Elastic Volume Service

API Reference

Issue 02

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1 Before You Start

1.1 Overview

Welcome to *Elastic Volume Service API Reference*. Elastic Volume Service (EVS) offers scalable block storage for servers. With high reliability, high performance, and a variety of specifications, EVS disks can be used for distributed file systems, development and test environments, data warehouse applications, and high-performance computing (HPC) scenarios to meet diverse service requirements.

This document describes how to use application programming interfaces (APIs) to perform operations on EVS resources, such as creating, querying, deleting, and updating an EVS resource. For details about all supported operations, see **API Overview**.

Before calling an EVS API, ensure that you are familiar with the EVS concepts. For details, see **Service Overview** in the *Elastic Volume Service User Guide*.

1.2 API Calling

EVS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see **Calling APIs**.

1.3 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoint of the EVS service, see **Regions and Endpoints**.

1.4 Constraints

- For detailed constraints, see the constraints described in specific APIs.

1.5 Concepts

- Account

  An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.

- User

  An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).

  API authentication requires information such as the account name, username, and password.

- Region

  A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.

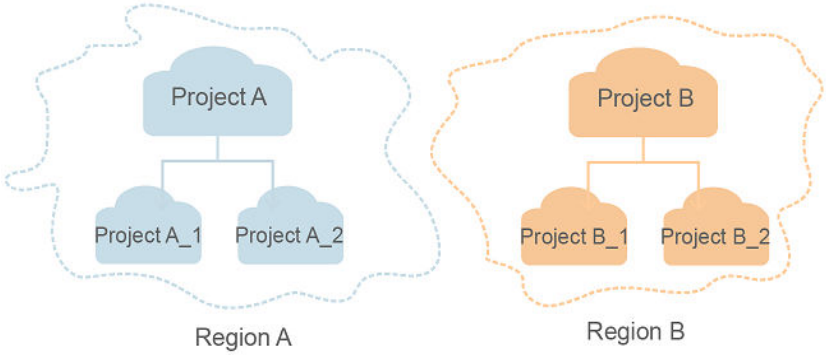
- AZ

  An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

- Project

  A project corresponds to a region. Default projects are defined to group and physically isolate resources (including computing, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

  Figure 1-1 Project isolation model



- Enterprise project

  Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated. An enterprise project can contain resources of multiple regions, and resources can be added to or removed from enterprise projects.

  For details about enterprise projects and about how to obtain enterprise project IDs, see *Enterprise Management User Guide*.

1.6 API Types/Versions/Microversions

API Type Description

EVS APIs are classified as follows:

- APIs for EVS with customized specifications, which are also referred to as APIs
- Native OpenStack APIs that comply with OpenStack community specifications, which are also referred to as OpenStack Cinder APIs

The two types of APIs offer similar functions but are used in different scenarios. OpenStack Cinder APIs are used to meet open-source ecosystem requirements, while APIs for EVS with customized specifications are developed based on native OpenStack APIs with the following enhanced functions:

API Version Description

EVS custom APIs provide multiple versions. If those APIs offer the same functions, you are advised to use the v2 APIs.

2 API Overview

EVS APIs include APIs and OpenStack Cinder APIs.

A combination of these two types of APIs allows you to use all EVS functions.

Table 2-1 API overview

Type	Subtype	Description
API	EVS disk	These APIs provide the functions, such as creating disks, deleting disks, and querying disk details.
	EVS snapshot	An EVS snapshot is a complete copy or image of the disk data at a specific time point. These APIs provide the function of rolling back the snapshot data to the disk.
OpenStack Cinder API	EVS disk	These APIs provide the functions, such as creating disks, updating disks, querying disks, querying images, and querying quotas.
	EVS disk action	These APIs provide the functions, such as expanding disks, reserving disks, exporting disk data as images, and setting the bootable attribute for disks.
	EVS snapshot	An EVS snapshot is a complete copy or image of the disk data at a specific time point. These APIs provide the functions, such as creating snapshots, querying snapshots, updating snapshot metadata, and querying snapshot metadata.
	EVS disk transfer	Through the disk transfer function, disks can be transferred from one tenant to another. After the transfer succeeds, the ownerships of the disks belong to the target tenant only. These APIs provide the functions, such as creating, accepting, deleting, and querying disk transfers.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for **obtaining a user token** as an example to demonstrate how to call an API. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

A request URI is in the following format:

{URI-scheme}://{Endpoint}/{resource-path}?{query-string}

Although a request URI is included in the request header, most programming languages or frameworks require the request URI to be transmitted separately.

Table 3-1 URI parameter description

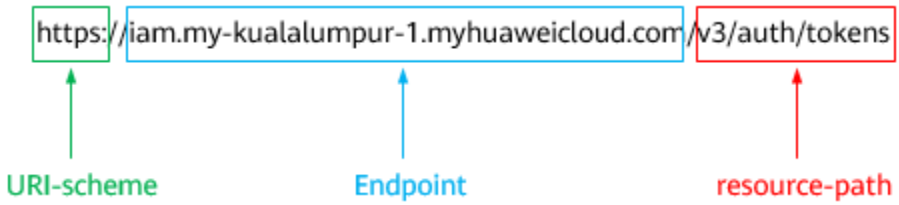
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**. For example, the endpoint of IAM in the **my-kualalumpur-1** region is **iam.my-kualalumpur-1.myhuaweicloud.com**.
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the **resource-path** of the API used to obtain a user token is **/v3/auth/tokens**.

Parameter	Description
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of *Parameter name*=*Parameter value*. For example, **?limit=10** indicates that a maximum of 10 data records will be displayed.

For example, to obtain an IAM token in the **AP-Kuala Lumpur-OP6** region, obtain the endpoint of IAM (**iam.my-kualalumpur-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens
```

Figure 3-1 Example URI



NOTE

To simplify the URI display in this document, each API is provided only with a **resource-path** and a request method. The **URI-scheme** of all APIs is **HTTPS**, and the endpoints of all APIs in the same region are identical.

Request Methods

The HTTP protocol defines the following request methods that can be used to send a request to the server.

Table 3-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.

Method	Description
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

For example, in the case of the API used to **obtain a user token**, the request method is **POST**. The request is as follows:

```
POST https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens
```

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Common request header fields are as follows.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of *Hostname:Port number*. If the port number is not specified, the default port is used. The default port number for **https** is **443**.	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value **application/json** is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495

Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in **Obtaining a Project ID**.	No	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for **obtaining a user token** (This is the only API that does not require authentication). After the request is processed, the value of **X-Subject-Token** in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZIhvcNAQcCo...ggg1BBIINPXsidG9rZ

NOTE

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more details, see "Authentication Using AK/SK" in **Authentication**.

The API used to **obtain a user token** does not require authentication. Therefore, only the **Content-Type** field needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

This part is optional. The body of a request is often sent in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The request body transfers content except the request header.

The request body varies between APIs. Some APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

In the case of the API used to **obtain a user token**, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ******** (login password), and *xxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from **Regions and Endpoints**.

NOTE

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see **Obtaining a User Token**.

```
POST https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json

{
    "auth": {
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",
                    "password": "********",
                    "domain": {
                        "name": "domainname"
                    }
                }
            }
        },
        "scope": {
            "project": {
                "name": "xxxxxxxxxxxxxxxxx"
            }
        }
    }
}
```

If all data required for the API request is available, you can send the request to call the API through **curl**, **Postman**, or coding. In the response to the API used to obtain a user token, **x-subject-token** is the desired user token. This token can then be used to authenticate the calling of other APIs.

3.2 Authentication

Requests for calling an API can be authenticated using either of the following methods:

- Token authentication: Requests are authenticated using tokens.
- AK/SK authentication: Requests are encrypted using AK/SK pairs. AK/SK authentication is recommended because it is more secure than token authentication.

Token Authentication

NOTE

The validity period of a token is 24 hours. When using a token for authentication, cache it to prevent frequently calling the IAM API used to obtain a user token.

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API. You can obtain a token by calling the **Obtaining User Token** API.

EVS is a project-level service. When you call the API, set **auth.scope** in the request body to **project**.

```
{
   "auth": {
      "identity": {
         "methods": [
            "password"
         ],
         "password": {
            "user": {
               "name": "username",   // IAM user name
               "password": "********",  // IAM user password
               "domain": {
                  "name": "domainname"  // Name of the account to which the IAM user belongs
               }
            }
         }
      },
      "scope": {
         "project": {
            "name": "xxxxxxxx"    // Project Name
         }
      }
   }
}
```

After a token is obtained, the **X-Auth-Token** header field must be added to requests to specify the token when calling other APIs. For example, if the token is **ABCDEFJ....**, **X-Auth-Token: ABCDEFJ....** can be added to a request as follows:

```
POST https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK Authentication

NOTE

AK/SK authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token authentication is recommended.

In AK/SK authentication, AK/SK is used to sign requests and the signature is then added to the requests for authentication.

- AK: access key ID, which is a unique identifier used in conjunction with a secret access key to sign requests cryptographically.
- SK: secret access key, which is used in conjunction with an AK to sign requests cryptographically. It identifies a request sender and prevents the request from being modified.

In AK/SK authentication, you can use an AK/SK to sign requests based on the signature algorithm or using the signing SDK. For details about how to sign requests and use the signing SDK, see **API Request Signing Guide**.

NOTE

The signing SDK is only used for signing requests and is different from the SDKs provided by services.

3.3 Response

Status Code

After sending a request, you will receive a response, including a status code, response header, and response body.

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see **Status Codes**.

For example, if status code **201** is returned for calling the API used to **obtain a user token**, the request is successful.

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**.

Figure 3-2 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

Figure 3-2 Header fields of the response to the request for obtaining a user token

(Optional) Response Body

The body of a response is often returned in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following is part of the response body for the API used to **obtain a user token**.

```
{
    "token": {
```

```
        "expires_at": "2019-02-13T06:52:13.855000Z",
        "methods": [
            "password"
        ],
        "catalog": [
            {
                "endpoints": [
                    {
                        "region_id": "az-01",
.....
```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
    "error_msg": "The format of message is error",
    "error_code": "AS.0001"
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

4 Getting Started

4.1 Creating an EVS Disk

Scenarios

This topic describes how to create an EVS disk by calling APIs. For details about how to call APIs, see **Calling APIs**.

In the following example, APIs are called to create a disk from a snapshot.

Prerequisites

You have planned the region where you want to create the disk and obtained the endpoint required for calling the API. For details, see **Endpoints**.

Procedure

Step 1 Query the snapshots and obtain information of the snapshot you desire.

API: **Querying Details About EVS Snapshots**

- Example request

  https://*{endpoint}*/v2/ba546eb46e7247c9aadb566ed7a1d31f/snapshots/detail

- Example response

```
{
  "snapshots": [
    {
      "status": "available",
      "description": null,
      "updated_at": "2019-06-18T12:47:38.234689",
      "volume_id": "037cf89a-8cea-4d63-ac57-345c0ffccfc2",
      "id": "0b126d3b-f2af-404d-8d39-a42fce70065a",
      "size": 40,
      "os-extended-snapshot-attributes:progress": "100%",
      "name": "snapshot-test",
      "os-extended-snapshot-attributes:project_id": "ba546eb46e7247c9aadb566ed7a1d31f",
      "created_at": "2019-06-18T12:47:33.700070",
      "metadata": {}
    }
  ]
}
```


In the response, **id** indicates the snapshot ID.

Step 2 Create a disk from the snapshot.

API: **Creating EVS Disks**

- Example request

  POST https://*{endpoint}*/v2/ba546eb46e7247c9aadb566ed7a1d31f/cloudvolumes

```
{
    "volume": {
        "count": 1,
        "availability_zone": "az-dc-1",
        "description": "test_volume_1",
        "size": 120,
        "snapshot_id": "0b126d3b-f2af-404d-8d39-a42fce70065a",
        "name": "test_volume_1",
        "volume_type": "SAS"
    }
}
```

- Example response

```
{
  "job_id": "ff8080816b512df7016b6ab8982b496b"
}
```

----End

5 API Version Query

5.1 Querying Information of API Versions

Function

This API is used to query information of API versions.

URI

- URI format
  GET /

Request

- Example request
  ```
  GET https://{endpoint}/
  ```

Response

- Parameter description

Parameter	Type	Description
versions	Array of objects	Specifies the API versions. For details, see **Parameters in the versions field**.

- Parameters in the **versions** field

Parameter	Type	Description
min_version	String	Specifies the minimum microversion supported. If this version does not support microversions, the value is an empty string.
media-types	Array of objects	Specifies the request message type of the API version. For details, see **Parameters in the media-types field**.

Parameter	Type	Description
links	Array of objects	Specifies the URI of the API version. For details, see **Parameters in the links field**.
id	String	Specifies the ID of the API version.
updated	String	Specifies the last time when the API version was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
version	String	Specifies the maximum microversion supported. If this version does not support microversions, the value is an empty string.
status	String	Specifies the API version status. The value can be as follows: • **CURRENT**: EVS custom APIs provide multiple versions. For the APIs offering same functions, you are recommended to use the v2 APIs. • **SUPPORTED**: indicates an earlier version which is still supported. • **DEPRECATED**: indicates a deprecated version that may be deleted later.

- Parameters in the **media-types** field

Parameter	Type	Description
type	String	Specifies the response type.
base	String	Specifies the text type.

- Parameters in the **links** field

Parameter	Type	Description
rel	String	Specifies the domain name description.
href	String	Specifies the domain name.
type	String	Specifies the response type.

- Example response

```
{
   "versions": [
      {
         "min_version": "",
         "media-types": [
            {
               "type": "application/vnd.openstack.volume+json;version=1",
               "base": "application/json"
            },
```



```
            {
                "type": "application/vnd.openstack.volume+xml;version=1",
                "base": "application/xml"
            }
        ],
        "links": [
            {
                "rel": "describedby",
                "href": "http://docs.openstack.org/",
                "type": "text/html"
            },
            {
                "rel": "self",
                "href": "https://evs.localdomain.com/v1"
            }
        ],
        "id": "v1.0",
        "updated": "2014-06-28T12:20:21Z",
        "version": "",
        "status": "SUPPORTED"
    },
    {
        "min_version": "",
        "media-types": [
            {
                "type": "application/vnd.openstack.volume+json;version=1",
                "base": "application/json"
            },
            {
                "type": "application/vnd.openstack.volume+xml;version=1",
                "base": "application/xml"
            }
        ],
        "links": [
            {
                "rel": "describedby",
                "href": "http://docs.openstack.org/",
                "type": "text/html"
            },
            {
                "rel": "self",
                "href": "https://evs.localdomain.com/v2"
            }
        ],
        "id": "v2.0",
        "updated": "2014-06-28T12:20:21Z",
        "version": "",
        "status": "SUPPORTED"
    },
    {
        "min_version": "3.0",
        "media-types": [
            {
                "type": "application/vnd.openstack.volume+json;version=1",
                "base": "application/json"
            },
            {
                "type": "application/vnd.openstack.volume+xml;version=1",
                "base": "application/xml"
            }
        ],
        "links": [
            {
                "rel": "describedby",
                "href": "http://docs.openstack.org/",
                "type": "text/html"
            },
            {
                "rel": "self",
```

```
                "href": "https://evs.localdomain.com/v3"
            }
        ],
        "id": "v3.0",
        "updated": "2016-02-08T12:20:21Z",
        "version": "3.0",
        "status": "CURRENT"
    }
  ]
}
```

Status Codes

- Normal

  300

Error Codes

For details, see **Error Codes**.

5.2 Querying Information of an API Version

Function

This API is used to query information of an API version.

URI

- URI format

  GET /{api_version}

- Parameter description

Parameter	Type	Description
api_version	String	Specifies the target API version. The value can be **v1** or **v2**.

Request

- Example request

```
GET https://{endpoint}/v2
```

Response

- Parameter description

Parameter	Type	Description
versions	Array of objects	Specifies the API version information. For details, see **Parameters in the versions field**.

- Parameters in the **versions** field

Parameter	Type	Description
min_version	String	Specifies the minimum microversion supported. If this version does not support microversions, the value is an empty string.
media-types	Array of objects	Specifies the request message type of the API version. For details, see **Parameters in the media-types field**.
links	Array of objects	Specifies the URI of the API version. For details, see **Parameters in the links field**.
id	String	Specifies the ID of the API version.
updated	String	Specifies the last time when the API version was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
version	String	Specifies the maximum microversion supported. If this version does not support microversions, the value is an empty string.
status	String	Specifies the API version status. The value can be as follows: • **CURRENT**: EVS custom APIs provide multiple versions. For the APIs offering same functions, you are recommended to use the v2 APIs. • **SUPPORTED**: indicates an earlier version which is still supported. • **DEPRECATED**: indicates a deprecated version that may be deleted later.

- Parameters in the **media-types** field

Parameter	Type	Description
type	String	Specifies the response type.
base	String	Specifies the text type.

- Parameters in the **links** field

Parameter	Type	Description
rel	String	Specifies the domain name description.
href	String	Specifies the domain name.

Parameter	Type	Description
type	String	Specifies the response type.

- Example response

```
{
   "versions": [
      {
         "min_version": "",
         "media-types": [
            {
               "type": "application/vnd.openstack.volume+json;version=1",
               "base": "application/json"
            },
            {
               "type": "application/vnd.openstack.volume+xml;version=1",
               "base": "application/xml"
            }
         ],
         "links": [
            {
               "rel": "describedby",
               "href": "http://docs.openstack.org/",
               "type": "text/html"
            },
            {
               "rel": "self",
               "href": "https://evs.localdomain.com/v2"
            }
         ],
         "id": "v2.0",
         "updated": "2014-06-28T12:20:21Z",
         "version": "",
         "status": "SUPPORTED"
      }
   ]
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6 APIs

6.1 EVS Disk

6.1.1 Creating EVS Disks

Function

This API is used to create one or multiple EVS disks.

URI

- URI format
  POST /v2/{project_id}/cloudvolumes
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Request parameters

Parameter	Type	Mandatory	Description
volume	Object	Yes	The information of the disk to be created. For details, see **Parameters in the volume field**.

- Parameters in the **volume** field

Parameter	Type	Mandatory	Description
backup_id	String	No	The backup ID. This parameter is mandatory when you create the disk from a backup. **NOTE** For how to obtain the backup ID, see **Querying All Backups** in the *Cloud Backup and Recovery API Reference*.
availability_zone	String	Yes	The AZ where you want to create the disk. If the specified AZ does not exist, the disk will fail to be created. **NOTE** For details about how to obtain the AZ, see **Querying All AZs**.
description	String	No	The disk description, which can contain a maximum of 255 bytes.
size	Integer	Yes	The disk size, in GB. The value can be as follows: ● System disk: 1 GB to 1024 GB ● Data disk: 10 GB to 32768 GB This parameter is mandatory when you create an empty disk. You can specify the parameter value as required within the value range. This parameter is mandatory when you create the disk from a snapshot. Ensure that the disk size is greater than or equal to the snapshot size. This parameter is mandatory when you create the disk from an image. Ensure that the disk size is greater than or equal to the minimum disk capacity required by **min_disk** in the image attributes. This parameter is optional when you create the disk from a backup. If this parameter is not specified, the disk size is equal to the backup size. **NOTE** If the specified value is a decimal, the number part of the value will be used.

Parameter	Type	Mandatory	Description
name	String	No	The disk name. • If you create disks one by one, the **name** value is the disk name, which can contain a maximum of 255 characters. • If you create multiple disks (the **count** value greater than **1**), the system will automatically add a hyphen followed by a four-digit incremental number, such as **-0000**, to the end of each disk name. For example, the disk names can be **volume-0001** and **volume-0002**. The value can contain a maximum of 250 bytes.
snapshot_id	String	No	The snapshot ID. If this parameter is specified, the disk will be created from a snapshot. **NOTE** For details about how to obtain the snapshot ID, see **Querying Details About EVS Snapshots**.
imageRef	String	No	The image ID. If this parameter is specified, the disk will be created from an image.
volume_type	String	Yes	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type If the specified disk type is not available in the AZ, the disk will fail to be created. **NOTE** • When the disk is created from a snapshot, the disk type of the new disk will be consistent with that of the snapshot's source disk. • For details about disk types, see **Disk Types and Performance** in the *Elastic Volume Service User Guide*.

Parameter	Type	Mandatory	Description
count	Integer	No	The number of disks to be created in a batch. If this parameter is not specified, only one disk will be created. You can create a maximum of 100 disks in a batch. If disks are created from backups, batch creation is not supported, and this parameter must be set to **1**. **NOTE** If the specified value is a decimal, the number part of the value will be used.
shareable	String	No	Whether the disk is shareable. The value can be **true** (shared disk) or **false** (common disk). **NOTE** This field is no longer used. Use **multiattach**.

Parameter	Type	Mandatory	Description
metadata	Map<String,String>	No	The metadata of the disk to be created. Optional parameters: The encryption CMK ID in **metadata**. This parameter is used together with **__system__encrypted** for encryption. The length of **cmkid** is fixed at 36 bytes. **NOTE** **__system__encrypted**: the encryption field in **metadata**. The value can be **0** (does not encrypt the disk) or **1** (encrypts the disk). If this parameter is not specified, the encryption attribute of the disk will be the same as that of the data source. If the disk is not created from a data source, the disk will not be encrypted by default. **full_clone**: If the disk is created from a snapshot and linked cloning needs to be used, set this parameter to **0**. **hw:passthrough**: ● If this parameter is set to **true**, the disk device type will be SCSI, which allows ECS OSs to directly access underlying storage media. SCSI reservation commands are supported. ● If this parameter is set to **false**, the disk device type will be VBD, which supports only simple SCSI read/write commands. ● If this parameter is not specified, the disk device type will be VBD.
multiattach	Boolean	No	Whether the disk is shareable. The default value is **false**. ● **true**: indicates a shared disk will be created. ● **false**: indicates a non-shared disk will be created.

NOTE

Specifying either two of the **backup_id**, **snapshot_id**, and **imageRef** fields is not supported.

- Example request

```
{
    "volume": {
        "backup_id": null,
        "count": 1,
        "availability_zone": "az-dc-1",
        "description": "test_volume_1",
        "size": 120,
        "name": "test_volume_1",
        "imageRef": null,
        "volume_type": "SSD"
    }
}
```

Response

- Response parameters

Parameter	Type	Description
job_id	String	The task ID. **NOTE**
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.1.2 Querying Details About All Disks

Function

This API is used to query details about all disks.

Debugging

You can debug the API in which supports automatic authentication. API Explorer can automatically generate and debug example SDK code.

URI

- URI format

  GET /v2/{project_id}/cloudvolumes/detail

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request query parameters

Parameter	Mandatory	Type	Description
availability_zone	No	String	The AZ information.
dedicated_storage_id	No	String	The dedicated storage pool ID. All disks in the dedicated storage pool can be filtered out. Only exact match is supported.
dedicated_storage_name	No	String	The dedicated storage pool name. All disks in the dedicated storage pool can be filtered out. Fuzzy match is supported.
enterprise_project_id	No	String	The enterprise project ID for filtering. If parameter **all_granted_eps** is transferred, disks in all enterprise projects that are within the permission scope will be queried. **NOTE**

Parameter	Mandatory	Type	Description
id	No	String	The disk ID.
ids	No	String	The disk IDs. The parameter value is in the *ids=['id1','id2',...,'idx']* format. In the response, the **ids** value contains valid disk IDs only. Invalid disk IDs will be ignored. The details about a maximum of 60 disks can be queried. If parameters **id** and **ids** are both specified in the request, **id** will be ignored.
limit	No	Integer	The maximum number of query results that can be returned. The default value is **1000**. Minimum value: **1** Maximum value: **1000** Default value: **1000**
marker	No	String	The pagination query by disk ID. The query starts from the first page by default. By specifying a disk ID for **marker**, information of all disks following the specified disk will be queried. Note that information of the specified disk will not be included in the query results.
metadata	No	String	The disk metadata.
multiattach	No	Boolean	Whether the disk is shareable. The value can be **true** (a shared disk) or **false** (a non-shared disk).
name	No	String	The disk name.
offset	No	Integer	The query offset. All disks after this offset will be queried. The value must be an integer greater than 0 but less than the number of disks.
server_id	No	String	The server ID.

Parameter	Mandatory	Type	Description
service_type	No	String	The service type. Only EVS, DSS, and DESS are supported.
sort_dir	No	String	The result sorting order. The value can be **asc** (the ascending order) or **desc** (the descending order). The default value is **desc**.
sort_key	No	String	The keyword based on which the returned results are sorted. The value can be **id**, **status**, **size**, or **created_at**, and the default value is **created_at**.
status	No	String	The disk status. For details, see **EVS Disk Status**.
volume_type_id	No	String	The disk type ID. For details, see **Querying EVS Disk Types**. The disk type ID is the **id** value in the table that describes parameters in the **volume_types** field.

Request

The following example shows how to query the disks in the **available** state.

- Example request
  GET https://{endpoint}/v2/{project_id}/cloudvolumes/detail?status=available

Response

- Response parameters

Parameter	Type	Description
volumes	Array of objects	The list of returned disks. For details, see **Parameters in the volumes field**.
count	Integer	The number of queried disks. This value is not affected by the pagination.
volumes_links	Array of **Link** objects	The query position marker in the disk list. If only some disks are returned in this query, the URL of the last disk queried will be returned. You can use this URL to continue to query the remaining disks in the next query.

Parameter	Type	Description
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volumes** field

Parameter	Type	Description
id	String	The disk ID.
links	Array of objects	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	Array of objects	The disk attachment information. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.
os-vol-host-attr:host	String	The reserved field.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
volume_image_metadata	Object	The metadata of the disk image. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

Parameter	Type	Description
volume_type	String	The disk type. The value can be **SSD** or **SAS**. ● **SSD**: the ultra-high I/O type ● **SAS**: the high I/O type
size	Integer	The disk size, in GB.
consistencygroup_id	String	The reserved field.
bootable	String	Whether the disk is bootable. ● **true**: indicates a bootable disk. ● **false**: indicates a non-bootable disk.
metadata	Map<String,Object>	The disk metadata. The encryption CMK ID in **metadata**. This parameter is used together with **__system__encrypted** for encryption. The length of **cmkid** is fixed at 36 bytes. **NOTE** **__system__encrypted**: the encryption field in **metadata**. The value can be **0** (not encrypted) or **1** (encrypted). If this parameter does not appear, the encryption attribute of the disk is the same as that of the data source. If the disk is not created from a data source, the disk is not encrypted by default. **full_clone**: The method of creation when the disk is created from a snapshot. ● **0**: linked clone ● **1**: full clone **hw:passthrough**: ● If this parameter is **true**, the disk device type is SCSI, which allows ECS OSs to directly access underlying storage media. SCSI reservation commands are supported. ● If this parameter is **false**, the disk device type is VBD, which supports only simple SCSI read/write commands. ● If this parameter does not appear, the disk device type is VBD.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

Parameter	Type	Description
encrypted	Boolean	This field is currently not supported.
replication_status	String	The reserved field.
os-vol-mig-status-attr:migstat	String	The reserved field.
os-vol-host-attr:host	String	The reserved field.
os-vol-mig-status-attr:name_id	String	The reserved field.
os-volume-replication:extended_status	String	The reserved field.
shareable	String	Whether the disk is shareable. The value can be **true** (shared disk) or **false** (common disk). This field is no longer used. Use **multiattach**.
user_id	String	The reserved field.
service_type	String	The service type. The value can be **EVS**, **DSS**, or **DESS**.
dedicated_storage_id	String	The ID of the DSS storage pool accommodating the disk.
dedicated_storage_name	String	The name of the DSS storage pool accommodating the disk.
tags	Map<String,String>	The disk tags. This field has values if the disk has tags. Or, it is left empty.
wwn	String	The unique identifier used when attaching the disk.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
enterprise_project_id	String	The ID of the enterprise project that the disk has been added to.
serial_number	String	The disk SN. This field is returned only for non-HyperMetro SCSI volumes and is used for disk mapping in the VM.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
  "count" : 1,
  "volumes" : [ {
    "attachments" : [ ],
    "availability_zone" : "az-dc-1",
    "bootable" : "false",
    "created_at" : "2016-05-25T02:42:10.856332",
    "description" : null,
    "id" : "b104b8db-170d-441b-897a-3c8ba9c5a214",
    "links" : [ {
      "href" : "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/volumes/
b104b8db-170d-441b-897a-3c8ba9c5a214",
      "rel" : "self"
```



```
    }, {
      "href" : "https://volume.localdomain.com:8776/dd14c6ac581f40059e27f5320b60bf2f/volumes/
b104b8db-170d-441b-897a-3c8ba9c5a214",
      "rel" : "bookmark"
    } ],
    "metadata" : { },
    "name" : "zjb_u25_test",
    "os-vol-host-attr:host" : "pod01.xxx#SATA",
    "volume_image_metadata" : { },
    "os-vol-mig-status-attr:migstat" : null,
    "os-vol-mig-status-attr:name_id" : null,
    "os-vol-tenant-attr:tenant_id" : "dd14c6ac581f40059e27f5320b60bf2f",
    "os-volume-replication:extended_status" : null,
    "replication_status" : "disabled",
    "multiattach" : false,
    "size" : 1,
    "snapshot_id" : null,
    "status" : "available",
    "updated_at" : "2016-05-25T02:42:22.341984",
    "user_id" : "b0524e8342084ef5b74f158f78fc3049",
    "volume_type" : "SATA",
    "service_type" : "EVS",
    "dedicated_storage_id" : null,
    "dedicated_storage_name" : null,
    "wwn" : " 688860300000d136fa16f48f05992360"
  } ],
  "volumes_links" : [ {
    "href" : "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/volumes/
detail?limit=1&marker=b104b8db-170d-441b-897a-3c8ba9c5a214",
    "rel" : "next"
  } ]
}
```


or


```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

6.1.3 Deleting an EVS Disk (Deprecated)

Function

This API is used to delete an EVS disk.

NOTICE

This API has been deprecated. Use another API. For details, see **Deleting an EVS Disk**.

Debugging

You can debug the API in which supports automatic authentication. API Explorer can automatically generate and debug example SDK code.

URI

- URI format

  DELETE /v2/{project_id}/cloudvolumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Example request

```
DELETE https://{endpoint}/v2/{project_id}/cloudvolumes/b104b8db-170d-441b-897a-3c8ba9c5a214
```

Response

- Response parameters

Parameter	Type	Description
job_id	String	The task ID. **NOTE** For details about how to query the task status, see **Querying Task Status**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response


```
{
   "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

or

```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.1.4 Updating an EVS Disk (Deprecated)

Function

This API is used to update the name and description of an EVS disk.

NOTICE

This API has been deprecated. Use another API. For details, see **Updating an EVS Disk**.

Debugging

You can debug the API in which supports automatic authentication. API Explorer can automatically generate and debug example SDK code.

URI

- URI format

  PUT /v2/{project_id}/cloudvolumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
volume	Object	Yes	The information of the disk to be updated. For details, see **Parameters in the volume field**.

- Parameters in the **volume** field

Parameter	Type	Mandatory	Description
name	String	No	The new name of the disk. Parameters **name** and **description** cannot be null at the same time. The value can contain a maximum of 255 bytes.
description	String	No	The new description of the disk. Parameters **name** and **description** cannot be null at the same time. The value can contain a maximum of 255 bytes.

- Example request

```
{
    "volume": {
        "name": "test_volume",
        "description": "test"
    }
}
```

Response

- Response parameters

Parameter	Type	Description
id	String	The disk ID.
links	Array of objects	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	Array of objects	The disk attachment information. For details, see **Parameters in the attachments field**.

Parameter	Type	Description
availability_zone	String	The AZ to which the disk belongs.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The returned value is currently invalid. The tenant ID is the same as the project ID.
volume_image_metadata	Object	The metadata of the disk image. The returned value is currently invalid. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
size	Integer	The disk size, in GB.
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**.
os-vol-host-attr:host	String	The reserved field.
shareable	String	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.

Parameter	Type	Description
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
os-volume-replication:extended_status	String	The reserved field.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "id": "36ba39af-3579-4e6e-adfc-b764349c0f77",
    "links": [
        {
            "href": "https://volume.region.xxx.xxx-tsi.de/v2/3cfb09080bd944d0b4cdd72ef26857bd/
volumes/36ba39af-3579-4e6e-adfc-b764349c0f77",
            "rel": "self"
        },
        {
            "href": "https://volume.region.xxx.xxx-tsi.de/3cfb09080bd944d0b4cdd72ef26857bd/volumes/
36ba39af-3579-4e6e-adfc-b764349c0f77",
            "rel": "bookmark"
        }
    ],
    "name": "newVolume",
    "status": "in-use",
    "attachments": [
        {
            "server_id": "c3d3250c-7ce5-42cc-b620-dd2b63d19ca5",
            "attachment_id": "011a2bdb-a033-4479-845b-50bd8ed7f4d4",
            "attached_at": "2017-05-23T11:27:38.604815",
            "host_name": null,
            "volume_id": "36ba39af-3579-4e6e-adfc-b764349c0f77",
            "device": "/dev/sdf",
            "id": "36ba39af-3579-4e6e-adfc-b764349c0f77"
        }
    ],
    "description": "new volume",
    "multiattach": false,
    "shareable": false,
    "size": 10,
    "metadata": {
        "policy": "dc71a9c9-b3fa-429d-a070-037682d82d21",
        "attached_mode": "rw",
        "readonly": "False",
        "hw:passthrough": "false"
    },
    "bootable": "false",
    "availability_zone": "az-dc-1",
    "os-vol-host-attr:host": null,
    "source_volid": null,
    "snapshot_id": null,
    "created_at": "2017-05-23T09:49:44.481299",
    "volume_type": "SAS",
    "os-vol-tenant-attr:tenant_id": null,
    "os-volume-replication:extended_status": null,
    "volume_image_metadata": null
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
```



```
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.1.5 Querying Details About a Disk

Function

This API is used to query details about a disk.

Debugging

You can debug the API in which supports automatic authentication. API Explorer can automatically generate and debug example SDK code.

URI

- URI format

  GET /v2/{project_id}/os-vendor-volumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/os-vendor-volumes/b104b8db-170d-441b-897a-3c8ba9c5a214
```

Response

- Response parameters

Parameter	Type	Description
volume	Object	The queried disk. For details, see **Parameters in the volume field**.

Parameter	Type	Description
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume** field

Parameter	Type	Description
id	String	The disk ID.
links	Array of objects	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	Array of objects	The disk attachment information. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.
count	String	The number of queried disks.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
volume_image_metadata	Object	The metadata of the disk image. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.
dedicated_storage_id	String	The ID of the DSS storage pool accommodating the disk.

Parameter	Type	Description
dedicated_storage_name	String	The name of the DSS storage pool accommodating the disk.
enterprise_project_id	String	The ID of the enterprise project that the disk has been added to. This field is currently not supported.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
size	Integer	The disk size, in GB.
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**. If **metadata** does not contain the **hw:passthrough** field, the disk device type is VBD.
os-vol-host-attr:host	String	The reserved field.
encrypted	Boolean	Whether the disk is encrypted.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
os-volume-replication:driver_data	String	The reserved field.
os-volume-replication:extended_status	String	The reserved field.
replication_status	String	The reserved field.
os-vol-mig-status-attr:migstat	String	The reserved field.

Parameter	Type	Description
consistencygroup_id	String	The reserved field.
os-vol-mig-status-attr:name_id	String	The reserved field.
shareable	String	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
user_id	String	The reserved field.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
dedicated_storage_id	String	The ID of the DSS storage pool accommodating the disk.
dedicated_storage_name	String	The name of the DSS storage pool accommodating the disk.
wwn	String	The unique identifier used when attaching the disk.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.

Parameter	Type	Description
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response


```
{
    "volume": {
        "attachments": [ ],
        "links": [
            {
                "href": "https://volume.az0.dc1.domainname.com/v2/40acc331ac784f34842ba4f08ff2be48/
volumes/591ac654-26d8-41be-bb77-4f90699d2d41",
                "rel": "self"
            },
            {
                "href": "https://volume.az0.dc1.domainname.com/40acc331ac784f34842ba4f08ff2be48/
volumes/591ac654-26d8-41be-bb77-4f90699d2d41",
                "rel": "bookmark"
            }
        ],
        "availability_zone": "az-dc-1",
        "os-vol-host-attr:host": "az-dc-1#SSD",
        "encrypted": false,
        "multiattach": true,
        "updated_at": "2016-02-03T02:19:29.895237",
        "os-volume-replication:extended_status": null,
        "replication_status": "disabled",
        "snapshot_id": null,
        "id": "591ac654-26d8-41be-bb77-4f90699d2d41",
        "size": 40,
        "user_id": "fd03ee73295e45478d88e15263d2ee4e",
        "os-vol-tenant-attr:tenant_id": "40acc331ac784f34842ba4f08ff2be48",
        "volume_image_metadata": null,
        "os-vol-mig-status-attr:migstat": null,
        "metadata": {},
        "status": "available",
        "description": "auto-created_from_restore_from_backup",
```



```
        "source_volid": null,
        "consistencygroup_id": null,
        "os-vol-mig-status-attr:name_id": null,
        "name": "restore_backup_0115efb3-678c-4a9e-bff6-d3cd278238b9",
        "bootable": "false",
        "created_at": "2016-02-03T02:19:11.723797",
        "volume_type": null,
        "service_type": "EVS",
        "dedicated_storage_id": null,
        "dedicated_storage_name": null,
        "wwn": " 688860300000d136fa16f48f05992360"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badrequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.1.6 Querying EVS Disks (Deprecated)

Function

This API is used to query EVS disks and display the query results in a list.

NOTICE

This API has been deprecated. Use another API. For details, see **Querying EVS Disks**.

URI

- URI format

  GET /v2/{project_id}/cloudvolumes

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
marker	String	No	The ID of the resource from which the pagination query starts. It is the ID of the last resource on the previous page.
name	String	No	The disk name. The value can contain a maximum of 255 bytes.
status	String	No	The disk status. For details, see **EVS Disk Status**.
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from 1 to 1000, and the default value is 1000. The returned value cannot exceed this limit.
availability_zone	String	No	The AZ information.
sort_key	String	No	The keyword based on which the returned results are sorted. The value can be **id**, **status**, **size**, or **created_at**, and the default value is **created_at**.
sort_dir	String	No	The result sorting order. The default value is **desc**. • **desc**: the descending order • **asc**: the ascending order

Request

The following example shows how to query the disks in the **available** state.

- Example request
  ```
  GET https://{endpoint}/v2/{project_id}/cloudvolumes?status=available
  ```

Response

- Response parameters

Parameter	Type	Description
volumes	Array of objects	The list of queried disks. For details, see **Parameters in the volumes field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volumes** field

Parameter	Type	Description
id	String	The disk ID.
links	Array of objects	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name. The value can contain a maximum of 255 bytes.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "volumes": [
      {
         "id": "e6cf4401-15f6-44bd-ae2b-cff4dc9523e6",
         "links": [
            {
               "href": "https://volume.az0.dc1.domainname.com/v2/
cd631140887d4b6e9c786b67a6dd4c02/volumes/e6cf4401-15f6-44bd-ae2b-cff4dc9523e6",
               "rel": "self"
            },
            {
               "href": "https://volume.az0.dc1.domainname.com/
cd631140887d4b6e9c786b67a6dd4c02/volumes/e6cf4401-15f6-44bd-ae2b-cff4dc9523e6",
               "rel": "bookmark"
            }
```

```
            ],
            "name": "hallo5"
        },
        {
            "id": "4c5e8203-f70e-4717-90cd-4a8f636888d1",
            "links": [
                {
                    "href": "https://volume.az0.dc1.domainname.com/v2/
cd631140887d4b6e9c786b67a6dd4c02/volumes/4c5e8203-f70e-4717-90cd-4a8f636888d1",
                    "rel": "self"
                },
                {
                    "href": "https://volume.az0.dc1.domainname.com/
cd631140887d4b6e9c786b67a6dd4c02/volumes/4c5e8203-f70e-4717-90cd-4a8f636888d1",
                    "rel": "bookmark"
                }
            ],
            "name": "hallo4"
        }
    ]
}
```


or


```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.1.7 Expanding Capacity of an EVS Disk (Deprecated)

Function

This API is used to expand the capacity of an EVS disk.

NOTICE

This API call exists for compatibility reasons only and is not meant to be used.

URI

- URI format

  POST /v2/{project_id}/cloudvolumes/{volume_id}/action
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The ID of a disk.

Request

- Request parameters

Parameter	Type	Mandatory	Description
os-extend	Object	Yes	The disk expansion marker. For details, see **Parameter in the os-extend field**.

- Parameter in the **os-extend** field

Parameter	Type	Mandatory	Description
new_size	Integer	Yes	The new disk size, in GB. The new size ranges from the original size to the maximum size (**32768** for a data disk and **1024** for a system disk). **NOTE** If the specified value is a decimal, the number part of the value will be used.

- Example request

```
{
    "os-extend": {
        "new_size": 200
    }
}
```

Response

- Response parameters

Parameter	Type	Description
job_id	String	The task ID. **NOTE** For details about how to query the task status, see **Querying Task Status**.

Parameter	Type	Description
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

or

```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.2 EVS Snapshot

6.2.1 Rolling Back a Snapshot to an EVS Disk

Function

This API is used to roll back a snapshot to an EVS disk.

Constraints

- When you roll back a snapshot to a disk, you can only roll back the snapshot to the source disk. Rollback to a specified disk is not supported.

- You can roll back a disk from a snapshot only when the disk is in the **available** or **error_rollbacking** state.
- Snapshots whose names started with prefix **autobk_snapshot_** are automatically created by the system during backup creations. Do not use these snapshots to roll back the disk data.

URI

- URI format

  POST /v2/{project_id}/os-vendor-snapshots/{snapshot_id}/rollback

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	The snapshot ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
rollback	Object	Yes	The snapshot rollback information. For details, see **Parameters in the rollback field**.

- Parameters in the **rollback** field

Parameter	Type	Mandatory	Description
volume_id	String	Yes	The ID of the target disk.
name	String	No	The name of the target disk. The value can contain a maximum of 255 bytes. **NOTE** Parameter **name** cannot be used independently. When **name** is going to be used, **volume_id** must also be specified.

- Example request

```
{
   "rollback": {
      "name": "test-001",
      "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635"
```

```
    }
}
```

Response

- Response parameters

Parameter	Type	Description
rollback	Object	The snapshot rollback information. For details, see **Parameter in the rollback field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameter in the **rollback** field

Parameter	Type	Description
volume_id	String	The ID of the target disk that the snapshot data rolled back to.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "rollback": {
        "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal
  202

Error Codes

For details, see **Error Codes**.

6.3 EVS Tag

6.3.1 Obtaining All Tags of an EVS Resource Type

Function

This API is used to obtain all tags of an EVS resource type.

Constraints

None

URI

- URI format
  GET /v2/{project_id}/cloudvolumes/tags
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

None

Response

- Parameter description

Parameter	Type	Description
tags	Object	Specifies the tag information about all EVS disks.

- Example response

```
{
  "tags": {
```



```
        "key_0": [
            "value_0"
        ],
        "key_1": [
            "value_1",
            "value_2",
            "value_3",
            "value_4"
        ]
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

6.3.2 Batch Adding Tags for the Specified EVS Disk

Function

This API is used to batch add tags for the specified EVS disk.

- When adding tags, if a tag key is consistent with an existing one, the new tag will overwrite the existing tag.
- A maximum of 10 tags can be created for a disk.

Constraints

None

URI

- URI format

  POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
tags	List<resource_tag>	Yes	Specifies the tag list. For details, see **Parameters in the resource_tag field**.
action	String	Yes	Specifies the operation to perform. The value can be **create** or **delete**. **create**: specifies to add tags.

- Parameters in the **resource_tag** field

Parameter	Type	Mandatory	Description
key	String	Yes	Specifies the tag key. Tag keys of a disk must be unique. • A tag key can contain a maximum of 36 characters. • Character set: A-Z, a-z, 0-9, hyphens (-), underscores (_), and Unicode characters (\u4E00-\u9FFF)
value	String	Yes	Specifies the tag value. • A tag value can contain a maximum of 43 characters and can be an empty string. • Character set: A-Z, a-z, 0-9, periods (.), hyphens (-), underscores (_), and Unicode characters (\u4E00-\u9FFF)

- Example request

```
{
   "action": "create",
   "tags": [
      {
         "key": "key1",
         "value": "value1"
      },
      {
         "key": "key2",
         "value": "value3"
      }
   ]
}
```

Response

None

Status Codes

- Normal

204

Error Codes

For details, see **Error Codes**.

6.3.3 Batch Deleting Tags of a Specified EVS Disk

Function

This API is used to batch delete tags of a specified EVS disk.

Constraints

None

URI

- URI format

  POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
tags	List<resource_tag>	Yes	The tag list. For details, see **Parameters in the resource_tag field**.
action	String	Yes	The operation to perform. The value can be **create** or **delete**. **delete**: deletes tags.

- Parameters in the **resource_tag** field

Parameter	Type	Mandatory	Description
key	String	Yes	The tag key.
value	String	No	The tag value. • It can contain up to 43 Unicode characters. • It can be an empty string. The spaces before and after the character string are discarded. • It cannot contain the following characters: – Non-printable ASCII characters (0-31) – Special characters, including asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), equal signs (=), commas (,), vertical bars (|), and slashes (/)

- Example request

```
{
   "action": "delete",
   "tags": [
      {
         "key": "key1"
      },
      {
         "key": "key2"
      }
   ]
}
```

Response

None

Status Codes

- Normal
  204

Error Codes

For details, see **Error Codes**.

6.3.4 Querying Tags of an EVS Disk

Function

This API is used to query the tags of the specified EVS disk.

Constraints

None

URI

- URI format

  GET /v2/{project_id}/cloudvolumes/{volume_id}/tags

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

None

Response

- Parameter description

Parameter	Type	Description
tags	List<resource_tag>	Specifies the tag list. For details, see **Parameters in the tags field**.

- Parameters in the **tags** field

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

- Example response

```
{
   "tags": [
      {
         "value": "value1",
         "key": "key1"
      },
      {
         "value": "value2",
         "key": "key2"
      }
   ]
}
```

Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

6.3.5 Querying Details of EVS Disks by Tag

Function

This API is used to query the details of EVS disks by tag.

Constraints

None

URI

- URI format
  POST /v2/{project_id}/cloudvolumes/resource_instances/action
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Request parameters

Parameter	Type	Mandatory	Description
tags	Array of objects	Yes	The key-value pairs of tags. For details, see **Parameters in the tags field**. One tag list can contain a maximum of 10 keys. Tag keys in a tag list must be unique. When multiple keys are specified in a tag list, only the disks having all specified keys are queried. **NOTE** If multiple tag lists are specified in the request, only the disks that meet the requirements of the last tag list are queried.
limit	Integer	No	The number of query records. The value ranges from **1** to **1000**, and the default value is **1000**. The returned value cannot exceed this limit.
offset	Integer	No	The index location. The minimum value is **0**, which is also the default value. The first record in the query result is the offset+1 record that meets the query criteria.
action	String	Yes	The operation identifier. Specifying **filter** queries the details of disks by tag.
matches	Array of objects	No	The query criteria that the resource supports. For details, see **Parameters in the matches field**. Tag keys in a list must be unique.

- Parameters in the **tags** field

Parameter	Type	Mandatory	Description
key	String	Yes	The tag key.

Parameter	Type	Mandatory	Description
values	Array of objects	Yes	The tag value. • One value list can contain a maximum of 10 values. • Tag values in a value list must be unique. • If the value list is left empty, any tag value can be matched. When multiple values are specified in a value list and the key requirements are met, disks that have any of the specified values are queried.

- Parameters in the **matches** field

Parameter	Type	Mandatory	Description
key	String	Yes	The tag key. The value can be as follows: • **resource_name**: the disk name • **service_type**: the service type
value	String	Yes	The tag value. • It can contain up to 255 characters. • If **resource_name** is specified for **key**, the tag value uses a fuzzy match.

- Example request

```
{
   "offset": "100",
   "limit": "100",
   "action": "filter",
   "tags": [
      {
         "key": "key1",
         "values": [
            "value1",
            "value2"
         ]
      }
   ],
   "matches": [
      {
         "key": "resource_name",
         "value": "resource1"
      },
      {
```



```
        "key": "service_type",
        "value": "EVS"
      }
   ]
}
```

Response

- Response parameters

Parameter	Type	Description
total_count	Integer	The total number of disks that meet the query criteria.
resources	List<resource>	The list of disks that meet the query criteria. For details, see **Parameters in the resources field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **resources** field

Parameter	Type	Description
resource_id	String	The disk ID.
resource_name	String	The disk name.
resource_detail	object	The disk details.
tags	Array of Map<String, String> objects	The tag list.

- Parameters in the **VolumeDetailForTag** field

Parameter	Type	Description
id	String	The disk ID.
links	Array of Objects	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	Array of Objects	The disk URI. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.

Parameter	Type	Description
os-vol-host-attr:host	String	The reserved field.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
volume_image_metadata	Map<String, Object>	The metadata of the disk image. **NOTE** Note:
volume_type	String	The disk type.
size	Integer	The disk size, in GB.
consistencygroup_id	String	The reserved field.
bootable	String	Whether the disk is bootable. The value can be **true** (a bootable disk) or **false** (a non-bootable disk).
metadata	Object	The disk metadata. For details, see **Parameters in the VolumeMetadata field**.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
encrypted	Boolean	This field is currently not supported.
replication_status	String	The reserved field.
os-volume-replication:extended_status	String	The reserved field.

Parameter	Type	Description
os-vol-mig-status-attr:migstat	String	The reserved field.
os-vol-mig-status-attr:name_id	String	The reserved field.
shareable	Boolean	Whether the disk is shareable. The value can be **true** (shared disk) or **false** (common disk). This field is no longer used. Use **multiattach**.
user_id	String	The reserved field.
service_type	String	The service type. The value can be **EVS**, **DSS**, or **DESS**.
multiattach	Boolean	Whether the disk is shareable.
dedicated_storage_id	String	The ID of the DSS storage pool accommodating the disk.
dedicated_storage_name	String	The name of the DSS storage pool accommodating the disk.
tags	Map<String,String>	The disk tags. This field has values if the disk has tags. Or, it is left empty.
wwn	String	The unique identifier used when attaching the disk.
enterprise_project_id	String	The ID of the enterprise project that the disk has been added to. **NOTE** Note:

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

Parameter	Type	Description
attachment_id	String	The ID of the attachment information.
device	String	The device name.
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
id	String	The ID of the attached disk.
server_id	String	The ID of the server to which the disk is attached.
volume_id	String	The disk ID.

- Parameters in the **VolumeMetadata** field

Parameter	Type	Description
__system__cmkid	String	The encryption CMK ID in **metadata**. This parameter is used together with **__system__encrypted** for encryption. The length of **cmkid** is fixed at 36 bytes. **NOTE**
__system__encrypted	String	The encryption field in **metadata**. The value can be **0** (not encrypted) or **1** (encrypted). If this parameter does not appear, the encryption attribute of the disk is the same as that of the data source. If the disk is not created from a data source, the disk is not encrypted by default.
full_clone	String	The method of creation when the disk is created from a snapshot. • **0**: linked clone • **1**: full clone
hw:passthrough	String	• Value **true** indicates the SCSI device type, which allows ECS OSs to directly access the underlying storage media. SCSI reservation commands are supported. • Value **false** indicates the VBD device type, which supports only simple SCSI read/write commands. • If this parameter does not appear, the disk device type is VBD.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response


```
{
   "total_count": 1,
   "resources": [{
      "resource_name": "resource1",
      "resource_detail": {
         "attachments": [{
            "server_id": "2080869e-ba46-4ea5-b45e-3191ac0f1d54",
            "attachment_id": "1335f039-7a42-4d1e-be49-ac584db0ba0b",
            "attached_at": "2019-08-06T07:00:21.842812",
            "host_name": null,
            "volume_id": "7fa6b592-ac75-460d-a28a-bb17429d1eb2",
            "device": "/dev/vda",
            "id": "7fa6b592-ac75-460d-a28a-bb17429d1eb2"
         }],
         "links": [{
            "href": "https://volume.Region.dc1.domainname.com/
v2/051375756c80d5eb2ff0c014498645fb/volumes/7fa6b592-ac75-460d-a28a-bb17429d1eb2",
            "rel": "self"
         },
         {
            "href": "https://volume.Region.dc1.domainname.com/051375756c80d5eb2ff0c014498645fb/
volumes/7fa6b592-ac75-460d-a28a-bb17429d1eb2",
            "rel": "bookmark"
         }],
         "availability_zone": "kvmxen.dc1",
         "os-vol-host-attr:host": "az21.dc1#2",
         "encrypted": false,
         "dedicated_storage_id": null,
         "enterprise_project_id": "0",
         "updated_at": "2019-08-09T06:19:35.874737",
         "os-volume-replication:extended_status": null,
         "replication_status": "disabled",
         "snapshot_id": null,
         "id": "7fa6b592-ac75-460d-a28a-bb17429d1eb2",
         "size": 40,
         "user_id": "75f26e17348643bfb7718578b04635c2",
         "os-vol-tenant-attr:tenant_id": "051375756c80d5eb2ff0c014498645fb",
         "service_type": "EVS",
         "os-vol-mig-status-attr:migstat": null,
         "metadata": {

         },
         "status": "in-use",
         "volume_image_metadata": {
            "size": "0",
            "__quick_start": "False",
            "container_format": "bare",
            "min_ram": "0",
            "image_name": "test-hua-centos7.3-0725",
            "image_id": "c6c153a6-dde8-4bac-8e40-3d7619436934",
            "__os_type": "Linux",
            "min_disk": "20",
            "__support_kvm": "true",
            "virtual_env_type": "FusionCompute",
            "__description": "",
```



```
                "__os_version": "CentOS 7.3 64bit",
                "__os_bit": "64",
                "__image_source_type": "uds",
                "__support_xen": "true",
                "file_format": "zvhd2",
                "checksum": "d41d8cd98f00b204e9800998ecf8427e",
                "__imagetype": "gold",
                "disk_format": "zvhd2",
                "__image_cache_type": "Not_Cache",
                "__isregistered": "true",
                "__image_location": "192.168.46.200:5443:pcsimsregion:c6c153a6-
dde8-4bac-8e40-3d7619436934",
                "__image_size": "911269888",
                "__platform": "CentOS"
            },
            "description": "",
            "multiattach": false,
            "source_volid": null,
            "consistencygroup_id": null,
            "os-vol-mig-status-attr:name_id": null,
            "name": "resource1",
            "bootable": "true",
            "created_at": "2019-08-06T06:59:03.056682",
            "volume_type": "SAS",
            "shareable": false,
            "dedicated_storage_name": null
        },
        "tags": [{
            "key": "key1",
            "value": "value1"
        },
        {
            "key": "key1",
            "value": "value2"
        }],
        "resource_id": "7fa6b592-ac75-460d-a28a-bb17429d1eb2"
    }]
}
```


or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "computeFault": {
        "message": "The server has either erred or is incapable of performing the requested operation.",
        "code": 500
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7 OpenStack Cinder APIs

7.1 EVS Disk

7.1.1 Creating EVS Disks

Function

This API is used to create one or multiple EVS disks.

URI

- URI format

  POST /v2/{project_id}/volumes
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Request parameters

Parameter	Type	Mandatory	Description
volume	Object	Yes	The information of the disk to be created. For details, see **Parameters in the volume field**.

- Parameters in the **volume** field

Parameter	Type	Mandatory	Description
availability_zone	String	Yes	The AZ where you want to create the disk. If the specified AZ does not exist, the disk will fail to be created. **NOTE** For details about how to obtain the AZ, see **Querying All AZs**.
source_volid	String	No	The source disk ID. If this parameter is specified, the disk will be cloned from an existing disk. This function is currently not supported.
description	String	No	The disk description, which can contain a maximum of 255 bytes.
snapshot_id	String	No	The snapshot ID. If this parameter is specified, the disk will be created from a snapshot. **NOTE** For details about how to obtain the snapshot ID, see **Querying Details About EVS Snapshots**.
size	Integer	Yes	The disk size, in GB. The value can be as follows: • System disk: 1 GB to 1024 GB • Data disk: 10 GB to 32768 GB This parameter is mandatory when you create an empty disk. You can specify the parameter value as required within the value range. This parameter is mandatory when you create the disk from a snapshot. Ensure that the disk size is greater than or equal to the snapshot size. This parameter is mandatory when you create the disk from an image. Ensure that the disk size is greater than or equal to the minimum disk capacity required by **min_disk** in the image attributes.
name	String	No	The disk name, which can contain a maximum of 255 bytes.
imageRef	String	No	The image ID. If this parameter is specified, the disk will be created from an image.

Parameter	Type	Mandatory	Description
volume_type	String	No	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type If the specified disk type is not available in the AZ, the disk will fail to be created. **NOTE** • When the disk is created from a snapshot, the disk type of the new disk will be consistent with that of the snapshot's source disk. • For details about disk types, see **Disk Types and Performance** in the *Elastic Volume Service User Guide*.
metadata	Object	No	The disk metadata. The length of **key** and **value** under **metadata** can contain no more than 255 bytes. For details about **metadata**, see **Parameters in the metadata field**. The table lists some fields. You can also specify other fields as required. **NOTE** Parameter values under **metadata** cannot be **null**.
source_replica	String	No	The source disk ID. If this parameter is specified, the disk will be cloned from an existing disk. This function is currently not supported.
consistencygroup_id	String	No	The reserved field.
count	No	Integer	The number of disks to be created in a batch. If this parameter is not specified, only one disk will be created. You can create a maximum of 100 disks in a batch. If disks are created from backups, batch creation is not supported, and this parameter must be set to **1**. If the specified value is a decimal, the number part of the value will be used.

Parameter	Type	Mandatory	Description
shareable	String	No	The extended attribute that defines whether the disk will be shareable. The value can be **true** (shareable) or **false** (not shareable). This field is currently not supported. **NOTE** This field is no longer used. Use **multiattach**.
multiattach	Boolean	No	Whether the disk is shareable. The default value is **false**. • **true**: indicates a shared disk will be created. • **false**: indicates a non-shared disk will be created.

NOTE

Specifying any two of the **source_volid**, **snapshot_id**, and **imageRef** fields together is not supported.

- Parameters in the **metadata** field

Parameter	Type	Mandatory	Description
hw:passthrough	String	No	• If this parameter is set to **true**, the disk device type will be SCSI, which allows ECS OSs to directly access the underlying storage media and supports SCSI reservation commands. • If this parameter is set to **false**, the disk device type will be VBD, which supports only simple SCSI read/write commands. • If this parameter is not specified, the disk device type will be VBD. **NOTE** If parameter **shareable** is set to **true** and parameter **hw:passthrough** is not specified, shared VBD disks are created.
full_clone	String	No	If the disk is created from a snapshot and linked cloning needs to be used, set this parameter to **0**.

NOTE

The preceding table provides only some **metadata** parameters for your reference. You can also specify other fields as required.

- If the disk is created from a snapshot, **hw:passthrough** is not supported, and the new disk will have the same device type as that of the snapshot's source disk.
- If the disk is created from an image, **hw:passthrough** is not supported, and the device type of the new disk will be VBD.

- Example request

```
{
   "volume": {
      "name": "openapi_vol01",
      "imageRef": "027cf713-45a6-45f0-ac1b-0ccc57ac12e2",
      "availability_zone": "az-dc-1",
      "description": "create for api test",
      "volume_type": "SAS",
      "metadata": {
         "volume_owner": "openapi"
      },
      "multiattach": false,
      "size": 40
   },
}
```

Response

- Response parameters

Parameter	Type	Description
volume	Object	The information of the created disks. For details, see **Parameters in the volume field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume** field

Parameter	Type	Description
id	String	The disk ID.
links	list	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	list	The disk attachment information. For details, see **Parameters in the attachments field**.

Parameter	Type	Description
availability_zone	String	The AZ to which the disk belongs.
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
encrypted	Boolean	This field is currently not supported.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
description	String	The disk description.
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
replication_status	String	The reserved field.
consistencygroup_id	String	The ID of the consistency group where the disk belongs. This field is currently not supported.
source_volid	String	The source disk ID. This field is currently not supported.
snapshot_id	String	The snapshot ID.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**.
size	Integer	The disk size, in GB.
user_id	String	The reserved field.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
shareable	Boolean	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.

Parameter	Type	Description
storage_cluster_id	String	The reserved field.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.

Parameter	Type	Description
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume": {
        "attachments": [ ],
        "availability_zone": "az-dc-1",
        "bootable": "false",
        "consistencygroup_id": null,
        "created_at": "2016-05-25T02:38:40.392463",
        "description": "create for api test",
        "encrypted": false,
        "id": "8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
        "links": [
            {
                "href": "https://volume.localdomain.com:8776/v2/5dd0b0056f3d47b6ab4121667d35621a/
volumes/8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
                "rel": "self"
            },
            {
                "href": "https://volume.localdomain.com:8776/5dd0b0056f3d47b6ab4121667d35621a/
volumes/8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
                "rel": "bookmark"
            }
        ],
        "metadata": {
            "volume_owner": "openapi"
        },
        "name": "openapi_vol01",
        "replication_status": "disabled",
        "multiattach": false,
        "size": 40,
        "snapshot_id": null,
        "source_volid": null,
        "status": "creating",
        "updated_at": null,
        "user_id": "39f6696ae23740708d0f358a253c2637",
        "volume_type": "SAS"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


Status Codes

- Normal
  202

Error Codes

For details, see **Error Codes**.

7.1.2 Deleting an EVS Disk

Function

This API is used to delete an EVS disk.

URI

- URI format
  DELETE /v2/{project_id}/volumes/{volume_id}
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

- Request filter parameters

Parameter	Type	Mandatory	Description
cascade	Boolean	No	Whether to delete all the snapshots created for this disk. The default value is **false**.

Request

The following example shows how to delete a disk and all its snapshots.

- Example request
  DELETE https://{endpoint}/v2/{project_id}/volumes/{volume_id}?cascade=true

Response

- Response parameters

Parameter	Type	Description
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.1.3 Updating an EVS Disk

Function

This API is used to update an EVS disk.

URI

- URI format

  PUT /v2/{project_id}/volumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
volume	Object	Yes	The information of the disk to be updated. For details, see **Parameters in the volume field**.

- Parameters in the **volume** field

Parameter	Type	Mandatory	Description
name	String	No	The disk name. The value can contain a maximum of 255 bytes.
description	String	No	The disk description. The value can contain a maximum of 255 bytes.
metadata	Object	No	The disk metadata. The length of the key or value in the metadata cannot exceed 255 bytes.
display_name	String	No	Also the disk name. You can specify either parameter **name** or **display_name**. If both parameters are specified, the **name** value is used. The value can contain a maximum of 255 bytes.

Parameter	Type	Mandatory	Description
display_description	String	No	Also the disk description. You can specify either parameter **description** or **display_description**. If both parameters are specified, the **description** value is used. The value can contain a maximum of 255 bytes.

- Example request

```
{
   "volume": {
      "name": "test_volume",
      "description": "test"
   }
}
```

Response

- Response parameters

Parameter	Type	Description
volume	Object	The information of the updated disk. For details, see **Parameters in the volume field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume** field

Parameter	Type	Description
id	String	The disk ID.
links	list<map<String,String>>	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	list	The disk attachment information. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.

Parameter	Type	Description
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
encrypted	Boolean	This field is currently not supported.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
description	String	The disk description.
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
replication_status	String	The reserved field.
consistencygroup_id	String	The reserved field.
source_volid	String	The source disk ID. This field is currently not supported.
snapshot_id	String	The snapshot ID.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**.
size	Integer	The disk size, in GB.
user_id	String	The reserved field.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
shareable	Boolean	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
storage_cluster_id	String	The reserved field.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume": {
        "attachments": [ ],
        "availability_zone": "az-dc-1",
        "bootable": "false",
```



```
        "consistencygroup_id": null,
        "created_at": "2016-05-25T02:38:40.392463",
        "description": "create for api test",
        "encrypted": false,
        "id": "8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
        "links": [
            {
                "href": "https://volume.localdomain.com:8776/v2/5dd0b0056f3d47b6ab4121667d35621a/
volumes/8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
                "rel": "self"
            },
            {
                "href": "https://volume.localdomain.com:8776/5dd0b0056f3d47b6ab4121667d35621a/
volumes/8dd7c486-8e9f-49fe-bceb-26aa7e312b66",
                "rel": "bookmark"
            }
        ],
        "metadata": {
            "volume_owner": "openapi"
        },
        "name": "openapi_vol01",
        "replication_status": "disabled",
        "multiattach": false,
        "size": 40,
        "snapshot_id": null,
        "source_volid": null,
        "status": "creating",
        "updated_at": null,
        "user_id": "39f6696ae23740708d0f358a253c2637",
        "volume_type": "SAS"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.4 Querying EVS Disks

Function

This API is used to query EVS disks.

URI

- URI format

  GET /v2/{project_id}/volumes

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
marker	String	No	The ID of the resource from which the pagination query starts. It is the ID of the last resource on the previous page.
name	String	No	The disk name. The value can contain a maximum of 255 bytes.
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from 1 to 1000, and the default value is 1000. The returned value cannot exceed this limit. If the tenant has more than 50 disks in total, you are advised to use this parameter and set its value to **50** to improve the query efficiency. Examples are provided as follows: **GET /v2/*xxx*/volumes?limit=50**: Queries the 1–50 disks. **GET /v2/*xxx*/volumes?offset=50&limit=50**: Queries the 51–100 disks.
sort_key	String	No	The keyword based on which the returned results are sorted. The value can be **id**, **status**, **size**, or **created_at**, and the default value is **created_at**.

Parameter	Type	Mandatory	Description
sort_dir	String	No	The result sorting order. The default value is **desc**. • **desc**: the descending order • **asc**: the ascending order
offset	Integer	No	The query offset. All disks after this offset will be queried. The value must be an integer greater than 0 but less than the number of disks.
status	String	No	The disk status. For details, see **EVS Disk Status**.
metadata	String	No	The disk metadata.
availability_zone	String	No	The AZ information.

Request

The following example shows how to query the disks in the **available** state.

- Example request
  GET https://{endpoint}/v2/{project_id}/volumes?status=available

Response

- Response parameters

Parameter	Type	Description
volumes	list	The list of queried disks. For details, see **Parameters in the volumes field**.
volumes_links	list	The query position marker in the disk list. If only some disks are returned in this query, the URL of the last disk queried will be returned. You can use this URL to continue to query the remaining disks in the next query.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volumes** field

Parameter	Type	Description
id	String	The disk ID.
links	list<map<String, String>>	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name. The value can contain a maximum of 255 bytes.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volumes": [
        {
            "id": "6b604cef-9bd8-4f5a-ae56-45839e6e1f0a",
            "links": [
                {
                    "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
volumes/6b604cef-9bd8-4f5a-ae56-45839e6e1f0a",
                    "rel": "self"
                },
                {
                    "href": "https://volume.localdomain.com:8776/dd14c6ac581f40059e27f5320b60bf2f/
volumes/6b604cef-9bd8-4f5a-ae56-45839e6e1f0a",
                    "rel": "bookmark"
                }
            ],
            "name": "zjb_u25_test"
        },
        {
            "id": "2bce4552-9a7d-48fa-8484-abbbf64b206e",
            "links": [
                {
                    "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
volumes/2bce4552-9a7d-48fa-8484-abbbf64b206e",
                    "rel": "self"
                },
                {
                    "href": "https://volume.localdomain.com:8776/dd14c6ac581f40059e27f5320b60bf2f/
volumes/2bce4552-9a7d-48fa-8484-abbbf64b206e",
                    "rel": "bookmark"
```



```
            }
         ],
         "name": "zjb_u25_test"
      },
      {
         "id": "3f1b98ec-a8b5-4e92-a727-88def62d5ad3",
         "links": [
            {
               "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
volumes/3f1b98ec-a8b5-4e92-a727-88def62d5ad3",
               "rel": "self"
            },
            {
               "href": "https://volume.localdomain.com:8776/dd14c6ac581f40059e27f5320b60bf2f/
volumes/3f1b98ec-a8b5-4e92-a727-88def62d5ad3",
               "rel": "bookmark"
            }
         ],
         "name": "zjb_u25_test"
      }
   ],
   "volumes_links": [
      {
         "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
volumes?limit=3&marker=3f1b98ec-a8b5-4e92-a727-88def62d5ad3",
         "rel": "next"
      }
   ]
}
```


or


```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```


In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:


```
{
   "badRequest": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```


Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.5 Querying Details About All Disks

Function

This API is used to query details about all disks.

URI

- URI format

  GET /v2/{project_id}/volumes/detail

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
marker	String	No	The ID of the resource from which the pagination query starts. It is the ID of the last resource on the previous page.
name	String	No	The disk name. The value can contain a maximum of 255 bytes.
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from 1 to 1000, and the default value is 1000. The returned value cannot exceed this limit. If the tenant has more than 50 disks in total, you are advised to use this parameter and set its value to **50** to improve the query efficiency. Examples are provided as follows: **GET /v2/*xxx*/volumes/detail?limit=50**: Queries the 1–50 disks. **GET /v2/*xxx*/volumes/detail?offset=50&limit=50**: Queries the 51–100 disks.
sort_key	String	No	The keyword based on which the returned results are sorted. The value can be **id**, **status**, **size**, or **created_at**, and the default value is **created_at**.

Parameter	Type	Mandatory	Description
sort_dir	String	No	The result sorting order. The default value is **desc**. • **desc**: the descending order • **asc**: the ascending order
offset	Integer	No	The query offset. All disks after this offset will be queried. The value must be an integer greater than 0 but less than the number of disks.
status	String	No	The disk status. For details, see **EVS Disk Status**.
metadata	String	No	The disk metadata.
availability_zone	String	No	The AZ information.

Request

The following example shows how to query details of the disks in the **available** state.

- Example request
  GET https://{endpoint}/v2/{project_id}/volumes/detail?status=available

Response

- Response parameters

Parameter	Type	Description
volumes	list	The list of queried disks. For details, see **Parameters in the volumes field**.
volumes_links	list	The query position marker in the disk list. If only some disks are returned in this query, the URL of the last disk queried will be returned. You can use this URL to continue to query the remaining disks in the next query. For details, see **Parameters in the links field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volumes** field

Parameter	Type	Description
id	String	The disk ID.
links	list<map<String,String>>	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	list	The disk attachment information. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.
os-vol-host-attr:host	String	The reserved field.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
size	Integer	The disk size, in GB.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**.
os-vol-mig-status-attr:migstat	String	The reserved field.

Parameter	Type	Description
os-vol-mig-status-attr:name_id	String	The reserved field.
os-volume-replication:extended_status	String	The reserved field.
encrypted	Boolean	This field is currently not supported.
replication_status	String	The reserved field.
user_id	String	The reserved field.
consistencygroup_id	String	The ID of the consistency group where the disk belongs. This field is currently not supported.
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
shareable	String	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
volume_image_metadata	Object	The metadata of the disk image. This field has a value if the disk is created from an image. Or, it is left empty. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "volumes": [
      {
         "attachments": [ ],
         "availability_zone": "az-dc-1",
         "bootable": "false",
         "consistencygroup_id": null,
         "created_at": "2016-05-25T02:42:10.856332",
         "description": null,
         "encrypted": false,
         "id": "b104b8db-170d-441b-897a-3c8ba9c5a214",
         "links": [
            {
               "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
```



```
volumes/b104b8db-170d-441b-897a-3c8ba9c5a214",
                    "rel": "self"
                },
                {
                    "href": "https://volume.localdomain.com:8776/dd14c6ac581f40059e27f5320b60bf2f/
volumes/b104b8db-170d-441b-897a-3c8ba9c5a214",
                    "rel": "bookmark"
                }
            ],
            "metadata": {},
            "name": "zjb_u25_test",
            "os-vol-host-attr:host": "pod01.xxx#SAS",
            "volume_image_metadata": { },
            "os-vol-mig-status-attr:migstat": null,
            "os-vol-mig-status-attr:name_id": null,
            "os-vol-tenant-attr:tenant_id": "dd14c6ac581f40059e27f5320b60bf2f",
            "os-volume-replication:extended_status": null,
            "replication_status": "disabled",
            "multiattach": false,
            "size": 1,
            "snapshot_id": null,
            "source_volid": null,
            "status": "available",
            "updated_at": "2016-05-25T02:42:22.341984",
            "user_id": "b0524e8342084ef5b74f158f78fc3049",
            "volume_type": "SAS"
        }
    ],
    "volumes_links": [
        {
            "href": "https://volume.localdomain.com:8776/v2/dd14c6ac581f40059e27f5320b60bf2f/
volumes/detail?limit=1&marker=b104b8db-170d-441b-897a-3c8ba9c5a214",
            "rel": "next"
        }
    ]
}
```


or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.6 Querying Details About a Disk

Function

This API is used to query details about a disk.

URI

- URI format

  GET /v2/{project_id}/volumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214
```

Response

- Response parameters

Parameter	Type	Description
volume	Object	The queried disk. For details, see **Parameters in the volume field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume** field

Parameter	Type	Description
id	String	The disk ID.
links	list<map<String, String>>	The disk URI. For details, see **Parameters in the links field**.
name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.

Parameter	Type	Description
attachments	list<map<String, String>>	The disk attachment information. For details, see **Parameters in the attachments field**.
availability_zone	String	The AZ to which the disk belongs.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
description	String	The disk description.
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
volume_image_metadata	Object	The metadata of the disk image. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_type	String	The disk type. The value can be **SSD** or **SAS**. • **SSD**: the ultra-high I/O type • **SAS**: the high I/O type
size	Integer	The disk size, in GB.
bootable	String	Whether the disk is bootable. • **true**: indicates a bootable disk. • **false**: indicates a non-bootable disk.
metadata	Object	The disk metadata. For details, see **Parameters in the metadata field**.
os-vol-host-attr:host	String	The reserved field.
encrypted	Boolean	This field is currently not supported.

Parameter	Type	Description
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
os-volume-replication:extended_status	String	The reserved field.
replication_status	String	The reserved field.
os-vol-mig-status-attr:migstat	String	The reserved field.
consistencygroup_id	String	The reserved field.
os-vol-mig-status-attr:name_id	String	The reserved field.
shareable	Boolean	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
user_id	String	The reserved field.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
storage_cluster_id	String	The reserved field.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.

Parameter	Type	Description
attached_at	String	The time when the disk was attached.
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume": {
        "attachments": [ ],
        "links": [
            {
                "href": "https://volume.az0.dc1.domainname.com/v2/40acc331ac784f34842ba4f08ff2be48/
volumes/591ac654-26d8-41be-bb77-4f90699d2d41",
                "rel": "self"
            },
            {
                "href": "https://volume.az0.dc1.domainname.com/40acc331ac784f34842ba4f08ff2be48/
volumes/591ac654-26d8-41be-bb77-4f90699d2d41",
                "rel": "bookmark"
            }
        ],
        "availability_zone": "az-dc-1",
        "os-vol-host-attr:host": "az-dc-1#SSD",
        "encrypted": false,
        "multiattach": true,
        "updated_at": "2016-02-03T02:19:29.895237",
        "os-volume-replication:extended_status": null,
        "replication_status": "disabled",
        "snapshot_id": null,
        "id": "591ac654-26d8-41be-bb77-4f90699d2d41",
        "size": 40,
```



```
        "user_id": "fd03ee73295e45478d88e15263d2ee4e",
        "os-vol-tenant-attr:tenant_id": "40acc331ac784f34842ba4f08ff2be48",
        "volume_image_metadata": null,
        "os-vol-mig-status-attr:migstat": null,
        "metadata": {},
        "status": "error_restoring",
        "description": "auto-created_from_restore_from_backup",
        "source_volid": null,
        "consistencygroup_id": null,
        "os-vol-mig-status-attr:name_id": null,
        "name": "restore_backup_0115efb3-678c-4a9e-bff6-d3cd278238b9",
        "bootable": "false",
        "created_at": "2016-02-03T02:19:11.723797",
        "volume_type": null
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badrequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.7 Querying EVS Disk Types

Function

This API is used to query EVS disk types and display the query results in a list.

URI

- URI format

  GET /v2/{project_id}/types

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Example request
  ```
  GET https://{endpoint}/v2/{project_id}/types
  ```

Response

- Response parameters

Parameter	Type	Description
volume_types	list	The list of queried disk types. For details, see **Parameters in the volume_types field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume_types** field

Parameter	Type	Description
extra_specs	Object	The disk type specifications. For details, see **Parameters in the extra_specs field**.
name	String	The disk type name.
id	String	The disk type ID.
description	String	The disk type description.
qos_specs_id	String	The reserved field.
is_public	Boolean	The reserved field.

- Parameters in the **extra_specs** field

Parameter	Type	Description
volume_backend_name	String	The reserved field.
availability-zone	String	The reserved field.

Parameter	Type	Description
HW:availability_zone	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume_types": [
        {
            "extra_specs": {
                "volume_backend_name": "SAS",
                "availability-zone": "az-dc-1"
            },
            "name": "SAS",
            "qos_specs_id": null,
            "id": "6c81c680-df58-4512-81e7-ecf66d160638",
            "is_public": true,
            "description": null
        },
        {
            "extra_specs": {
                "volume_backend_name": "SAS",
                "availability-zone": "az-dc-1"
            },
            "name": "SAS",
            "qos_specs_id": "585f29d6-7147-42e7-bfb8-ca214f640f6f",
            "is_public": true,
            "id": "ea6e3c13-aac5-46e0-b280-745ed272e662",
            "description": null
        },
        {
            "extra_specs": {
                "volume_backend_name": "SSD",
                "availability-zone": "az-dc-1"
            },
            "name": "SSD",
            "qos_specs_id": "39b0c29a-308b-4f86-b478-5d3d02a43837",
            "is_public": true,
            "id": "6f2dee9e-82f0-4be3-ad89-bae605a3d24f",
            "description": null
        }
    ]
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
   "badrequest": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.8 Querying Details About an EVS Disk Type

Function

This API is used to query details about an EVS disk type.

URI

- URI format

  GET /v2/{project_id}/types/{type_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
type_id	Yes	Specifies the disk type ID.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/types/6c81c680-df58-4512-81e7-ecf66d160638
```

Response

- Parameter description

Parameter	Type	Description
volume_type	Object	Specifies the details of queried disk types. For details, see **Parameters in the volume_type field**.

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume_type** field

Parameter	Type	Description
extra_specs	Object	Specifies the disk type specifications. For details, see **Parameters in the extra_specs field**.
name	String	Specifies the name of the disk type.
id	String	Specifies the ID of the disk type.
description	String	Specifies the description of the disk type.
qos_specs_id	String	The reserved field.
is_public	Boolean	The reserved field.

- Parameters in the **extra_specs** field

Parameter	Type	Description
volume_backend_name	String	The reserved field.
availability-zone	String	The reserved field.
HW:availability_zone	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume_type": {
        "extra_specs": {
            "volume_backend_name": "SAS",
            "availability-zone": "az-dc-1"
        },
```



```
        "name": "SAS",
        "qos_specs_id": null,
        "is_public": true,
        "id": "ea6e3c13-aac5-46e0-b280-745ed272e662",
        "description": null
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badrequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.9 Querying Details of Tenant Quotas

URI

- URI format

  GET /v2/{project_id}/os-quota-sets/{target_project_id}?usage=True

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
target_project_id	Yes	The ID of the target project. Set this parameter to the value of **project_id**.
usage	Yes	Whether to query quota details. Only value **true** is supported currently.

Request

- Example request
  GET https://{endpoint}/v2/{project_id}/os-quota-sets/{project_id}?usage=True

Response

- Response parameters

Parameter	Type	Description
quota_set	Object	The returned quota information. For details, see **Parameters in the quota_set field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **quota_set** field

Parameter	Type	Description
volumes	Object	The number of disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailVolumes field**.
snapshots	Object	The number of snapshots. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailSnapshots field**.
gigabytes	Object	The total size (GB) of disks and snapshots allowed. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailGigabytes field**.
volumes_SSD	Object	The number of reserved ultra-high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailVolumesSSD field**.

Parameter	Type	Description
volumes_SAS	Object	The number of reserved high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailVolumesSAS field**.
volumes_SATA	Object	The number of reserved common I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailVolumesSATA field**.
volumes_ESSD	Object	The number of reserved extreme SSD disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailVolumesESSD field**.
snapshots_SSD	Object	The number of snapshots reserved for ultra-high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailSnapshotsSSD field**.
snapshots_SAS	Object	The number of snapshots reserved for high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailSnapshotsSAS field**.
snapshots_SATA	Object	The number of snapshots reserved for common I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailSnapshotsSATA field**.

Parameter	Type	Description
snapshots_ESSD	Object	The number of snapshots reserved for extreme SSD disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailSnapshotsESSD field**.
gigabytes_SSD	Object	The size (GB) reserved for ultra-high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailGigabytesSSD field**.
gigabytes_SAS	Object	The size (GB) reserved for high I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailGigabytesSAS field**.
gigabytes_SATA	Object	The size (GB) reserved for common I/O disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailGigabytesSATA field**.
gigabytes_ESSD	Object	The size (GB) reserved for extreme SSD disks. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailGigabytesESSD field**.
id	String	The tenant ID. The tenant ID is the same as the project ID.
backups	Object	The number of backups. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailBackups field**.

Parameter	Type	Description
backup_gigabytes	Object	The backup size (GB). Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailBackupGigabytes field**.
per_volume_gigabytes	Object	The capacity quota of each disk. Sub-parameters include **reserved** (reserved quota), **limit** (maximum quota), and **in_use** (used quota). They are all made up of key-value pairs. See **Parameters in the QuotaDetailPerVolumeGigabytes field**.

NOTE

If the **limit** value returned in the response is **-1**, no quota limit has been set.

- Parameters in the **QuotaDetailBackupGigabytes** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailBackups** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailGigabytes** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailSnapshots** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailVolumes** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailGigabytesSATA** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailGigabytesESSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailSnapshotsSATA** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailSnapshotsESSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailVolumesSATA** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailVolumesESSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailGigabytesSAS** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailSnapshotsSAS** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailVolumesSAS** field

Parameter	Type	Description
in_use	Integer	The used quota.

Parameter	Type	Description
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailGigabytesSSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailSnapshotsSSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailVolumesSSD** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **QuotaDetailPerVolumeGigabytes** field

Parameter	Type	Description
in_use	Integer	The used quota.
limit	Integer	The maximum quota.
reserved	Integer	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.

Parameter	Type	Description
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response


```
{
    "quota_set": {
        "gigabytes_SAS": {
            "reserved": 0,
            "limit": -1,
            "in_use": 21
        },
        "gigabytes": {
            "reserved": 0,
            "limit": 42790,
            "in_use": 2792
        },
        "backup_gigabytes": {
            "reserved": 0,
            "limit": 5120,
            "in_use": 51
        },
        "snapshots_SAS": {
            "reserved": 0,
            "limit": -1,
            "in_use": 0
        },
        "volumes_SSD": {
            "reserved": 0,
            "limit": -1,
            "in_use": 28
        },
        "snapshots": {
            "reserved": 0,
            "limit": 10,
            "in_use": 6
        },
        "id": "cd631140887d4b6e9c786b67a6dd4c02",
        "volumes_SAS": {
            "reserved": 0,
            "limit": -1,
            "in_use": 2
        },
        "snapshots_SSD": {
            "reserved": 0,
            "limit": -1,
            "in_use": 0
        },
        "volumes": {
            "reserved": 0,
            "limit": -1,
            "in_use": 108
        },
        "backups": {
            "reserved": 0,
            "limit": 100,
            "in_use": 10
        },
        "gigabytes_SSD": {
            "reserved": 0,
            "limit": -1,
            "in_use": 1085
        }
```



```
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badrequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.10 Adding the Metadata for an EVS Disk

Function

This API is used to add or update the metadata of an EVS disk.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/metadata

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
metadata	Map<String,String>	Yes	The metadata to be updated. For details, see **Parameter in the metadata field**. The length of **key** and **value** under **metadata** can contain no more than 255 bytes.

- Parameter in the **metadata** field

Parameter	Type	Mandatory	Description
key_val	String	No	The metadata information, which is made up of one or multiple key-value pairs.

- Example request

```
{
   "metadata": {
      "key1": "value1",
      "key2": "value2"
   }
}
```

Response

- Response parameters

Parameter	Type	Description
metadata	Object	The disk metadata, which is made up of key-value pairs.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "metadata": {
```



```
        "key1": "value1",
        "key2": "value2"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badrequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.11 Querying Metadata of an EVS Disk

Function

This API is used to query the metadata of an EVS disk.

URI

- URI format

  GET /v2/{project_id}/volumes/{volume_id}/metadata

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/volumes/{volume_id}/metadata
```


Response

- Parameter description

Parameter	Type	Description
metadata	Object	Specifies the disk metadata, which is made up of key-value pairs.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "metadata": {
      "key1": "value1",
      "key2": "value2"
   }
}
```

or

```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
   "badrequest": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.12 Updating the Metadata of an EVS Disk

Function

This API is used to update the metadata of an EVS disk.

URI

- URI format

  PUT /v2/{project_id}/volumes/{volume_id}/metadata

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
metadata	Map<String,String>	Yes	The metadata to be updated. For details, see **Parameter in the metadata field**. The length of **key** and **value** under **metadata** can contain no more than 255 bytes.

- Parameter in the **metadata** field

Parameter	Type	Mandatory	Description
key_val	String	No	The metadata information, which is made up of one or multiple key-value pairs.

- Example request

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```


Response

- Response parameters

Parameter	Type	Description
metadata	Object	The disk metadata, which is made up of key-value pairs.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "metadata": {
      "key1": "value1",
      "key2": "value2"
   }
}
```

or

```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
   "badrequest": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.13 Querying One Piece of Metadata for an EVS Disk

Function

This API is used to query one piece of the EVS disk metadata.

URI

- URI format

  GET /v2/{project_id}/volumes/{volume_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.
key	Yes	Specifies the key of the piece of metadata to be queried.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/metadata/value1
```

Response

- Parameter description

Parameter	Type	Description
meta	Object	Specifies a piece of the disk metadata, which is made up of a key-value pair.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.

Parameter	Type	Description
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "meta": {
        "key1": "value1"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.14 Updating One Piece of Metadata for an EVS Disk

Function

This API is used to update one piece of the EVS disk metadata.

URI

- URI format

  PUT /v2/{project_id}/volumes/{volume_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.
key	Yes	Specifies the key of the piece of metadata to be updated.

Request

- Parameter description

Parameter	Type	Mandatory	Description
meta	Object	Yes	Specifies the disk metadata to be updated. For details, see **Parameter in the meta field**.

- Parameter in the **meta** field

Parameter	Type	Mandatory	Description
key_val	String	No	Specifies a piece of metadata, which is made up of a key-value pair.

- Example request

```
{
   "meta": {
      "key1": "value1"
   }
}
```

Response

- Parameter description

Parameter	Type	Description
meta	Object	Specifies a piece of the disk metadata, which is made up of a key-value pair.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "meta": {
        "key1": "value1"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.15 Deleting One Piece of Metadata for an EVS Disk

Function

This API is used to delete one piece of the EVS disk metadata.

URI

- URI format

  DELETE /v2/{project_id}/volumes/{volume_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.
key	Yes	Specifies the key of the piece of metadata to be deleted.

Request

- Example request

```
DELETE https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/metadata/value1
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
```



```
    "code": "XXX"
  }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.1.16 Querying Extension APIs

Function

This API is used to query extension APIs.

URI

- URI format

  GET /v2/{project_id}/extensions

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/extensions
```

Response

- Parameter description

Parameter	Type	Description
extensions	list	Specifies the extension APIs. For details, see **Parameters in the extensions field**.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **extensions** field

Parameter	Type	Description
updated	String	Specifies the last update time. Time format: UTC YYYY-MM-DDTHH:MM:SS.+XX.XX
description	String	Specifies the description.
links	list<map<String,String>>	The reserved field.
alias	String	Specifies the extension parameter alias.
name	String	Specifies the extension parameter name.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "extensions": [
      {
         "updated": "2013-04-18T00:00:00+00:00",
         "name": "SchedulerHints",
         "links": [ ],
         "alias": "OS-SCH-HNT",
         "description": "Pass arbitrary key/value pairs to the scheduler."
      },
      {
         "updated": "2011-06-29T00:00:00+00:00",
         "name": "Hosts",
         "links": [ ],
         "alias": "os-hosts",
         "description": "Admin-only host administration."
      },
      {
         "updated": "2011-11-03T00:00:00+00:00",
         "name": "VolumeTenantAttribute",
         "links": [ ],
         "alias": "os-vol-tenant-attr",
         "description": "Expose the internal project_id as an attribute of a volume."
      },
      {
         "updated": "2011-08-08T00:00:00+00:00",
         "name": "Quotas",
         "links": [ ],
         "alias": "os-quota-sets",
         "description": "Quota management support."
      },
      {
         "updated": "2011-08-24T00:00:00+00:00",
         "name": "TypesManage",
         "links": [ ],
```



```
        "alias": "os-types-manage",
        "description": "Types manage support."
    },
    {
        "updated": "2013-07-10T00:00:00+00:00",
        "name": "VolumeEncryptionMetadata",
        "links": [ ],
        "alias": "os-volume-encryption-metadata",
        "description": "Volume encryption metadata retrieval support."
    },
    {
        "updated": "2012-12-12T00:00:00+00:00",
        "name": "Backups",
        "links": [ ],
        "alias": "backups",
        "description": "Backups support."
    },
    {
        "updated": "2013-07-16T00:00:00+00:00",
        "name": "SnapshotActions",
        "links": [ ],
        "alias": "os-snapshot-actions",
        "description": "Enable snapshot manager actions."
    },
    {
        "updated": "2012-05-31T00:00:00+00:00",
        "name": "VolumeActions",
        "links": [ ],
        "alias": "os-volume-actions",
        "description": "Enable volume actions
"
    },
    {
        "updated": "2013-10-03T00:00:00+00:00",
        "name": "UsedLimits",
        "links": [ ],
        "alias": "os-used-limits",
        "description": "Provide data on limited resources that are being used."
    },
    {
        "updated": "2012-05-31T00:00:00+00:00",
        "name": "VolumeUnmanage",
        "links": [ ],
        "alias": "os-volume-unmanage",
        "description": "Enable volume unmanage operation."
    },
    {
        "updated": "2011-11-03T00:00:00+00:00",
        "name": "VolumeHostAttribute",
        "links": [ ],
        "alias": "os-vol-host-attr",
        "description": "Expose host as an attribute of a volume."
    },
    {
        "updated": "2013-07-01T00:00:00+00:00",
        "name": "VolumeTypeEncryption",
        "links": [ ],
        "alias": "encryption",
        "description": "Encryption support for volume types."
    },
    {
        "updated": "2013-06-27T00:00:00+00:00",
        "name": "AvailabilityZones",
        "links": [ ],
        "alias": "os-availability-zone",
        "description": "Describe Availability Zones."
    },
    {
        "updated": "2013-08-02T00:00:00+00:00",
```



```
        "name": "Qos_specs_manage",
        "links": [ ],
        "alias": "qos-specs",
        "description": "QoS specs support."
    },
    {
        "updated": "2011-08-24T00:00:00+00:00",
        "name": "TypesExtraSpecs",
        "links": [ ],
        "alias": "os-types-extra-specs",
        "description": "Type extra specs support."
    },
    {
        "updated": "2013-08-08T00:00:00+00:00",
        "name": "VolumeMigStatusAttribute",
        "links": [ ],
        "alias": "os-vol-mig-status-attr",
        "description": "Expose migration_status as an attribute of a volume."
    },
    {
        "updated": "2012-08-13T00:00:00+00:00",
        "name": "CreateVolumeExtension",
        "links": [ ],
        "alias": "os-image-create",
        "description": "Allow creating a volume from an image in the Create Volume v1 API."
    },
    {
        "updated": "2014-01-10T00:00:00-00:00",
        "name": "ExtendedServices",
        "links": [ ],
        "alias": "os-extended-services",
        "description": "Extended services support."
    },
    {
        "updated": "2012-06-19T00:00:00+00:00",
        "name": "ExtendedSnapshotAttributes",
        "links": [ ],
        "alias": "os-extended-snapshot-attributes",
        "description": "Extended SnapshotAttributes support."
    },
    {
        "updated": "2012-12-07T00:00:00+00:00",
        "name": "VolumeImageMetadata",
        "links": [ ],
        "alias": "os-vol-image-meta",
        "description": "Show image metadata associated with the volume."
    },
    {
        "updated": "2012-03-12T00:00:00+00:00",
        "name": "QuotaClasses",
        "links": [ ],
        "alias": "os-quota-class-sets",
        "description": "Quota classes management support."
    },
    {
        "updated": "2013-05-29T00:00:00+00:00",
        "name": "VolumeTransfer",
        "links": [ ],
        "alias": "os-volume-transfer",
        "description": "Volume transfer management support."
    },
    {
        "updated": "2014-02-10T00:00:00+00:00",
        "name": "VolumeManage",
        "links": [ ],
        "alias": "os-volume-manage",
        "description": "Allows existing backend storage to be 'managed' by Cinder."
    },
    {
```



```
            "updated": "2012-08-25T00:00:00+00:00",
            "name": "AdminActions",
            "links": [ ],
            "alias": "os-admin-actions",
            "description": "Enable admin actions."
        },
        {
            "updated": "2012-10-28T00:00:00-00:00",
            "name": "Services",
            "links": [ ],
            "alias": "os-services",
            "description": "Services support."
        }
    ]
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

7.1.17 Querying All AZs

Function

This API is used to query all AZs.

URI

- URI format
  GET /v2/{project_id}/os-availability-zone
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Example request
  GET https://{endpoint}/v2/{project_id}/os-availability-zone

Response

- Parameter description

Parameter	Type	Description
availabilityZoneInfo	list	Specifies the list of queried AZs. For details, see **Parameters in the availabilityZoneInfo field**.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **availabilityZoneInfo** field

Parameter	Type	Description
zoneState	Object	Specifies the status of the AZ. For details, see **Parameter in the zoneState field**.
zoneName	String	Specifies the AZ name.

- Parameter in the **zoneState** field

Parameter	Type	Description
available	Boolean	Specifies whether the AZ is available. • **true**: available • **false**: unavailable

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.

Parameter	Type	Description
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "availabilityZoneInfo": [
      {
         "zoneState": {
            "available": true
         },
         "zoneName": "az-dc-1"
      }
   ]
}
```

or

```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

7.2 EVS Disk Actions

7.2.1 Expanding Capacity of an EVS Disk

Function

This API is used to expand the capacity of an EVS disk.

URI

- URI format
  POST /v2/{project_id}/volumes/{volume_id}/action
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the ID of the disk.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-extend	Object	Yes	Specifies the disk expansion marker. For details, see **Parameter in the os-extend field**.

- Parameter in the **os-extend** field

Parameter	Type	Mandatory	Description
new_size	Integer	Yes	Specifies the size of the disk after capacity expansion, in GB. The new disk size ranges from the original disk size to the maximum size (**32768** for a data disk and **1024** for a system disk).

- Example request

```
{
    "os-extend": {
        "new_size": 100
    }
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.2 Setting Bootable Flag for an EVS Disk

Function

This API is used to set the bootable flag for an EVS disk.

Constraints

A data disk cannot be used as system disk for an ECS even if this API has been called to set the bootable flag for it.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-set_bootable	Object	Yes	Specifies the disk bootable marker. For details, see **Parameter in the os-set_bootable field**.

- Parameter in the **os-set_bootable** field

Parameter	Type	Mandatory	Description
bootable	Boolean	Yes	Specifies whether to set the bootable flag for the disk. • **false**: does not set the flag. • **true**: sets the flag.

- Example request

```
{
    "os-set_bootable": {
        "bootable": true
    }
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.2.3 Setting Read-Only Flag for an EVS Disk

Function

This API is used to set the read-only flag for the EVS disk.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-update_readonly_flag	Object	Yes	Specifies the disk read-only flag. For details, see **Parameter in the os-update_readonly_flag field**.

- Parameter in the **os-update_readonly_flag** field

Parameter	Type	Mandatory	Description
readonly	Boolean	Yes	Specifies the read-only flag. • **true**: specifies the disk is read-only. • **false**: specifies the disk is not read-only.

- Example request

```
{
    "os-update_readonly_flag": {
        "readonly": true
    }
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.4 Exporting EVS Disk Data as an Image

Function

This API is used to export the system disk data or data disk data as an IMS image. The exported image will be displayed in the IMS private image list and can be viewed and used.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
os-volume_upload_image	Object	Yes	The image export operation marker. For details, see **Parameters in the os-volume_upload_image field**.

- Parameters in the **os-volume_upload_image** field

Parameter	Type	Mandatory	Description
disk_format	String	No	The format of the image to be exported. The value can be **vhd**, **zvhd**, **zvhd2**, **raw**, or **qcow2**. The default value is **zvhd2**.
image_name	String	Yes	The name of the image to be exported. • It cannot start or end with space. • It can contain 1 to 128 characters. • It can contain the following characters: letters, digits, special characters including hyphens (-), periods (.), and underscores (_), and spaces.

Parameter	Type	Mandatory	Description
force	Boolean	No	Whether to forcibly export the image. The default value is **false**. • If this parameter is set to **false**, images cannot be forcibly exported when the disk status is **in-use**. • If this parameter is set to **true**, images can be forcibly exported even when the disk status is **in-use**.
container_format	String	No	The container type of the image to be exported. The value can be **ami**, **ari**, **aki**, **ovf**, or **bare**. The default value is **bare**.
__os_type	String	No	The OS type of the image to be exported. Only **windows** and **linux** are supported currently. The default value is **linux**. **NOTE** • There are two underscores (_) in front of **os** and one underscore (_) after **os**. • This parameter setting takes effect only when the **__os_type** field is not included in **volume_image_metadata** and the disk status is **available**. • If this parameter is not specified, default value **linux** is used.

- Example request

```
{
    "os-volume_upload_image": {
        "image_name": "sxmatch2",
        "force": true,
        "container_format": "bare",
        "disk_format": "vhd",
        "__os_type": "linux"
    }
}
```

Response

- Response parameters

Parameter	Type	Description
os-volume_upload_image	Object	The image export operation marker. For details, see **Parameters in the os-volume_upload_image field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **os-volume_upload_image** field

Parameter	Type	Description
status	String	The disk status after the image is exported. The correct value is **uploading**.
image_id	String	The ID of the exported image.
image_name	String	The name of the exported image.
volume_type	Object	The disk type information. For details, see **Parameters in the volume_type field**.
container_format	String	The container type of the exported image. The value can be **ami**, **ari**, **aki**, **ovf**, or **bare**. The default value is **bare**.
size	Integer	The disk size, in GB.
disk_format	String	The format of the exported image. The value can be **vhd**, **zvhd**, **zvhd2**, **raw**, or **qcow2**. The default value is **vhd**.
id	String	The disk ID.
display_description	String	The disk description.
updated_at	String	The time when the disk was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

- Parameters in the **volume_type** field

Parameter	Type	Description
id	String	The disk type ID.
name	String	The disk type name.
deleted	Boolean	Whether the disk has been deleted.
is_public	Boolean	The reserved field.

Parameter	Type	Description
extra_spec	Object	The disk type specifications. For details, see **Parameters in the extra_specs field**.
description	Integer	The disk type description.
created_at	String	The time when the disk type was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
updated_at	String	The time when the disk type was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
deleted_at	String	The time when the disk type was deleted. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

- Parameters in the **extra_specs** field

Parameter	Type	Description
volume_backend_name	String	The reserved field.
availability-zone	String	The reserved field.
HW:availability_zone	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "os-volume_upload_image": {
        "status": "uploading",
        "size": 40,
        "id": "16369c5d-384d-4e64-b37a-56d898769362",
        "image_id": "c5333daa-fbc8-4d1d-bf79-b0567bb45d15",
        "image_name": "evs-ims-test1027",
        "volume_type": {
            "description": "None",
            "deleted": false,
```



```
            "created_at": "2015-05-24T14:47:22.132268",
            "updated_at": "2017-07-29T11:29:33.730076",
            "extra_specs": {
                "volume_backend_name": "<or> iaas blockstorage_SAS <or> iaas blockstorage_SAS <or>
iaas blockstoragesas",
                "XX:availability_zone": "az-dc-1"
            },
            "is_public": true,
            "deleted_at": null,
            "id": "8247b6ed-37f0-4c48-8ef1-f0027fb332bc",
            "name": "SAS"
        },
        "container_format": "bare",
        "disk_format": "vhd",
        "display_description": "",
        "updated_at": "2018-01-11T01:50:25.800931"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.5 Attaching an EVS Disk (Deprecated)

Function

This API is only used to change the EVS disk status from **available** to **in-use**.

NOTICE

This API call exists for compatibility reasons only and is not meant to be used.

Constraints

Do not call this API to attach a disk. If you need to attach a disk, call the ECS Attach Volume API.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-attach	Object	Yes	Specifies the disk attachment marker. For details, see **Parameters in the os-attach field**.

- Parameters in the **os-attach** field

Parameter	Type	Mandatory	Description
instance_uuid	String	Yes	Specifies the UUID of the host to be attached to.
mountpoint	String	Yes	Specifies the device name.
host_name	String	No	Specifies the name of the host to be attached to. The value can contain a maximum of 255 bytes.
mode	String	No	Specifies the attachment mode. The value can be **rw** (read/write) or **ro** (read-only).

- Example request

```
POST https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/action
{
    "os-attach": {
        "instance_uuid": "95D9EF50-507D-11E5-B970-0800200C9A66",
        "mountpoint": "/dev/vdc"
    }
}
```


Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.6 Detaching an EVS Disk (Deprecated)

Function

This API is only used to change the EVS disk status from **in-use** to **available**.

NOTICE

This API call exists for compatibility reasons only and is not meant to be used.

Constraints

Do not call this API to detach a disk. If you need to detach a disk, call the ECS Detach Volume API.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-detach	Object	Yes	Specifies disk detachment marker.

- Parameter in the **os-detach** field

Parameter	Type	Mandatory	Description
attachment_id	String	No	Specifies the attachment ID. If the disk has only one attachment, this parameter is optional. If it has multiple attachments, the parameter is optional.

- Example request

```
POST https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/action
{
    "os-detach": {
        "attachment_id": "d8777f54-84cf-4809-a679-468ffed56cf1"
```



```
    }
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.7 Reserving an EVS Disk (Deprecated)

Function

This API is used to reserve an EVS disk.

NOTICE

This API call exists for compatibility reasons only and is not meant to be used.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-reserve	Object	Yes	Specifies disk reservation marker. Defining a value for this parameter is not mandatory, and you are advised to leave it blank.

- Example request

```
POST https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/action
{
    "os-reserve": {}
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.2.8 Canceling Reservation of an EVS Disk (Deprecated)

Function

This API is used to cancel the reservation of an EVS disk.

NOTICE

This API call exists for compatibility reasons only and is not meant to be used.

URI

- URI format

  POST /v2/{project_id}/volumes/{volume_id}/action

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	Specifies the disk ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
os-unreserve	Object	Yes	Specifies disk reservation canceling marker. Defining a value for this parameter is not mandatory, and you are advised to leave it blank.

- Example request

```
POST https://{endpoint}/v2/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214/action
{
    "os-unreserve": {}
}
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.3 EVS Snapshot

7.3.1 Creating an EVS Snapshot

Function

This API is used to create an EVS snapshot.

URI

- URI format

  POST /v2/{project_id}/snapshots

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Parameter description

Parameter	Type	Mandatory	Description
snapshot	Object	Yes	Specifies the information of the snapshot to be created. For details, see **Parameters in the snapshot field**.

- Parameters in the **snapshot** field

Parameter	Type	Mandatory	Description
volume_id	String	Yes	Specifies the ID of the snapshot's source disk.
force	Boolean	No	Specifies the flag for forcibly creating a snapshot. The default value is **false**. • If this parameter is set to **false** and the disk is in the **attaching** state, the snapshot cannot be forcibly created. • If this parameter is set to **true** and the disk is in the **attaching** state, the snapshot can be forcibly created.
metadata	Object	No	Specifies the snapshot metadata.
description	String	No	Specifies the snapshot description. The value can be **null**. The value can contain a maximum of 255 bytes.

Parameter	Type	Mandatory	Description
name	String	No	Specifies the snapshot name. The value can contain a maximum of 255 bytes. **NOTE** When creating a backup for a disk, a snapshot will be created and named with prefix **autobk_snapshot_**. The EVS console has imposed operation restrictions on snapshots with prefix **autobk_snapshot_**. Therefore, you are advised not to use **autobk_snapshot_** as the name prefix for the snapshots you created. Otherwise, the snapshots cannot be used normally.

- Example request

```
{
    "snapshot": {
        "name": "snap-001",
        "description": "Daily backup",
        "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
        "force": false,
        "metadata": { }
    }
}
```

Response

- Parameter description

Parameter	Type	Description
snapshot	Object	Specifies the snapshot information. For details, see **Parameters in the snapshot field**.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **snapshot** field

Parameter	Type	Description
id	String	Specifies the snapshot ID.
status	String	Specifies the snapshot status. For details, see **EVS Snapshot Status**.
name	String	Specifies the snapshot name.
description	String	Specifies the snapshot description.

Parameter	Type	Description
created_at	String	Specifies the time when the snapshot was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
metadata	Object	Specifies the snapshot metadata.
volume_id	String	Specifies the ID of the snapshot's source disk.
size	Integer	Specifies the snapshot size, in GB.
updated_at	String	Specifies the time when the snapshot was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
os-extended-snapshot-attributes:progress	String	Reserved field
os-extended-snapshot-attributes:project_id	String	Reserved field

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "snapshot": {
        "status": "creating",
        "description": "Daily backup",
        "created_at": "2013-02-25T03:56:53.081642",
        "metadata": { },
        "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
        "size": 1,
        "id": "ffa9bc5e-1172-4021-acaf-cdcd78a9584d",
        "name": "snap-001",
        "updated_at": "2013-02-25T03:56:53.081642"
    }
}
```

or


```
{
   "error": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
   "itemNotFound": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.3.2 Deleting an EVS Snapshot

Function

This API is used to delete an EVS snapshot.

Constraints

- A snapshot can be deleted only when it is in the **available** or **error** state.

URI

- URI format

  DELETE /v2/{project_id}/snapshots/{snapshot_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.

Request

- Example request

```
DELETE https://{endpoint}/v2/{project_id}/snapshots/f9faf7df-fdc1-4093-9ef3-5cba06eef995
```


Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.3.3 Updating an EVS Snapshot

Function

This API is used to update an EVS snapshot.

URI

- URI format

  PUT /v2/{project_id}/snapshots/{snapshot_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	The snapshot ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
snapshot	Object	Yes	The information of the snapshot to be updated. For details, see **Parameters in the snapshot field**.

- Parameters in the **snapshot** field

Parameter	Type	Mandatory	Description
name	String	No	The snapshot name, which can contain a maximum of 255 bytes. **NOTE** When a disk backup is created, a snapshot will also be created and named with the **autobk_snapshot_** prefix. Operations cannot be performed on such snapshots. Therefore, you are advised not to use **autobk_snapshot_** as the prefix of snapshot names to avoid any inconvenience.
description	String	No	The snapshot description, which can contain a maximum of 255 bytes.

- Example request

```
{
    "snapshot": {
        "name": "snap-001",
        "description": "Daily backup"
    }
}
```


Response

- Response parameters

Parameter	Type	Description
snapshot	Object	The snapshot information. For details, see **Parameters in the snapshot field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **snapshot** field

Parameter	Type	Description
id	String	The snapshot ID.
status	String	The snapshot status. For details, see **EVS Snapshot Status**.
name	String	The snapshot name.
description	String	The snapshot description.
created_at	String	The time when the snapshot was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
metadata	Object	The snapshot metadata.
volume_id	String	The ID of the snapshot's source disk.
size	Integer	The snapshot size, in GB.
updated_at	String	The time when the snapshot was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
os-extended-snapshot-attributes:progress	String	The reserved field.
os-extended-snapshot-attributes:project_id	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "snapshot": {
        "status": "available",
        "description": "Daily backup",
        "created_at": "2013-02-25T03:56:53.081642",
        "metadata": { },
        "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
        "size": 1,
        "id": "f9faf7df-fdc1-4093-9ef3-5cba06eef995",
        "name": "snap-001",
        "updated_at": "2013-02-25T03:56:53.081642"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.4 Querying EVS Snapshots

Function

This API is used to query the EVS snapshots.

URI

- URI format

  GET /v2/{project_id}/snapshots

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
marker	String	No	The ID of the resource from which the pagination query starts. It is the ID of the last resource on the previous page.
offset	Integer	No	Specifies the offset. **NOTE** This parameter is used when snapshots are queried by page and is used together with the **limit** parameter. For example, there are a total of 30 snapshots. If you set **offset** to **11** and **limit** to **10**, the queried snapshot starts from the twelfth snapshot, and at most 10 snapshots can be queried at a time.
limit	Integer	No	Specifies the maximum number of query results that can be returned. The value ranges from 1 to 1000, and the default value is 1000. The returned value cannot exceed this limit. If the tenant has more than 50 snapshots in total, you are advised to use this parameter and set its value to **50** to improve the query efficiency. Examples are provided as follows: **GET /v2/*xxx*/snapshots?limit=50**: Queries the 1–50 snapshots. **GET /v2/*xxx*/snapshots?offset=50&limit=50**: Queries the 51–100 snapshots.

Parameter	Type	Mandatory	Description
name	String	No	Specifies the snapshot name. This parameter does not support fuzzy search. The value can contain a maximum of 255 bytes.
status	String	No	Specifies the snapshot status. For details, see **EVS Snapshot Status**.
volume_id	String	No	Specifies the ID of the snapshot's source disk.

Request

The following example shows how to query the snapshots in the **available** state.

- Example request
  ```
  GET https://{endpoint}/v2/{project_id}/snapshots?status=available
  ```

Response

- Parameter description

Parameter	Type	Description
snapshots	Object	Specifies the snapshot information. For details, see **Parameters in the snapshots field**.
snapshots_links	list<map<String,String>>	Specifies the query position marker in the snapshot list. This parameter is at the same level as parameter **snapshots** in the response body. This parameter is returned only when parameter **limit** is specified in the request, and this parameter indicates that only some snapshots are returned in this query.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **snapshots** field

Parameter	Type	Description
id	String	Specifies the snapshot ID.
status	String	Specifies the snapshot status. For details, see **EVS Snapshot Status**.
name	String	Specifies the snapshot name.

Parameter	Type	Description
description	String	Specifies the snapshot description.
created_at	String	Specifies the time when the snapshot was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
metadata	Object	Specifies the snapshot metadata. If **metadata** contains the **__system__enableActive** field, the snapshot is automatically created during the backup of a server.
volume_id	String	Specifies the ID of the snapshot's source disk.
size	Integer	Specifies the snapshot size, in GB.
updated_at	String	Specifies the time when the snapshot was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
   "snapshots": [
      {
         "created_at": "2016-02-16T16:54:14.981520",
         "description": null,
         "id": "b836dc3d-4e10-4ea4-a34c-8f6b0460a583",
         "metadata": { },
         "name": "test01",
         "size": 1,
         "status": "available",
         "volume_id": "ba5730ea-8621-4ae8-b702-ff0ffc12c209",
         "updated_at": null
      },
      {
         "created_at": "2016-02-16T16:54:19.475397",
         "description": null,
         "id": "83be494d-329e-4a78-8ac5-9af900f48b95",
         "metadata": { },
         "name": "test02",
         "size": 1,
```



```
            "status": "available",
            "volume_id": "ba5730ea-8621-4ae8-b702-ff0ffc12c209",
            "updated_at": null
        },
        {
            "created_at": "2016-02-16T16:54:24.367414",
            "description": null,
            "id": "dd360f46-7593-4d35-8f2c-5566fd0bd79e",
            "metadata": { },
            "name": "test03",
            "size": 1,
            "status": "available",
            "volume_id": "ba5730ea-8621-4ae8-b702-ff0ffc12c209",
            "updated_at": null
        },
        {
            "created_at": "2016-02-16T16:54:29.766740",
            "description": null,
            "id": "4c29796a-8cf4-4482-9afc-e66da9a81240",
            "metadata": { },
            "name": "test04",
            "size": 1,
            "status": "available",
            "volume_id": "ba5730ea-8621-4ae8-b702-ff0ffc12c209",
            "updated_at": null
        }
    ],
    "snapshots_links": null
}
```


or


```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:


```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.5 Querying Details About EVS Snapshots

Function

This API is used to query details about the EVS snapshots.

URI

- URI format

  GET /v2/{project_id}/snapshots/detail

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
marker	String	No	The ID of the resource from which pagination query starts. It is the ID of the last resource on the previous page.
offset	Integer	No	The query offset. **NOTE** This parameter is used when snapshots are queried by page and is used together with the **limit** parameter. For example, there are a total of 30 snapshots. If you set **offset** to **11** and **limit** to **10**, the query starts from the twelfth snapshot, and a maximum of 10 snapshots can be queried at a time.
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from **1** to **1000**, and the default value is **1000**. The returned value cannot exceed this limit. If the tenant has more than 50 snapshots in total, you are advised to use this parameter and set its value to **50** to improve the query efficiency. Examples are provided as follows: **GET /v2/*xxx*/snapshots/detail?limit=50**: Queries the 1–50 snapshots. **GET /v2/*xxx*/snapshots/detail?offset=50&limit=50**: Queries the 51–100 snapshots.
name	String	No	The snapshot name, which can contain a maximum of 255 bytes.

Parameter	Type	Mandatory	Description
status	String	No	The snapshot status. For details, see **EVS Snapshot Status**.
volume_id	String	No	The ID of the snapshot's source disk.
availability_zone	String	No	The AZ where the snapshot's source disk belongs.

Request

The following example shows how to query details of the snapshots in the **available** state.

- Example request
  GET https://{endpoint}/v2/{project_id}/snapshots/detail?status=available

Response

- Response parameters

Parameter	Type	Description
snapshots	Object	The snapshot information. For details, see **Parameters in the snapshots field**.
snapshots_links	list<map<String,String>>	The query position marker in the snapshot list. This parameter is returned only when parameter **limit** is specified in the request, and this parameter indicates that only some snapshots are returned in this query.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **snapshots** field

Parameter	Type	Description
id	String	The snapshot ID.
status	String	The snapshot status. For details, see **EVS Snapshot Status**.
name	String	The snapshot name.
description	String	The snapshot description.
created_at	String	The time when the snapshot was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX

Parameter	Type	Description
updated_at	String	The time when the snapshot was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
metadata	Object	The snapshot metadata. If **metadata** contains the **__system__enableActive** field, the snapshot is automatically created during the backup of a server.
volume_id	String	The ID of the snapshot's source disk.
size	Integer	The snapshot size, in GB.
os-extended-snapshot-attributes:project_id	String	The tenant ID, which is the same as the project ID.
os-extended-snapshot-attributes:progress	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "snapshots": [
        {
            "status": "available",
            "os-extended-snapshot-attributes:progress": "100%",
            "description": null,
            "created_at": "2013-06-19T07:15:29.000000",
            "metadata": { },
            "volume_id": "ae11e59c-bd56-434a-a00c-04757e1c066d",
            "os-extended-snapshot-attributes:project_id": "d6c277ba8820452e83df36f33c9fa561",
            "size": 5,
            "id": "6cd26877-3ca3-4f4e-ae2a-38cc3d6183fa",
            "name": "name_xx2-snap",
            "updated_at": null
        },
        {
            "status": "available",
            "os-extended-snapshot-attributes:progress": "100%",
            "description": null,
```



```
            "created_at": "2013-06-19T09:08:08.000000",
            "metadata": { },
            "volume_id": "ae11e59c-bd56-434a-a00c-04757e1c066d",
            "os-extended-snapshot-attributes:project_id": "d6c277ba8820452e83df36f33c9fa561",
            "size": 5,
            "id": "b3253e26-5c37-48dd-8bf2-8795dd1e848f",
            "name": "name_xx2-snap",
            "updated_at": null
        }
    ]
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.6 Querying Details About an EVS Snapshot

Function

This API is used to query details about an EVS snapshot.

URI

- URI format

  GET /v2/{project_id}/snapshots/{snapshot_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.

Request

- Example request
  GET https://{endpoint}/v2/{project_id}/snapshots/f9faf7df-fdc1-4093-9ef3-5cba06eef995

Response

- Parameter description

Parameter	Type	Description
snapshot	Object	Specifies the snapshot information. For details, see **Parameters in the snapshot field**.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **snapshot** field

Parameter	Type	Description
id	String	Specifies the snapshot ID.
status	String	Specifies the snapshot status. For details, see **EVS Snapshot Status**.
name	String	Specifies the snapshot name. Snapshots whose names started with prefix **autobk_snapshot_** are automatically created by the system during backup creations. Do not delete these snapshots or use them to roll back the disk data.
description	String	Specifies the snapshot description.
created_at	String	Specifies the time when the snapshot was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
updated_at	String	Specifies the time when the snapshot was updated. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
metadata	Object	Specifies the snapshot metadata. If **metadata** contains the **__system__enableActive** field, the snapshot is automatically created during the backup of a server.

Parameter	Type	Description
volume_id	String	Specifies the ID of the snapshot's source disk.
size	Integer	Specifies the snapshot size, in GB.
os-extended-snapshot-attributes:project_id	String	Specifies the tenant ID. The tenant ID is the same as the project ID.
os-extended-snapshot-attributes:progress	String	The reserved field.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "snapshot": {
        "status": "available",
        "os-extended-snapshot-attributes:progress": "100%",
        "description": "daily backup",
        "created_at": "2013-02-25t04:13:17.000000",
        "metadata": {},
        "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
        "os-extended-snapshot-attributes:project_id": "0c2eba2c5af04d3f9e9d0d410b371fde",
        "size": 1,
        "id": "2bb856e1-b3d8-4432-a858-09e4ce939389",
        "name": "snap-001",
        "updated_at": null

    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
```



```
    }
}
```

Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

7.3.7 Adding Metadata of an EVS Snapshot

Function

This API is used to add the metadata of an EVS snapshot.

URI

- URI format
  POST /v2/{project_id}/snapshots/{snapshot_id}/metadata
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.

Request

- Parameter description

Parameter	Type	Mandatory	Description
metadata	Object	Yes	Specifies the metadata to be added. For details, see **Parameter in the metadata field**.

- Parameter in the **metadata** field

Parameter	Type	Mandatory	Description
key_val	String	No	Specifies the metadata information, which is made up of one or multiple key-value pairs.

- Example request

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```

Response

- Parameter description

Parameter	Type	Description
metadata	Object	Specifies the snapshot metadata, which is made up of key-value pairs.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


Status Codes

- Normal
  200

Error Codes

For details, see **Error Codes**.

7.3.8 Querying Metadata of an EVS Snapshot

Function

This API is used to query the metadata of an EVS snapshot.

URI

- URI format
  GET /v2/{project_id}/snapshots/{snapshot_id}/metadata
- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.

Request

- Example request
  GET https://{endpoint}/v2/{project_id}/snapshots/f9faf7df-fdc1-4093-9ef3-5cba06eef995/metadata

Response

- Parameter description

Parameter	Type	Description
metadata	Object	Specifies the snapshot metadata, which is made up of key-value pairs. If **metadata** contains the **__system__enableActive** field, the snapshot is automatically created during the backup of a server.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.9 Updating One Piece of Metadata for an EVS Snapshot

Function

This API is used to update one piece of the EVS snapshot metadata.

URI

- URI format

  PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	The snapshot ID.
key	Yes	The key of the metadata to be updated.

Request

- Request parameters

Parameter	Type	Mandatory	Description
meta	Object	Yes	The metadata to be updated. For details, see **Parameter in the metadata field**.

- Parameter in the **metadata** field

Parameter	Type	Mandatory	Description
key_val	String	No	A piece of metadata, which is made up of a key-value pair.

- Example request

```
{
    "meta": {
        "key1": "value1"
    }
}
```

Response

- Response parameters

Parameter	Type	Description
meta	Object	A piece of snapshot metadata, which is made up of a key-value pair.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "meta": {
        "key1": "value1"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.10 Updating the Metadata of an EVS Snapshot

Function

This API is used to update the metadata of an EVS snapshot.

URI

- URI format

  PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	The snapshot ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
metadata	Object	Yes	The metadata to be updated. For details, see **Parameter in the metadata field**.

- Parameter in the **metadata** field

Parameter	Type	Mandatory	Description
key_val	String	No	The metadata information, which is made up of one or multiple key-value pairs.

- Example request

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```

Response

- Response parameters

Parameter	Type	Description
metadata	Object	The snapshot metadata, which is made up of key-value pairs.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "metadata": {
        "key1": "value1",
        "key2": "value2"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "badRequest": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.11 Querying One Piece of Metadata for an EVS Snapshot

Function

This API is used to query one piece of the EVS snapshot metadata.

URI

- URI format

  GET /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.
key	Yes	Specifies the key of the piece of metadata to be queried.

Request

- Example request

```
GET https://{endpoint}/v2/{project_id}/snapshots/f9faf7df-fdc1-4093-9ef3-5cba06eef995/metadata/value1
```

Response

- Parameter description

Parameter	Type	Description
meta	Object	Specifies a piece of snapshot metadata, which is made up of a key-value pair.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "meta": {
        "key1": "value1"
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```


In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
   "badRequest": {
      "message": "XXXX",
      "code": "XXX"
   }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.3.12 Deleting One Piece of Metadata for an EVS Snapshot

Function

This API is used to delete one piece of the EVS snapshot metadata.

URI

- URI format

  DELETE /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
snapshot_id	Yes	Specifies the snapshot ID.
key	Yes	Specifies the key of the piece of metadata to be deleted.

Request

- Example request

```
DELETE https://{endpoint}/v2/{project_id}/snapshots/f9faf7df-fdc1-4093-9ef3-5cba06eef995/metadata/value1
```

Response

- Parameter description

Parameter	Type	Description
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

  None

  or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

  In the preceding example, **error** indicates a general error, for example, **badRequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.4 EVS Disk Transfer

7.4.1 Creating a Disk Transfer

Function

This API is used to create a disk transfer. After the transfer has been created, a transfer ID and an authentication key are returned.

After a disk transfer is created, the disk status changes from **available** to **awaiting-transfer**. Once the disk transfer is accepted, the disk status changes to **available** again.

Constraints

A disk transfer can be created only when the disk status is **available**. The detailed constraints are as follows:

- EVS disks with backups and snapshots available cannot be transferred.
- EVS disks associated with backup policies cannot be transferred.
- EVS disks used as system disks cannot be transferred.

NOTE

If the disk transfer is created using one of the unsupported disks, error code 400 will be returned.

URI

- URI format

  POST /v2/{project_id}/os-volume-transfer

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

- Request parameters

Parameter	Type	Mandatory	Description
transfer	Object	Yes	The transfer creation marker. For details, see **Parameters in the transfer field**.

- Parameters in the **transfer** field

Parameter	Type	Mandatory	Description
volume_id	String	Yes	The disk ID.
name	String	Yes	The transfer name, which can contain a maximum of 255 bytes.

- Example request

```
{
   "transfer": {
      "volume_id": "c86b9af4-151d-4ead-b62c-5fb967af0e37",
      "name": "first volume"
   }
}
```

Response

- Response parameters

Parameter	Type	Description
transfer	Object	The transfer information. For details, see **Parameters in the transfer field**.

- Parameters in the **transfer** field

Parameter	Type	Description
auth_key	String	The authentication key of the transfer.
links	Array of Objects	The links of the transfer. See **Parameters in the links field**.
created_at	String	The time when the transfer was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_id	String	The disk ID.
id	String	The transfer ID.
name	String	The transfer name.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name. The default value is **next**.

- Example response

```
{
    "transfer": {
        "id": "1a7059f5-8ed7-45b7-8d05-2811e5d09f24",
        "created_at": "2015-02-25T03:56:53.081642",
        "name": "first volume",
        "volume_id": "c86b9af4-151d-4ead-b62c-5fb967af0e37",
        "auth_key": "9266c59563c84664",
        "links": [
            {
                "href": "https://localhost/v2/firstproject/os-volume-transfer/3",
                "rel": "self"
            },
            {
                "href": "https://localhost/firstproject/os-volume-transfer/3",
                "rel": "bookmark"
            }
        ]
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.4.2 Accepting a Disk Transfer

Function

This API is used to accept a disk transfer through the transfer ID and authentication key.

Constraints

- EVS disks with backups and snapshots available cannot be transferred.
- EVS disks associated with backup policies cannot be transferred.
- EVS disks used as system disks cannot be transferred.

NOTE

If the disk transfer is created using one of the unsupported disks, error code 400 will be returned.

URI

- URI format

  POST /v2/{project_id}/os-volume-transfer/{transfer_id}/accept

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
transfer_id	Yes	The transfer ID.

Request

- Request parameters

Parameter	Type	Mandatory	Description
accept	Object	Yes	The transfer acceptance marker. For details, see **Parameter in the accept field**.

- Parameter in the **accept** field

Parameter	Type	Mandatory	Description
auth_key	String	Yes	The authentication key of the transfer. An authentication key will be returned when a disk transfer is created.

- Example request

```
{
   "accept": {
      "auth_key": "9266c59563c84664"
   }
}
```

Response

- Response parameters

Parameter	Type	Description
transfer	Object	The transfer information. For details, see **Parameters in the transfer field**.

- Parameters in the **transfer** field

Parameter	Type	Description
volume_id	String	The disk ID.

Parameter	Type	Description
id	String	The transfer ID.
name	String	The transfer name.
links	Array of Objects	The links of the transfer. For details, see **Parameters in the links field**.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name. The default value is **next**.

- Example response

```
{
    "transfer": {
        "id": "cac5c677-73a9-4288-bb9c-b2ebfb547377",
        "name": "first volume transfer",
        "volume_id": "894623a6-e901-4312-aa06-4275e6321cce",
        "links": [
            {
                "href": "https://localhost/v2/firstproject/os-volume-transfer/1",
                "rel": "self"
            },
            {
                "href": "https://localhost/firstproject/os-volume-transfer/1",
                "rel": "bookmark"
            }
        ]
    }
}
```

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.4.3 Deleting a Disk Transfer

Function

This API is used to delete a disk transfer. A disk transfer can be deleted if it is not accepted. Accepted disk transfers cannot be deleted.

URI

- URI format

  DELETE /v2/{project_id}/os-volume-transfer/{transfer_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
transfer_id	Yes	Specifies the disk transfer ID.

Request

- Example request

```
DELETE https://{endpoint}/v2/{project_id}/os-volume-transfer/cac5c677-73a9-4288-bb9c-b2ebfb547377
```

Response

None

Status Codes

- Normal

  202

Error Codes

For details, see **Error Codes**.

7.4.4 Querying Details of a Disk Transfer

Function

This API is used to query the details of a disk transfer, including the transfer creation time, transfer ID, and transfer name.

URI

- URI format

  GET /v2/{project_id}/os-volume-transfer/{transfer_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
transfer_id	Yes	The transfer ID.

Request

- Example request
  GET https://{endpoint}/v2/{project_id}/os-volume-transfer/cac5c677-73a9-4288-bb9c-b2ebfb547377

Response

- Response parameters

Parameter	Type	Description
transfer	Object	The transfer details. For details, see **Parameters in the transfer field**.

- Parameters in the **transfer** field

Parameter	Type	Description
links	Array of Objects	The links of the transfer. See **Parameters in the links field**.
created_at	String	The time when the transfer was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_id	String	The disk ID.
id	String	The transfer ID.
name	String	The transfer name.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name. The default value is **next**.

- Example response

```
{
    "transfer": {
        "id": "cac5c677-73a9-4288-bb9c-b2ebfb547377",
        "created_at": "2015-02-25T03:56:53.081642",
        "name": "first volume transfer",
        "volume_id": "894623a6-e901-4312-aa06-4275e6321cce",
        "links": [
            {
                "href": "https://localhost/v2/firstproject/os-volume-transfer/1",
                "rel": "self"
            },
            {
                "href": "https://localhost/firstproject/os-volume-transfer/1",
                "rel": "bookmark"
            }
        ]
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.4.5 Querying All Disk Transfers

Function

This API is used to query all disk transfers of the current tenant.

URI

- URI format

  GET /v2/{project_id}/os-volume-transfer

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from **1** to **1000**, and the default value is **1000**. The returned value cannot exceed this limit.
offset	Integer	No	The query offset. All disk transfers after this offset will be queried. The value must be an integer greater than 0 but less than the number of disk transfers.

Request

The following example shows how to query details of the disk transfers whose limit is no more than 50.

- Example request
  ```
  GET https://{endpoint}/v2/{project_id}/os-volume-transfer?limit=50
  ```

Response

- Response parameters

Parameter	Type	Description
transfers	List<Transfer>	The list of transfers. For details, see **Parameters in the transfers field**.

- Parameters in the **transfers** field

Parameter	Type	Description
links	Array of Objects	The links of the transfer. See **Parameters in the links field**.
volume_id	String	The disk ID.
id	String	The transfer ID.
name	String	The transfer name.

- Parameters in the **links** field

Parameter	Type	Description
href	String	The corresponding shortcut link.
rel	String	The shortcut link marker name. The default value is **next**.

- Example response

```
{
   "transfers": [
      {
         "id": "cac5c677-73a9-4288-bb9c-b2ebfb547377",
         "name": "first volume transfer",
         "volume_id": "894623a6-e901-4312-aa06-4275e6321cce",
         "links": [
            {
               "href": "https://localhost/v2/firstproject/os-volume-transfer/1",
               "rel": "self"
            },
            {
               "href": "https://localhost/firstproject/os-volume-transfer/1",
               "rel": "bookmark"
            }
         ]
      },
      {
         "id": "f26c0dee-d20d-4e80-8dee-a8d91b9742a1",
         "name": "second volume transfer",
         "volume_id": "673db275-379f-41af-8371-e1652132b4c1",
         "links": [
            {
               "href": "https://localhost/v2/firstproject/os-volume-transfer/2",
               "rel": "self"
            },
            {
               "href": "https://localhost/firstproject/os-volume-transfer/2",
               "rel": "bookmark"
            }
         ]
      }
   ]
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

7.4.6 Querying Details of All Disk Transfers

Function

This API is used to query the details of all disk transfers, including the transfer creation time, transfer IDs, and transfer names.

URI

- URI format

  GET /v2/{project_id}/os-volume-transfer/detail

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

- Request filter parameters

Parameter	Type	Mandatory	Description
limit	Integer	No	The maximum number of query results that can be returned. The value ranges from **1** to **1000**, and the default value is **1000**. The returned value cannot exceed this limit.
offset	Integer	No	The query offset. All disk transfers after this offset will be queried. The value must be an integer greater than 0 but less than the number of disk transfers.

Request

The following example shows how to query details of the disk transfers whose limit is no more than 50.

- Example request

```
GET https://{endpoint}/v2/{project_id}/os-volume-transfer/detail?limit=50
```

Parameter description

- Parameter description

Parameter	Type	Description
transfers	List<Transfer>	Specifies the disk transfer details. For details, see **Parameters in the transfers field**.

- Parameters in the **transfers** field

Parameter	Type	Description
links	List< Dict >	Specifies the links of the disk transfer.
created_at	String	Specifies the time when the disk transfer was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_id	String	Specifies the disk ID.
id	String	Specifies the disk transfer ID.
name	String	Specifies the name of the disk transfer.

- Example response

```
{
   "transfers": [
      {
         "id": "cac5c677-73a9-4288-bb9c-b2ebfb547377",
         "created_at": "2015-02-25T03:56:53.081642",
         "name": "first volume transfer",
         "volume_id": "894623a6-e901-4312-aa06-4275e6321cce",
         "links": [
            {
               "href": "https://localhost/v2/firstproject/os-volume-transfer/1",
               "rel": "self"
            },
            {
               "href": "https://localhost/firstproject/os-volume-transfer/1",
               "rel": "bookmark"
            }
         ]
      },
      {
         "id": "f26c0dee-d20d-4e80-8dee-a8d91b9742a1",
         "created_at": "2015-03-25T03:56:53.081642",
         "name": "second volume transfer",
         "volume_id": "673db275-379f-41af-8371-e1652132b4c1",
         "links": [
            {
               "href": "https://localhost/v2/firstproject/os-volume-transfer/2",
               "rel": "self"
            },
            {
               "href": "https://localhost/firstproject/os-volume-transfer/2",
               "rel": "bookmark"
            }
         ]
      }
   ]
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

8 Out-of-Date APIs

8.1 API v1

8.1.1 Querying Task Status

Function

This API is used to query the execution status of tasks, such as the status of disk creation, capacity expansion, and deletion.

URI

- URI format

  GET /v1/{project_id}/jobs/{job_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID.
job_id	Yes	Specifies the task ID.

Request

The following example shows how to query the status of the task whose task ID is ff808081692a62c70169b4dcf9514264.

- Example request

```
GET https://{endpoint}/v1/{project_id}/jobs/ff808081692a62c70169b4dcf9514264
```

Response

- Parameter description

Parameter	Type	Description
status	String	Specifies the task status. • **SUCCESS**: The task is successfully executed. • **RUNNING**: The task is in progress. • **FAIL**: The task fails. • **INIT**: The task is being initialized.
entities	Object	Specifies the response to the task. For details, see **•Parameters in the entities field**. The content for each type of task is different.
job_id	String	Specifies the task ID.
job_type	String	Specifies the task type. • **createVolume**: creates a disk. • **batchCreateVolume**: batch creates disks. • **deleteVolume**: deletes a disk. • **extendVolume**: expands the disk capacity. • **bulkDeleteVolume**: batch deletes disks. • **deleteSingleVolume**: deletes disks one by one during a batch deletion.
begin_time	String	Specifies the time when the task was started. Time format: YYYY-MM-DDTHH:MM:SS.SSS'Z'
end_time	String	Specifies the time when the task finished. Time format: YYYY-MM-DDTHH:MM:SS.SSS'Z'
error_code	String	Specifies the returned error code when the task execution fails.
fail_reason	String	Specifies the cause of the task execution failure.
error	Object	Specifies the error message returned when an error occurs. For details, see **Parameters in the error field**.

- Parameter in the **entities** field

Parameter	Type	Description
name	String	Specifies the EVS disk name.
size	Integer	Specifies the disk size, in GB.
sub_jobs	Array of Objects	Specifies the information about a sub-job. For details, see **•Parameters in the sub_jobs field**.
volume_id	String	Specifies the disk ID.
volume_type	String	Specifies the disk type.

- Parameters in the **sub_jobs** field

Parameter	Type	Description
status	String	Specifies the task status. • **SUCCESS**: The task is successfully executed. • **RUNNING**: The task is in progress. • **FAIL**: The task fails. • **INIT**: The task is being initialized.
entities	Object	Specifies the response to the task. For details, see **•Parameters in the entities field**. The content for each type of task is different.
job_id	String	Specifies the task ID.
job_type	String	Specifies the task type. • **createVolume**: creates a disk. • **batchCreateVolume**: batch creates disks. • **deleteVolume**: deletes a disk. • **extendVolume**: expands the disk capacity. • **bulkDeleteVolume**: batch deletes disks. • **deleteSingleVolume**: deletes disks one by one during a batch deletion.
begin_time	String	Specifies the time when the task was started. Time format: YYYY-MM-DDTHH:MM:SS.SSS'Z'

Parameter	Type	Description
end_time	String	Specifies the time when the task finished. Time format: YYYY-MM-DDTHH:MM:SS.SSS'Z'
error_code	String	Specifies the returned error code when the task execution fails.
fail_reason	String	Specifies the cause of the task execution failure.

- Parameter in the **entities** field

Parameter	Type	Description
name	String	Specifies the EVS disk name.
size	Integer	Specifies the disk size, in GB.
volume_id	String	Specifies the disk ID.
volume_type	String	Specifies the disk type.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "status": "RUNNING",
    "entities": {
        "volume_id": "bdf1bb37-f20f-4266-9a04-f43e0a127376"
    },
    "job_id": "4010a32d535527910153552b492c0002",
    "job_type": "createVolume",
    "begin_time": "2016-03-08T07:40:13.219Z",
    "end_time": "",
    "error_code": null,
    "fail_reason": null
}
```

or

```
{
    "status": "SUCCESS",
    "entities": {
        "sub_jobs": [
            {
                "status": "SUCCESS",
                "entities": {
                    "volume_id": "0b549095-4937-4849-8e4c-52aa027d64f7"
```



```
            },
            "job_id": "21917a8d52a19b040152a9f2f2e50041",
            "job_type": "createVolume",
            "begin_time": "2016-02-04T01:43:37.445Z",
            "end_time": "2016-02-04T01:44:02.239Z",
            "error_code": null,
            "fail_reason": null
        },
        {
            "status": "SUCCESS",
            "entities": {
                "volume_id": "e7bca1a2-d3ed-434f-86f4-a1f11aa80072"
            },
            "job_id": "21917a8d52a19b040152a9f2f2f60042",
            "job_type": "createVolume",
            "begin_time": "2016-02-04T01:43:37.462Z",
            "end_time": "2016-02-04T01:44:02.245Z",
            "error_code": null,
            "fail_reason": null
        }
    ]
  },
  "job_id": "21917a8d52a19b040152a9f2f1eb003e",
  "job_type": "batchCreateVolume",
  "begin_time": "2016-02-04T01:43:37.193Z",
  "end_time": "2016-02-04T01:44:08.283Z",
  "error_code": null,
  "fail_reason": null
}
```


or


```
{
  "error": {
    "message": "XXXX",
    "code": "XXX"
  }
}
```


Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

8.2 OpenStack Cinder API v1 (Deprecated)

8.2.1 EVS Disk

8.2.1.1 Querying Details About a Disk (Deprecated)

Function

This API is used to query details about a disk.

NOTICE

This API has been deprecated. Use another API. For details, see **Querying Details About a Disk**.

URI

- URI format

  GET /v1/{project_id}/volumes/{volume_id}

- Parameter description

Parameter	Mandatory	Description
project_id	Yes	The project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
volume_id	Yes	The disk ID.

Request

- Example request

```
GET https://{endpoint}/v1/{project_id}/volumes/b104b8db-170d-441b-897a-3c8ba9c5a214
```

Response

- Response parameters

Parameter	Type	Description
volume	Object	The disk information. For details, see **Parameters in the volume field**.
error	Object	The error message returned if an error occurs. For details, see **Parameters in the error field**.

- Parameters in the **volume** field

Parameter	Type	Description
id	String	The disk ID.
display_name	String	The disk name.
status	String	The disk status. For details, see **EVS Disk Status**.
attachments	list	The attachment information.

Parameter	Type	Description
availability_zone	String	The AZ to which the disk belongs.
os-vol-host-attr:host	String	The reserved field.
source_volid	String	The source disk ID. This parameter has a value if the disk is created from a source disk. This field is currently not supported.
snapshot_id	String	The snapshot ID. This parameter has a value if the disk is created from a snapshot.
display_description	String	The disk description.
created_at	String	The time when the disk was created. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
volume_type	String	The disk type. The value can be **SSD** or **SAS**. ● **SSD**: the ultra-high I/O type ● **SAS**: the high I/O type
os-vol-tenant-attr:tenant_id	String	The ID of the tenant to which the disk belongs. The tenant ID is the same as the project ID.
size	Integer	The disk size, in GB.
metadata	Object	The disk metadata.
os-vol-mig-status-attr:migstat	String	The reserved field.
os-vol-mig-status-attr:name_id	String	The reserved field.
os-volume-replication:extended_status	String	The reserved field.
encrypted	Boolean	This field is currently not supported.
bootable	String	Whether the disk is bootable. ● **true**: indicates a bootable disk. ● **false**: indicates a non-bootable disk.

Parameter	Type	Description
shareable	String	Whether the disk is shareable. **NOTE** This field is no longer used. Use **multiattach**.
multiattach	Boolean	Whether the disk is shareable. • **true**: indicates a shared disk. • **false**: indicates a non-shared disk.
volume_image_metadata	Object	The metadata of the disk image. This field has a value if the disk is created from an image. Or, it is left empty. **NOTE** For details about **volume_image_metadata**, see **Querying Image Details (Native OpenStack API)** in the *Image Management Service API Reference*.

- Parameters in the **attachments** field

Parameter	Type	Description
server_id	String	The ID of the server to which the disk is attached.
attachment_id	String	The ID of the attachment information.
attached_at	String	The time when the disk was attached. Time format: UTC YYYY-MM-DDTHH:MM:SS.XXXXXX
host_name	String	The name of the physical host housing the cloud server to which the disk is attached.
volume_id	String	The disk ID.
device	String	The device name.
id	String	The ID of the attached disk.

- Parameters in the **metadata** field

Parameter	Type	Description
full_clone	String	The clone method. If the disk is created from a snapshot, value **0** indicates the linked cloning method.

- Parameters in the **error** field

Parameter	Type	Description
message	String	The error message returned if an error occurs.
code	String	The error code returned if an error occurs. For details about the error code, see **Error Codes**.

- Example response

```
{
    "volume": {
        "attachments": [],
        "availability_zone": "az-dc-1",
        "os-vol-host-attr:host": "db-rabbitmq201#LVM_iSCSI",
        "encrypted": false,
        "os-volume-replication:extended_status": null,
        "volume_image_metadata": null,
        "snapshot_id": null,
        "id": "da4f9c7a-c275-4bc9-80c4-76c7d479a218",
        "size": 1,
        "os-vol-tenant-attr:tenant_id": "3dab0aaf682849678a94ec7b5a3af2ce",
        "os-vol-mig-status-attr:migstat": null,
        "metadata": {},
        "status": "available",
        "display_description": null,
        "source_volid": null,
        "os-vol-mig-status-attr:name_id": null,
        "display_name": "test",
        "bootable": "false",
        "created_at": "2014-12-18T17:14:38.000000",
        "volume_type": "SAS",
        "multiattach": false
    }
}
```

or

```
{
    "error": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

In the preceding example, **error** indicates a general error, for example, **badrequest** or **itemNotFound**. An example is provided as follows:

```
{
    "itemNotFound": {
        "message": "XXXX",
        "code": "XXX"
    }
}
```

Status Codes

- Normal

  200

Error Codes

For details, see **Error Codes**.

9 Permissions Policies and Supported Actions

9.1 Introduction

This chapter describes fine-grained permissions management for your EVS resources. If your account does not need individual IAM users, you can skip this chapter.

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

You can grant users permissions by using roles and policies. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

Policy-based authorization is useful if you want to allow or deny the access to an API.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user queries EVS disks using an API, the user must have been granted permissions that allow the **evs:volumes:list** action.

Supported Actions

EVS provides system-defined policies that can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permission: A statement in a policy that allows or denies certain operations.
- API: REST APIs that can be called by a user who has been granted specific permissions.
- Action: Specific operations that are allowed or denied.
- Dependent actions: When assigning an action to users, you also need to assign dependent permissions for that action to take effect.
- IAM projects or enterprise projects: Type of projects in which policies can be used to grant permissions. A policy can be applied to IAM projects, enterprise projects, or both. Policies that contain actions for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and only take effect for IAM.

EVS supports the following actions that can be defined in custom policies:

- API version query actions (**API Version Query**), including actions supported by EVS version query APIs, such as the APIs for querying API versions.
- Disk actions (**Disk**), including actions supported by EVS disk APIs, such as the APIs for creating a disk, querying disks, deleting a disk, and updating a disk.
- Actions of disk actions (**Disk Action**), including actions supported by EVS disk actions, such as the APIs for expanding the capacity of a disk, exporting a disk as an image, and setting read-only flag for a disk.
- Snapshot actions (**Snapshot**), including actions supported by EVS snapshot APIs, such as the APIs for creating a snapshot, querying snapshots, updating a snapshot, and deleting a snapshot.
- Tag actions (**Tag**), including actions supported by EVS tag APIs, such as the APIs for deleting tags by key, batch adding tags, batch deleting tags, and querying tags.
- Disk transfer actions (**Disk Transfer**), including actions supported by EVS disk transfer APIs, such as the APIs for creating a disk transfer, querying disk transfers, accepting a disk transfer, and deleting a disk transfer.

9.2 API Version Query

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query API versions (OpenStack Cinder API).	GET /	None	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query the API version (OpenStack Cinder API).	GET /{api_version}	None	√	×

NOTE

If **Action** is **None**, no authorization is required.

9.3 Disk

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create EVS disks.	POST /v2/{project_id}/cloudvolumes	evs:volumes:create	√	√

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create EVS disks (OpenStack Cinder API).	POST /v2/{project_id}/volumes	• Create empty EVS disks. evs:volumes:create evs:volumes:get • Create EVS disks from images. evs:volumes:create ims:images:get evs:volumes:get • Create EVS disks from snapshots. evs:volumes:create evs:snapshots:get evs:volumes:get	√	×
Expand the capacity of an EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/action	evs:volumes:extend	√	√
Query EVS disks.	GET /v2/{project_id}/cloudvolumes	evs:volumes:list	√	×
Query EVS disks (OpenStack Cinder API).	GET /v2/{project_id}/volumes	evs:volumes:list	√	×
Query details of all EVS disks.	GET /v2/{project_id}/cloudvolumes/detail	evs:volumes:list	√	√

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Querying Details About All Disks	GET /v2/{project_id}/os-vendor-volumes/detail	evs:volumes:list	√	×
Query details of all EVS disks (OpenStack Cinder API).	GET /v2/{project_id}/volumes/detail	evs:volumes:list	√	×
Query details of an EVS disk.	GET /v2/{project_id}/os-vendor-volumes/{volume_id}	evs:volumes:get	√	×
Query details of an EVS disk (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}	evs:volumes:get	√	×
Delete an EVS disk.	DELETE /v2/{project_id}/cloudvolumes/{volume_id}	evs:volumes:delete	√	√
Delete an EVS disk (OpenStack Cinder API).	DELETE /v2/{project_id}/volumes/{volume_id}	evs:volumes:delete evs:volumes:get	√	×
Update EVS disk information.	PUT /v2/{project_id}/cloudvolumes/{volume_id}	evs:volumes:update	√	√
Update EVS disk information (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}	evs:volumes:update evs:volumes:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Update one piece of EVS disk metadata (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:update evs:volumes:get	√	×
Update the metadata of an EVS disk (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}/metadata	evs:volumes:update evs:volumes:get	√	×
Query one piece of EVS disk metadata (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:get	√	×
Delete one piece of EVS disk metadata (OpenStack Cinder API).	DELETE /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:delete evs:volumes:get	√	×
Query the metadata of an EVS disk (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:get	√	×
Add the metadata of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/metadata	evs:volumes:update evs:volumes:get	√	×
Query EVS disk types (OpenStack Cinder API).	GET /v2/{project_id}/types	evs:types:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query details of an EVS disk type (OpenStack Cinder API).	GET /v2/{project_id}/types/{type_id}	evs:types:get	√	×
Query tenant quotas (OpenStack Cinder API).	GET /v2/{project_id}/os-quota-sets/{project_id}	evs:quotas:get	√	×
Query extension APIs (OpenStack Cinder API).	GET /v2/{project_id}/extensions	None	√	×
Query information of all AZs (OpenStack Cinder API).	GET /v2/{project_id}/os-availability-zone	None	√	×

NOTE

If **Action** is **None**, no authorization is required.

9.4 Disk Action

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Expand the capacity of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-extend"	evs:volumes:extend evs:volumes:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Export the EVS disk data as an image (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-volume_upload_image"	evs:volumes:uploadImage	√	×
Attach an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-attach"	evs:volumes:attach evs:volumes:get	√	×
Detach an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-detach"	evs:volumes:detach evs:volumes:get	√	×
Reserve an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-reserve"	evs:volumes:attach	√	×
Cancel reservation of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-unreserve"	evs:volumes:attach	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Set the bootable flag for an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-set_bootable"	evs:volumes:update	√	×
Set the read-only attribute for an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-update_readonly_flag"	evs:volumes:update	√	×

9.5 Snapshot

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create an EVS snapshot (OpenStack Cinder API).	POST /v2/{project_id}/snapshots	evs:snapshots:create evs:volumes:get	√	×
Query EVS snapshots (OpenStack Cinder API).	GET /v2/{project_id}/snapshots	evs:snapshots:list	√	×
Query details of EVS snapshots (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/detail	evs:snapshots:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Update an EVS snapshot (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:update evs:snapshots:get	√	×
Query details about a single EVS snapshot (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:get	√	×
Delete an EVS snapshot (OpenStack Cinder API).	DELETE /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:delete evs:snapshots:get evs:volumes:get	√	×
Roll back a snapshot to an EVS disk.	POST /v2/{project_id}/os-vendor-snapshots/{snapshot_id}/rollback	evs:snapshots:rollback evs:snapshots:get evs:volumes:get	√	×
Add the metadata of an EVS snapshot (OpenStack Cinder API).	POST /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:update evs:snapshots:get	√	×
Query the metadata of an EVS snapshot (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:get	√	×
Update one piece of EVS snapshot metadata (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:update evs:snapshots:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Update the metadata of an EVS snapshot (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:update evs:snapshots:get	√	×
Query one piece of EVS snapshot metadata (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:get	√	×
Delete one piece of EVS snapshot metadata (OpenStack Cinder API).	DELETE /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:delete evs:snapshots:get	√	×

9.6 Tag

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Obtain all EVS tags of a tenant.	GET /v2/{project_id}/os-vendor-tags/{resource_type}	• EVS disk: evs:volumeTags:list • Backup: evs:backupTags:list • Snapshot: evs:snapshotTags:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query EVS resources by tag.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/resource_instances	• EVS disk: evs:volumeTags:get • Backup: evs:backupTags:get • Snapshot: evs:snapshotTags:get	√	×
Add or update tags for an EVS resource.	POST /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:create • Backup: evs:backupTags:create • Snapshot: evs:snapshotTags:create	√	×
Obtain tags of an EVS resource.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:getById • Backup: evs:backupTags:getById • Snapshot: evs:snapshotTags:getById	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Reset the tags of an EVS resource.	PUT /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:update • Backup: evs:backupTags:update • Snapshot: evs:snapshotTags:update	√	×
Batch delete the tags for an EVS resource.	POST /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/action	• EVS disk: evs:volumeTags:delete evs:volumeTags:getById • Backup: evs:backupTags:delete evs:backupTags:getById • Snapshot: evs:snapshotTags:delete evs:snapshotTags:getById	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Delete the tags of an EVS resource by key.	DELETE /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	• EVS disk: evs:volumeTags:getById evs:volumeTags:delete • Backup: evs:backupTags:getById evs:backupTags:delete • Snapshot: evs:snapshotTags:getById evs:snapshotTags:delete	√	×
Update the tags of an EVS resource by key.	PUT /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	• EVS disk: evs:volumeTags:update • Backup: evs:backupTags:update • Snapshot: evs:snapshotTags:update	√	×
Batch delete tags for a specified EVS disk.	POST /v2/{project_id}/os-vendor-volumes/{volume_id}/tags/action	evs:volumeTags:delete	√	×
Query the tags of an EVS disk.	GET /v2/{project_id}/os-vendor-volumes/{volume_id}/tags	evs:volumeTags:getById	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Batch add tags for a specified EVS disk.	POST /v2/{project_id}/os-vendor-volumes/{volume_id}/tags/action	evs:volumeTags:create	√	×
Query details of EVS disks by tag.	POST /v2/{project_id}/os-vendor-volumes/resource_instances/action	evs:volumeTags:get	√	×
Query tags of an EVS resource by key.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	evs:volumeTags:getById	√	×
Query the number of EVS disks by tag.	POST /v2/{project_id}/os-vendor-volumes/resource_instances/action	evs:volumeTags:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Obtain all EVS tags of a tenant.	GET /v2/{project_id}/cloudvolumes/tags	• EVS disk: evs:volumeTags:list • Backup: evs:backupTags:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Batch add tags for a specified EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action	evs:volumeTags:create	√	×
Batch delete tags for a specified EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action	evs:volumeTags:delete	√	×
Query the tags of an EVS disk.	GET /v2/{project_id}/cloudvolumes/{volume_id}/tags	evs:volumeTags:getById	√	×
Query details of EVS disks by tag.	POST /v2/{project_id}/cloudvolumes/resource_instances/action	evs:volumeTags:get	√	×

9.7 Disk Transfer

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create an EVS disk transfer (OpenStack Cinder API).	POST /v2/{project_id}/os-volume-transfer	evs:transfers:create	√	×
Query all EVS disk transfers of a tenant (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer	evs:transfers:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query details of all EVS disk transfers of a tenant (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer/detail	evs:transfers:list	√	×
Query details of an EVS disk transfer (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer/{transfer_id}	evs:transfers:get	√	×
Accept an EVS disk transfer (OpenStack Cinder API).	POST /v2/{project_id}/os-volume-transfer/{transfer_id}/accept	evs:transfers:accept	√	×
Delete an EVS disk transfer (OpenStack Cinder API).	DELETE /v2/{project_id}/os-volume-transfer/{transfer_id}	evs:transfers:delete	√	×

A Appendix

A.1 Error Codes

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.0001	invalid tenant id!	Incorrect tenant ID in the URI. The tenant ID is the same as the project ID.	Use the correct tenant ID.
400	EVS.0002	invalid token!	Header parameters in the HTTP request are incorrect.	Use the correct token.
403	EVS.0003	invalid token roles!	The token used is incorrect.	The account permission set is empty. Add the required permissions to this account.
400	EVS.1001	null volume!	The name and description formats set in the request to update the disk are incorrect.	Enter the disk name and description in the correct format.
400	EVS.1002	invalid volume id!	Incorrect disk ID.	Enter the disk ID in the correct format.
400	EVS.1003	invalid volume name!	Incorrect disk name format.	Enter the disk name in the correct format.
400	EVS.1004	invalid volume description!	Incorrect disk description format.	Enter the disk description in the correct format.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.1005	size of metadata is too large!	The size of the metadata set in the request to create the disk exceeds the upper limit.	Check whether the metadata is too large. The metadata size must be smaller than 1048576 bytes.
400	EVS.1006	invalid backup id!	The ID of the backup used to create the disk is incorrect.	Enter the correct backup ID.
400	EVS.1007	volume name and description can not both be empty!	Parameters **name** and **description** are incorrect.	Enter the correct disk name and description.
400	EVS.1008	null createVolumeReq!	The format of the request to create the disk is incorrect.	Use the correct request format.
400	EVS.1009	invalid volumeForCreate!	The body of the request to create the disk is incorrect.	Check the body of the request used to create the disk.
400	EVS.1010	invalid volume size!	Parameter **size** set in the request to create the disk is invalid.	Enter a valid **size** value.
400	EVS.1011	null extendVolumeReq!	The format of the request to expand the disk capacity is incorrect.	Use the correct request format.
400	EVS.1012	temporary volume!	You do not have the permission to access this disk.	Do not perform operations for a temporary disk as it does not allow any operation.
400	EVS.1013	request transforming failed!	Request conversion error.	Check whether the request body is correct.
400	EVS.1014	volume can not be extended!	Failed to meet the capacity expansion requirements.	Ensure that the disk meets the expansion requirements.
400	EVS.1015	new volume Size must be greater than old Size!	The new size of the disk is incorrect.	Ensure that the new disk capacity is larger than the original disk capacity.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.1016	Invalid input received: May specify only one of imageRef, snapshot_id, backup_id!	Only one data source among image, snapshot, and backup can be selected when creating a disk from a data source.	Select one data source.
400	EVS.1018	Type conversion error , parameter type is unexpected	Type conversion error. The parameter type is unexpected.	Check whether the input parameters are correct. See the parameter description in the *Elastic Volume Service API Reference*.
400	EVS.1020	invalid volume type!	The disk type set in the request to create the disk is incorrect.	Enter a valid disk type.
400	EVS.1021	the quantity of volume is invalid!	The disk quantity set in the request to batch create disks is incorrect.	Enter a valid disk quantity.
400	EVS.1022	the size param is less than backup size!	Parameter **size** set in the request to create the disk using a backup is incorrect.	Ensure that the entered disk size is larger than the backup size.
400	EVS.1023	invalid filter limit!	Parameter **limit** in the URL for querying the disk is incorrect.	Ensure that the **limit** value ranges from **1** to **1000**. The default value is **1000**.
400	EVS.1024	invalid filter marker!	Parameter **marker** in the URL for querying the disk is incorrect.	Ensure that the **marker** value is in the UUID format.
400	EVS.1025	url encoding failed!	Metadata decoding error.	Check whether parameter **metadata** is correctly specified.

Status Code	Error Code	Error Message	Error Description	Solution
403	EVS.1027	user role is not allowed for this action!	You do not have the rights to perform the operation.	Check whether the account has relevant permissions, or the account is in arrears, does not pass real-name authentication, or has violations.
400	EVS.1031	invalid resources status!	Input value of parameter **resources status** is invalid.	Specify a valid value for **resources status**.
400	EVS.1032	invalid resources ID!	Parameter **resources id** cannot be left empty.	Specify a valid value for **resources id**.
400	EVS.1033	query quota failed!	Failed to query the tenant quota.	Check whether the tenant quota is configured.
400	EVS.1034	volume count exceeded volume count quota!	Insufficient disk quantity quota assigned to the tenant.	Increase the disk quantity quota.
400	EVS.1036	invalid availability zone!	Parameter **availability_zone** set in the request to create the disk is incorrect.	Enter the correct AZ.
400	EVS.1039	invalid sort_key!	Input parameter **sort_key** is incorrect.	Check whether parameter **sort_key** is correctly specified.
400	EVS.1040	invalid sort_dir!	Parameter **sort_dir** in the URL for querying the disk is incorrect.	Ensure that the **sort_dir** value is **desc** or **asc**.
400	EVS.1041	invalid filter availablity-zone!	Parameter **availability-zone** in the URL for querying the disk is incorrect.	Check whether the AZ specified in the request is valid.
400	EVS.1042	volume gigabytes exceeded volume gigabytes quota!	Insufficient disk capacity quota assigned to the tenant.	Increase the disk capacity quota.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.1043	encrypt and cmk and passthrougth in metadata is not support when create volume from snapshot or image!	Parameters **__system__encrypted**, **__system__cmkid**, and **hw:passthrough** are not supported when a disk is created from an image or a snapshot.	Check whether the request body is correct. For details, see the **metadata** field description for creating disks.
400	EVS.1044	backup status must be available when create a volume from it!	The backup cannot be used to create a disk.	The backup is unavailable.
400	EVS.1045	backupDetail returned by FSP is null!	Failed to query the backup details.	Check whether the backup exists. Contact .
400	EVS.1046	volume status must be available, error, error_extending, error_restoring, error_rollbacking when delete volume!	Failed to delete the disk because the disk status is incorrect.	Contact .
400	EVS.1047	snapshot status must be available or error when delete snapshot!	Failed to delete the snapshot because the snapshot status is incorrect.	Contact .
400	EVS.1048	volume status must be available when extend volume!	Failed to expand the disk capacity because the disk status is incorrect.	Ensure that the disk status meets the expansion requirements.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.1049	available-zone is not equal to backup available-zone!	The backup used to create the disk is in the incorrect AZ.	The backup and the disk to be created must in the same AZ.
400	EVS.1051	can not batch create volume from backup!	Batch creating disks from a backup is not available.	Batch creating disks from a backup is not available.
400	EVS.1052	invalid http body!	Request conversion error.	Check whether the request body is correct.
400	EVS.1053	the size of volumes to be deleted is too large!	Too many disks are specified in the request for batch deleting disks.	Reduce the number of disks specified in the batch.
400	EVS.1054	invalid shareable parameter!	Input parameter **shareable** is invalid.	Check whether parameter **shareable** is correctly specified.
400	EVS.1057	invalid hw:passthrough in metadata!	Input parameter **hw:passthrough** under **metadata** is invalid.	Check whether parameter **hw:passthrough** is correctly specified.
400	EVS.1058	invalid metadata filter!	Metadata decoding error.	Check whether parameter **metadata** is correctly specified.
400	EVS.1063	invalid full_clone in metadata!	Input parameter **full_clone** under **metadata** is invalid.	Check whether parameter **full_clone** in **metadata** is correctly specified.
400	EVS.1064	volume status must be available or in-use when extending!	A disk can be expanded only when its status is **available** or **in-use**.	Ensure that the disk is in the **available** or **in-use** state before expansion.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.1065	multiattach volume status must be available when extending!	A shared disk can be expanded only when its status is **available**.	Ensure that the shared disk is in the **available** state before expansion.
400	EVS.1066	status of ECS or BMS does not support volume online extension!	The ECS or BMS status does to meet the requirement of online disk expansion.	Ensure that the ECS or BMS status meets the requirement.
400	EVS.1070	invalid request.	Request conversion error.	Check whether the request body is correct.
500	EVS.2001	submit job failed!	Failed to submit the task.	Contact .
500	EVS.2002	internal error!	The system is currently unavailable.	Contact .
500	EVS.2005	client exception!	A connection exception occurs.	Contact .
500	EVS.2007	update volume timeout!	Updating the metadata of the disk timed out.	Try again later or contact .
500	EVS.2010	exchange token failed!	Failed to obtain the token for the tenant.	Check the user permissions.
500	EVS.2011	delete orderId and productId timeout!	Deleting order information from the disk metadata timed out.	Try again later or contact .
500	EVS.2013	assume role error!	Failed to elevate the permissions.	Contact .
500	EVS.2014	thread is interrupted when sleep!	Failed to escalate rights.	Try again later or contact .
500	EVS.2019	snapshot is error_deleting!	Failed to delete the snapshot because the snapshot is in the **error_deleting** status.	Contact .

Status Code	Error Code	Error Message	Error Description	Solution
500	EVS.2020	volume is error_deleting!	Failed to delete the disk because the disk is in the **error_deleting** status.	Contact .
500	EVS.2021	volume is error_detaching!	The disk status is **error_detaching**.	Try again later or contact .
500	EVS.2023	ConnectException happened!	Network connection timed out.	Try again. If the network fails, check the network status. If the network status is normal, contact .
500	EVS.2024	volume is error!	The status of the created disk is **error**.	Contact .
500	EVS.2025	volume is error_restoring!	The status of the created disk is **error_restoring**.	Contact .
500	EVS.2026	volume is error_extending!	Failed to expand the disk capacity because the disk is in the **error_extending** state.	Contact .
500	EVS.2029	The size of joIdList and resultList are mismatched!	Incorrect subtask quantity.	Contact .
500	EVS.2030	query context based on parent jobId exception!	Failed to submit the subtask again.	Contact .
500	EVS.2031	result queried from context is null!	Failed to query the context.	Contact .
500	EVS.2032	some volume count quota usage params are null!	Failed to query the disk quantity quota assigned to the tenant.	Try again later or contact .

Status Code	Error Code	Error Message	Error Description	Solution
500	EVS.2033	some volume gigabytes quota usage params are null!	Failed to query the disk capacity quota assigned to the tenant.	Try again later or contact .
500	EVS.2034	domainId decoded from token is null or empty!	Token resolution failure.	Check whether the account information is correct.
500	EVS.2035	domainName decoded from token is null or empty!	Token resolution failure.	Check whether the account information is correct.
500	EVS.2036	the result of decode token is null!	Empty token.	Check whether the account information is correct.
400	EVS.2043	The status of snapshot is not available or backing-up.	The snapshot status is in correct.	Ensure that the snapshot status is **available** or **backing-up**.
404	EVS.2044	Failed to check the role of kms.	Failed to check KMS.	Try again later or contact .
400	EVS.2045	invalid snapshot_id!	Input parameter **snapshot_id** is invalid.	Ensure that the input **snapshot_id** value is correct.
400	EVS.2046	invalid imageRef!	Input parameter **imageRef** is invalid.	Ensure that the input **imageRef** value is correct.
400	EVS.2047	the metadata Param is not allowed to be updated!	The **metadata** field cannot be modified.	Ensure that the input **metadata** value is correct.
500	EVS.2050	set volume Qos failed!	Failed to set the disk QoS.	Ensure that the input **qos** value is correct.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.2052	the job result using order id to query is invalid!	The job corresponding to the order ID is not unique.	Try again later or contact .
400	EVS.2053	The az information from request is invalid!	Input parameter **availability_zone** is invalid.	Ensure that the input **availability_zone** value is correct.
400	EVS.2054	Cannot create volume from snapshot as the az is invalid!	When the disk is created from a snapshot, the input **availability_zone** value of the disk is inconsistent with that of the snapshot.	Ensure that the **availability_zone** value of the disk is consistent with that of the snapshot.
400	EVS.2068	operation failed because of volume be locked	Operations cannot be performed on locked resources.	Unlock the resource and then perform the operation.
400	EVS.2070	VolumeTypes are not supported !	Disk type does not exist.	Try again later or contact .
400	EVS.2071	Invalid input received: Availability zone [%s] do not have volume type [%s]	EVS disks of the specified type are used up in the current AZ. No such resources can be used for creation.	Try again later or contact .
400	EVS.2072	Volume type [SSD] in availability zone [AZ1] is sold out !	Ultra-high I/O disks are used up in the current AZ. No such resources can be used for creation. **NOTE** The ultra-high I/O disk type and AZ1 are used as the sample disk type and AZ. The disk type and AZ vary depending on the actual condition.	Select another disk type or contact .

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.2078	checkQuotaCapacity request body is invalid.	Request conversion error.	Check whether the request body is empty.
400	EVS.2083	AZ and volume type must not be empty or null!	The AZ or disk type parameter in the request is invalid.	Ensure that the input AZ and disk type parameters are correct.
400	EVS.2084	resource size must greater than zero!	The disk size parameter in the request is invalid.	Check whether the disk size specified in the request body is correct.
400	EVS.2085	when operation type is SPEC_CHG, resource id must not be empty or null!	The disk ID is invalid during expansion.	Check whether the disk ID specified in the request body is correct.
400	EVS.2087	retype failed. please make sure that type is supported and the new one is higher than origin	Invalid request parameter.	Ensure that the new type has higher specifications than the old type.
400	EVS.2093	operation failed because the volume is not EVS	The disk is not an EVS disk.	This operation cannot be performed because the disk is not an EVS disk.
400	EVS.2094	system image is not support to create Multiattach/ shareable volume !	A shared disk cannot be created from a system disk image.	A shared disk cannot be created from a system disk image.

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.2096	Target volumeType[%s] is not matched with snapshot[%s] !	When a disk is created from a snapshot, the disk type of the snapshot's source disk is inconsistent with that of the new disk.	Ensure that the disk type of the snapshot's source disk is consistent with that of the new disk.
400	EVS.2108	Request body is invalid.	Request conversion error.	Check whether the request body is correct.
400	EVS.2130	Volume is backing-up, forbidden deleting!	Failed to delete the disk because the snapshot is in the **backing-up** state when a disk backup is being created.	Wait until the backup is created or contact .
400	EVS.2131	Query server info from ecs fail	Failed to query the server details.	Try again later or contact .
400	EVS.2134	call ecs api - attach volume fail.	Failed to attach the disk.	Try again later or contact .
400	EVS.2142	invalid filter limit, can not greater than 1000.	Request parameter **limit** cannot be greater than **1000**.	Ensure that the **limit** value ranges from **1** to **1000**. The default value is **1000**.
403	EVS.2144	Your account is frozen and resources cannot be used.	Insufficient permission because the account is frozen.	Contact .
403	EVS.2145	Your account is suspended and resources cannot be used.	Insufficient permission because the account is suspended.	Contact .

Status Code	Error Code	Error Message	Error Description	Solution
400	EVS.5400	Malformed request body.	Incorrect request body parameter and format.	Check whether the parameters and format of the request body are correct.
400	EVS.5400	Malformed request url.	Incorrect request URL parameter and format.	Check whether the parameters and format of the request URL are correct.
400	EVS.5400	Request body and URI mismatch.	Request body and URI mismatch.	Check whether the request body and URI belong to the same API.
400	EVS.5400	Invalid imageRef provided.	The image is unavailable.	Select another image.
400	EVS.5400	Must specify a valid status.	The disk status is incorrect.	Specify a disk that is in the correct state.
400	EVS.5400	offset param must be an integer.	The value of parameter **offset** must be an integer.	Set the value of parameter **offset** to an integer.
400	EVS.5400	limit param must be an integer.	The value of parameter **limit** must be set to an integer.	Set the value of parameter **limit** to an integer.
400	EVS.5400	limit param must be positive.	The value of parameter **limit** must be a positive number.	Ensure that the **limit** value is an integer ranging from **1** to **1000**. The default value is **1000**.
401	EVS.5401	Authentication required.	This operation is unauthorized.	Call the API after authorization.
403	EVS.5403	Policy check failed.	Insufficient permission.	Add the permission and try again.
403	EVS.5403	metadata can not be operated.	No operation permission.	Modifying parameter **metadata** is forbidden.

Status Code	Error Code	Error Message	Error Description	Solution
404	EVS.5404	Resource(Volume, Snapshot, Backup .etc) cound not be found.	Resources, such as the disk, snapshot, and backup, do not exist.	Check whether the resources are available.
413	EVS.5413	Insufficient volume quota.	Insufficient disk quotas.	Check whether the disk capacity and quantity quotas are sufficient.
500	EVS.5500	Internal server error.	Internal server error.	Try again later or contact .
503	EVS.5503	Service unavailable.	The service is unavailable.	Try again later or contact .
400	Common.0011	query job fail.	Incorrect tenant ID. The tenant ID is the same as the project ID.	Use the correct tenant ID and ensure that the tenant has desired permissions. The tenant ID is the same as the project ID.
400	Common.0011	No jobs found.	**jobId** is empty.	Enter the correct **jobId** value.
400	Common.0011	query job fail.	Failed to query JobVO using **jobId**.	Check whether the **jobId** value is correct. If the **jobId** value is correct, check whether the request is delivered to the target EVS service node. If the request has been delivered, contact to locate the fault. If the request has not been delivered, contact to deliver the request to the target EVS service node.

Status Code	Error Code	Error Message	Error Description	Solution
400	Common.0013	Invalid token in the header.	Failed to parse the token because the token expires or the token string is incomplete.	Obtain the token again and ensure that the token string is complete.
400	Common.0018	Invalid token in the header	The project ID in the URI is different from the project ID in the token.	Ensure that the project ID in the URI is the same as that in the token and try again.

A.2 Status Codes

- Normal

Status Code	Description
200	OK
201	Created
202	Accepted
204	No Content

- Abnormal

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
405	Method Not Allowed
406	Not Acceptable
407	Proxy Authentication Required
408	Request Timeout
409	Conflict
413	overLimit
415	badMediaType

Status Code	Description
500	Internal Server Error
501	Not Implemented
502	Bad Gateway
503	Service Unavailable
504	Gateway Timeout

A.3 EVS Disk Status

EVS Disk Status (API)	EVS Disk Status (Console)	Description
creating	Creating	The EVS disk is being created.
available	Available	The EVS disk has not been attached to any , so you can attach it.
in-use	In-use	The EVS disk has been attached to a and is in use.
error	Error	An error occurs when you try to create an EVS disk.
attaching	Attaching	The EVS disk is being attached.
detaching	Detaching	The EVS disk is being detached.
backing-up	Backing up	A backup is being created for the EVS disk.
error_restoring	Restoration failed	An error occurs when you try to restore the EVS disk from a backup.
uploading	Uploading	Data on the EVS disk is being uploaded to an image. This status occurs when you create an image from a .
downloading	Downloading	Data is being downloaded from an image to the EVS disk. This status occurs when you create a .
extending	Expanding	The capacity of the EVS disk is being expanded.

EVS Disk Status (API)	EVS Disk Status (Console)	Description
error_extending	Expansion failed	An error occurs when you try to expand the capacity of the EVS disk.
deleting	Deleting	The EVS disk is being deleted.
error_deleting	Deletion failed	An error occurs when you try to delete the EVS disk.
rollbacking	Rolling back	Data on the EVS disk is being restored from a snapshot. **NOTE** • When you roll back a snapshot, you can only restore the data to the original disk. Data restoration to a specific disk is not possible. • A snapshot can only be rolled back when the original disk is in the **available** or **error_rollbacking** state.
error_rollbacking	Rollback failed	An error occurs when a snapshot is being rolled back.

A.4 EVS Snapshot Status

EVS Snapshot Status	Description
creating	The EVS snapshot is being created.
available	The EVS snapshot is successfully created.
error	An error occurs when you try to create an EVS snapshot.
deleting	The EVS snapshot is being deleted.
error_deleting	An error occurs when you try to delete an EVS snapshot.

EVS Snapshot Status	Description
rollbacking	The EVS snapshot is rolling back data. **NOTE** • When you roll back a snapshot to an EVS disk, you can only roll back the snapshot to the source EVS disk. Rollback to a specified disk is not possible. • You can roll back an EVS disk from a snapshot only when the disk is in the **available** or **error_rollbacking** state.
backing-up	The EVS snapshot is being created from a backup via a native OpenStack API. The system is automatically creating the EVS snapshot when an EVS disk is created from a backup via an API.

A.5 API Actions

In the following tables, √ indicates that the item is supported, and × indicates that the item is not supported.

API Version Query

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query API versions (OpenStack Cinder API).	GET /	None	√	×
Query the API version (OpenStack Cinder API).	GET /{api_version}	None	√	×

EVS Disk

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create EVS disks.	POST /v2/{project_id}/cloudvolumes	evs:volumes:create	√	√
Create EVS disks (OpenStack Cinder API).	POST /v2/{project_id}/volumes	• Create empty EVS disks. evs:volumes:create evs:volumes:get • Create EVS disks from images. evs:volumes:create ims:images:get evs:volumes:get • Create EVS disks from snapshots. evs:volumes:create evs:snapshots:get evs:volumes:get	√	×
Expand the capacity of an EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/action	evs:volumes:extend	√	√
Query EVS disks.	GET /v2/{project_id}/cloudvolumes	evs:volumes:list	√	×
Query EVS disks (OpenStack Cinder API).	GET /v2/{project_id}/volumes	evs:volumes:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query details of all EVS disks.	GET /v2/{project_id}/cloudvolumes/detail	evs:volumes:list	√	√
Querying Details About All Disks	GET /v2/{project_id}/os-vendor-volumes/detail	evs:volumes:list	√	×
Query details of all EVS disks (OpenStack Cinder API).	GET /v2/{project_id}/volumes/detail	evs:volumes:list	√	×
Query details of an EVS disk.	GET /v2/{project_id}/os-vendor-volumes/{volume_id}	evs:volumes:get	√	×
Query details of an EVS disk (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}	evs:volumes:get	√	×
Delete an EVS disk.	DELETE /v2/{project_id}/cloudvolumes/{volume_id}	evs:volumes:delete	√	√
Delete an EVS disk (OpenStack Cinder API).	DELETE /v2/{project_id}/volumes/{volume_id}	evs:volumes:delete evs:volumes:get	√	×
Update EVS disk information.	PUT /v2/{project_id}/cloudvolumes/{volume_id}	evs:volumes:update	√	√
Update EVS disk information (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}	evs:volumes:update evs:volumes:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Update one piece of EVS disk metadata (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:update evs:volumes:get	√	×
Update the metadata of an EVS disk (OpenStack Cinder API).	PUT /v2/{project_id}/volumes/{volume_id}/metadata	evs:volumes:update evs:volumes:get	√	×
Query one piece of EVS disk metadata (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:get	√	×
Delete one piece of EVS disk metadata (OpenStack Cinder API).	DELETE /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:delete evs:volumes:get	√	×
Query the metadata of an EVS disk (OpenStack Cinder API).	GET /v2/{project_id}/volumes/{volume_id}/metadata/{key}	evs:volumes:get	√	×
Add the metadata of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/metadata	evs:volumes:update evs:volumes:get	√	×
Query EVS disk types (OpenStack Cinder API).	GET /v2/{project_id}/types	evs:types:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query details of an EVS disk type (OpenStack Cinder API).	GET /v2/{project_id}/types/{type_id}	evs:types:get	√	×
Query tenant quotas (OpenStack Cinder API).	GET /v2/{project_id}/os-quota-sets/{project_id}	evs:quotas:get	√	×
Query extension APIs (OpenStack Cinder API).	GET /v2/{project_id}/extensions	None	√	×
Query information of all AZs (OpenStack Cinder API).	GET /v2/{project_id}/os-availability-zone	None	√	×

EVS Disk Actions

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Expand the capacity of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-extend"	evs:volumes:extend evs:volumes:get	√	×
Export the EVS disk data as an image (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-volume_upload_image"	evs:volumes:uploadImage	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Attach an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-attach"	evs:volumes:attach evs:volumes:get	√	×
Detach an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-detach"	evs:volumes:detach evs:volumes:get	√	×
Reserve an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-reserve"	evs:volumes:attach	√	×
Cancel reservation of an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-unreserve"	evs:volumes:attach	√	×
Set the bootable flag for an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-set_bootable"	evs:volumes:update	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Set the read-only attribute for an EVS disk (OpenStack Cinder API).	POST /v2/{project_id}/volumes/{volume_id}/action action="os-update_readonly_flag"	evs:volumes:update	√	×

EVS Snapshot

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create an EVS snapshot (OpenStack Cinder API).	POST /v2/{project_id}/snapshots	evs:snapshots:create evs:volumes:get	√	×
Query EVS snapshots (OpenStack Cinder API).	GET /v2/{project_id}/snapshots	evs:snapshots:list	√	×
Query details of EVS snapshots (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/detail	evs:snapshots:list	√	×
Update an EVS snapshot (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:update evs:snapshots:get	√	×
Query details about a single EVS snapshot (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Delete an EVS snapshot (OpenStack Cinder API).	DELETE /v2/{project_id}/snapshots/{snapshot_id}	evs:snapshots:delete evs:snapshots:get evs:volumes:get	√	×
Roll back a snapshot to an EVS disk.	POST /v2/{project_id}/os-vendor-snapshots/{snapshot_id}/rollback	evs:snapshots:rollback evs:snapshots:get evs:volumes:get	√	×
Add the metadata of an EVS snapshot (OpenStack Cinder API).	POST /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:update evs:snapshots:get	√	×
Query the metadata of an EVS snapshot (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:get	√	×
Update one piece of EVS snapshot metadata (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:update evs:snapshots:get	√	×
Update the metadata of an EVS snapshot (OpenStack Cinder API).	PUT /v2/{project_id}/snapshots/{snapshot_id}/metadata	evs:snapshots:update evs:snapshots:get	√	×
Query one piece of EVS snapshot metadata (OpenStack Cinder API).	GET /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Delete one piece of EVS snapshot metadata (OpenStack Cinder API).	DELETE /v2/{project_id}/snapshots/{snapshot_id}/metadata/{key}	evs:snapshots:delete evs:snapshots:get	√	×

EVS Tag

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Obtain all EVS tags of a tenant.	GET /v2/{project_id}/os-vendor-tags/{resource_type}	• EVS disk: evs:volumeTags:list • Backup: evs:backupTags:list • Snapshot: evs:snapshotTags:list	√	×
Query EVS resources by tag.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/resource_instances	• EVS disk: evs:volumeTags:get • Backup: evs:backupTags:get • Snapshot: evs:snapshotTags:get	√	×
Add or update tags for an EVS resource.	POST /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:create • Backup: evs:backupTags:create • Snapshot: evs:snapshotTags:create	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Obtain tags of an EVS resource.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:getById • Backup: evs:backupTags:getById • Snapshot: evs:snapshotTags:getById	√	×
Reset the tags of an EVS resource.	PUT /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}	• EVS disk: evs:volumeTags:update • Backup: evs:backupTags:update • Snapshot: evs:snapshotTags:update	√	×
Batch delete the tags for an EVS resource.	POST /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/action	• EVS disk: evs:volumeTags:delete evs:volumeTags:getById • Backup: evs:backupTags:delete evs:backupTags:getById • Snapshot: evs:snapshotTags:delete evs:snapshotTags:getById	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Delete the tags of an EVS resource by key.	DELETE /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	• EVS disk: evs:volumeTags:getById evs:volumeTags:delete • Backup: evs:backupTags:getById evs:backupTags:delete • Snapshot: evs:snapshotTags:getById evs:snapshotTags:delete	√	×
Update the tags of an EVS resource by key.	PUT /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	• EVS disk: evs:volumeTags:update • Backup: evs:backupTags:update • Snapshot: evs:snapshotTags:update	√	×
Batch delete tags for a specified EVS disk.	POST /v2/{project_id}/os-vendor-volumes/{volume_id}/tags/action	evs:volumeTags:delete	√	×
Query the tags of an EVS disk.	GET /v2/{project_id}/os-vendor-volumes/{volume_id}/tags	evs:volumeTags:getById	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Batch add tags for a specified EVS disk.	POST /v2/{project_id}/os-vendor-volumes/{volume_id}/tags/action	evs:volumeTags:create	√	×
Query details of EVS disks by tag.	POST /v2/{project_id}/os-vendor-volumes/resource_instances/action	evs:volumeTags:get	√	×
Query tags of an EVS resource by key.	GET /v2/{project_id}/os-vendor-tags/{resource_type}/{resource_id}/{key}	evs:volumeTags:getById	√	×
Query the number of EVS disks by tag.	POST /v2/{project_id}/os-vendor-volumes/resource_instances/action	evs:volumeTags:get	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Obtain all EVS tags of a tenant.	GET /v2/{project_id}/cloudvolumes/tags	• EVS disk: evs:volumeTags:list • Backup: evs:backupTags:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Batch add tags for a specified EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action	evs:volumeTags:create	√	×
Batch delete tags for a specified EVS disk.	POST /v2/{project_id}/cloudvolumes/{volume_id}/tags/action	evs:volumeTags:delete	√	×
Query the tags of an EVS disk.	GET /v2/{project_id}/cloudvolumes/{volume_id}/tags	evs:volumeTags:getById	√	×
Query details of EVS disks by tag.	POST /v2/{project_id}/cloudvolumes/resource_instances/action	evs:volumeTags:get	√	×

EVS Disk Transfer

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Create an EVS disk transfer (OpenStack Cinder API).	POST /v2/{project_id}/os-volume-transfer	evs:transfers:create	√	×
Query all EVS disk transfers of a tenant (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer	evs:transfers:list	√	×

Permission	API	Action	IAM Project (Project)	Enterprise Project (Enterprise Project)
Query details of all EVS disk transfers of a tenant (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer/detail	evs:transfers:list	√	×
Query details of an EVS disk transfer (OpenStack Cinder API).	GET /v2/{project_id}/os-volume-transfer/{transfer_id}	evs:transfers:get	√	×
Accept an EVS disk transfer (OpenStack Cinder API).	POST /v2/{project_id}/os-volume-transfer/{transfer_id}/accept	evs:transfers:accept	√	×
Delete an EVS disk transfer (OpenStack Cinder API).	DELETE /v2/{project_id}/os-volume-transfer/{transfer_id}	evs:transfers:delete	√	×

A.6 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- **Obtain the Project ID by Calling an API**
- **Obtain the Project ID from the Console**

Obtain the Project ID by Calling an API

You can obtain the project ID by calling the IAM API used to query project information based on the specified criteria.

The API used to obtain a project ID is GET https://{Endpoint}/v3/projects. {Endpoint} is the IAM endpoint and can be obtained from **Regions and Endpoints**. For details about API authentication, see **Authentication**.

The following is an example response. The value of **id** is the project ID.


```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "project_name",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
            },
            "id": "a4a5d4098fb4474fa22cd05f897d6b99",
            "enabled": true
        }
    ],
    "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects"
    }
}
```


Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

   On the **My Credentials** page, view the project ID (value in the **Project ID** column).

A.7 Obtaining an Account ID

An account ID is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

1. Log in to the management console.
2. Click the username in the upper right corner and select **My Credentials** from the drop-down list.

   On the **My Credentials** page, view **Account ID**.

B Change History

Released On	Description
2022-08-08	This issue is the first official release.

