	1289		√

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3.3.4 IO

Indicator	ID	Statistics Type
		SmartCache Pool
Type		218
Read SmartCache Hit Ratio (%)	1234	√

3.3.5 Protocol

Indicator	ID	Statistics Type	
		ControllerNFSV3	ControllerSMB2
Type		1000	1003
Avg. read I/O size(KB)	24	√	√
Avg. write I/O size(KB)	27	√	√
Read I/O Granularity Distribution: [1 KB, 2 KB) (%)	31	√	√
Read I/O Granularity Distribution: [2 KB, 4 KB) (%)	32	√	√
Read I/O Granularity Distribution: [4 KB, 8 KB) (%)	33	√	√
Read I/O Granularity Distribution: [8 KB, 16 KB) (%)	34	√	√
Read I/O Granularity Distribution: [16 KB, 32 KB) (%)	35	√	√

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Read I/O Granularity Distribution: [32 KB, 64 KB) (%)	36	√	√
Read I/O Granularity Distribution: [64 KB, 128 KB) (%)	37	√	√
Read I/O Granularity Distribution: [128 KB, 256 KB) (%)	38	√	√
Write I/O Granularity Distribution: [1 KB, 2 KB) (%)	42	√	√
Write I/O Granularity Distribution: [2 KB, 4 KB) (%)	43	√	√
Write I/O Granularity Distribution: [4 KB, 8 KB) (%)	44	√	√
Write I/O Granularity Distribution: [8 KB, 16 KB) (%)	45	√	√
Write I/O Granularity Distribution: [16 KB, 32 KB) (%)	46	√	√
Write I/O Granularity Distribution: [32 KB, 64 KB) (%)	47	√	√
Write I/O Granularity Distribution: [64 KB, 128 KB) (%)	48	√	√
Write I/O Granularity Distribution: [128 KB, 256 KB) (%)	49	√	√

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Read Bandwidth (KB/s)	123	√	√
Write Bandwidth (KB/s)	124	√	√
OPS	182	√	√
Read I/O Latency Distribution: [0 ms, 10 ms) (%)	199	√	√
Read I/O Latency Distribution: [10 ms, 20 ms) (%)	200	√	√
Read I/O Latency Distribution: [20 ms, 50 ms) (%)	201	√	√
Read I/O Latency Distribution: [50 ms, 100 ms) (%)	202	√	√
Read I/O Latency Distribution: [100 ms, 200 ms) (%)	203	√	√
Write I/O Latency Distribution: [0 ms, 10 ms) (%)	205	√	√
Write I/O Latency Distribution: [10 ms, 20 ms) (%)	206	√	√
Write I/O Latency Distribution: [20 ms, 50 ms) (%)	207	√	√
Write I/O Latency Distribution: [50 ms, 100 ms) (%)	208	√	√
Write I/O Latency Distribution: [100 ms, 200 ms) (%)	209	√	√
Avg. I/O size(KB)	228	√	√
Read OPS	232	√	√
Write OPS	233	√	√

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Read I/O Granularity Distribution: [0 Bytes, 512 Bytes) (%)	466	√	√
Read I/O Granularity Distribution: [512B,1K)(%)	467	√	√
Read I/O Granularity Distribution: [256K,+∞)(%)	468	√	√
Write I/O Granularity Distribution: [0 Bytes, 512 Bytes) (%)	469	√	√
Write I/O Granularity Distribution: [512B,1K)(%)	470	√	√
Write I/O Granularity Distribution: [256K,+∞)(%)	471	√	√
Avg. Operation Response Time (us)	508	√	√
Max. Operation Response Time (us)	509	√	√
Min. Operation Response Time (us)	510	√	√
File Bandwidth (KB/s)	511	√	√
Avg. Read OPS Response Time (us)	524	√	√
Avg. Write OPS Response Time (us)	525	√	√
Other NFS OPS	739	√	

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Other CIFS OPS	742		√
Average response time of other NFS I/Os(us)	763	√	
Average response time of other CIFS I/Os(us)	766		√
Total NFS lookup OPS	1099	√	
Total NFS create OPS	1100	√	
Total NFS remove OPS	1101	√	
Total NFS getattr OPS	1102	√	
Total NFS setattr OPS	1103	√	
Total NFS mkdir OPS	1104	√	
Total NFS rmdir OPS	1105	√	
Total NFS access OPS	1106	√	
Total NFS readdir OPS	1107	√	
Total NFS readdir plus OPS	1108	√	
Total NFS open OPS	1109	√	
Total CIFS create OPS	1110		√
Total CIFS queryinfo OPS	1111		√
Total CIFS querydir OPS	1112		√
Total CIFS setinfo OPS	1113		√
Avg. NFS lookup response time(us)	1114	√	

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Avg. NFS create response time(us)	1115	√	
Avg. NFS remove response time(us)	1116	√	
Avg. NFS getattr response time(us)	1117	√	
Avg. NFS setattr response time(us)	1118	√	
Avg. NFS mkdir response time(us)	1119	√	
Avg. NFS rmdir response time(us)	1120	√	
Avg. NFS readdir response time(us)	1121	√	
Avg. NFS access response time(us)	1122	√	
Avg. NFS readdir plus response time(us)	1123	√	
Avg. CIFS create response time(us)	1124		√
Avg. CIFS queryinfo response time(us)	1125		√
Avg. CIFS querydir response time(us)	1126		√
Avg. CIFS setinfo response time(us)	1127		√
Avg. NFS open response time(us)	1128	√	
Read I/O Latency Distribution: [200ms, 1s)(%)	1129	√	√
Read I/O Latency Distribution: [1s, 3s)(%)	1130	√	√
Read I/O Latency Distribution: [3s, 5s)(%)	1131	√	√

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Read I/O Latency Distribution: [5s, 8s)(%)	1132	√	√
Read I/O Latency Distribution: [8s, +∞)(%)	1133	√	√
Write I/O Latency Distribution: [200ms, 1s)(%)	1134	√	√
Write I/O Latency Distribution: [1s, 3s)(%)	1135	√	√
Write I/O Latency Distribution: [3s, 5s)(%)	1136	√	√
Write I/O Latency Distribution: [5s, 8s)(%)	1137	√	√
Write I/O Latency Distribution: [8s, +∞)(%)	1138	√	√
Total NFS readlink OPS	1212	√	
Total NFS symlink OPS	1213	√	
Total NFS rename OPS	1214	√	
Total NFS link OPS	1215	√	
Total NFS fsstat OPS	1216	√	
Avg. NFS readlink response time(us)	1217	√	
Avg. NFS symlink response time(us)	1218	√	
Avg. NFS rename response time(us)	1219	√	
Avg. NFS link response time(us)	1220	√	
Avg. NFS fsstat response time(us)	1221	√	

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NFSv3 getAcl OPS	1279	√	
CIFS getAcl OPS	1280		√
NFSv3 setAcl OPS	1282	√	
CIFS setAcl OPS	1283		√
Avg. NFSv3 getAcl response time(us)	1285	√	
Avg. CIFS getAcl response time(us)	1286		√
Avg. NFSv3 setAcl response time(us)	1288	√	
Avg. CIFS setAcl response time(us)	1289		√

3.3.6 Replication

Indicator	**ID**	Statistics Type		
		iSCSI Replication Link	IP Replication Link	SmartMigration
Type		243	20486	253
Queue Length	19	√	√	
IOPS(IO/s)	22	√	√	
Avg. read I/O size(KB)	24	√	√	
Read IOPS(IO/s)	25	√	√	
Avg. write I/O size(KB)	27	√	√	
Write IOPS(IO/s)	28	√	√	
Service Time	29	√	√	
Read Bandwidth (KB/s)	123	√	√	
Write Bandwidth (KB/s)	124	√	√	

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Max. IOPS(IO/s)	307	√	√	
Failed I/Os	308	√	√	
Failed I/Os per Sec	309	√	√	
Faulty I/Os (%)	310	√	√	
Avg. I/O Response Time (us)	370	√	√	
Max. I/O Response Time (us)	371	√	√	
Avg. Read I/O Response Time (us)	384	√	√	
Avg. Write I/O Response Time (us)	385	√	√	
Max. Bandwidth (KB/s)	800	√	√	
Bandwidth (KB/s)	801			√
Total Bandwidth (KB/s)	811	√	√	
Transmitting Bandwidth for Replication (KB/s)	812	√	√	
Receiving Bandwidth for Replication (KB/s)	813	√	√	

3.4 Performance Indicators Supported by the Interface for Obtaining Performance Data in Batches

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