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1 Before You Start

1.1 Overview

Welcome to *Cloud Server Backup Service API Reference*.

Cloud Server Backup Service (CSBS) offers the backup protection service for Elastic Cloud Servers (ECSs) and Bare Metal Servers (BMSs). It works based on the consistency snapshot technology for disks. With CSBS, you can use backup data to restore server data.

You can use APIs provided in this document to perform operations on CSBS, such as creating and deleting a backup, replicating a backup, and creating a policy. For details about all supported operations, see [API Overview](#).

Before calling CSBS APIs, ensure that you have fully understood relevant concepts. For details, see [Service Overview](#).

Currently, CSBS APIs are available only to existing users. If you are new users, use [CBR](#) and [CBR APIs](#).

1.2 API Calling

CSBS 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 endpoints of CSBS, see [Regions and Endpoints](#).

1.4 Constraints

For more constraints, see API description.

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).

You can view the account ID and IAM user ID on the [My Credentials](#) page of the management console. API authentication requires information such as the account name, username, and password.
- **Region**

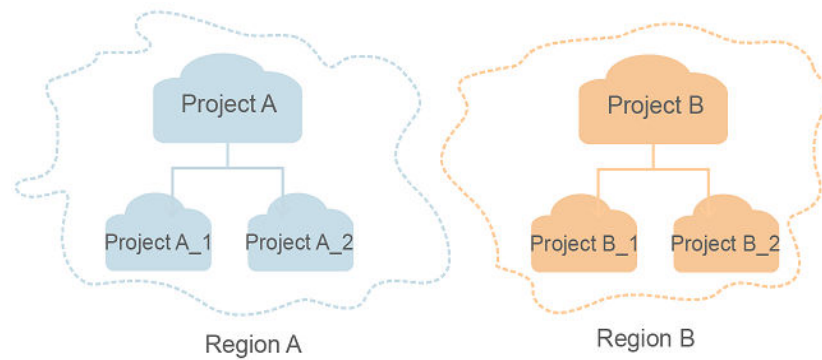
Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

For details, see [Region and AZ](#).
- **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



To view a project ID, go to the [My Credentials](#) page.

- 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](#).

2 API Overview

CSBS APIs allow you to use all functions provided by CSBS.

Table 2-1 API classification

Category	Description
Resource management	Query the backup and restoration capabilities of target resources, as well as back up target resources.
Backup policy management	Create backup policies for automatic backups and manage backup policies.
Backup management	Manage backups and perform one-off backups.
Restoration management	Restore resource data using backups.
Quota management	Manage quotas.
Replication management	Query the regions to which data can be replicated from the current region.

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

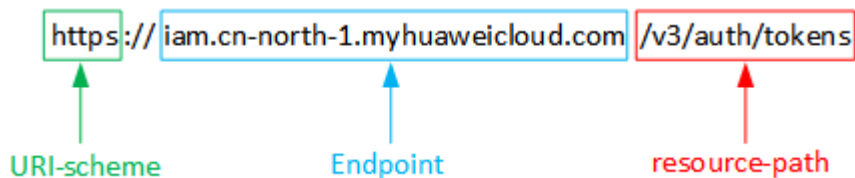
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . For example, the endpoint of IAM in the CN North-Beijing1 region is iam.cn-north-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 <i>Parameter name=Parameter value</i> . For example, ? limit=10 indicates that a maximum of 10 data records will be displayed.

For example, to obtain an IAM token in the **CN North-Beijing1** region, obtain the endpoint of IAM (**iam.cn-north-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.cn-north-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.cn-north-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 <i>Hostname:Port number</i> . 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 This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	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: MIIPAgYJKoZlhvcNAQcCo...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.cn-north-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 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 *xxxxxxxxxxxxxxxxxxxx* (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.cn-north-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": "xxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

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-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK pair. AK/SK-based authentication is recommended because it is more secure than token-based authentication.

Token-based 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. When you call the API, set **auth.scope** in the request body to **project**.

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

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.cn-north-1.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

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

In AK/SK-based 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 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-based 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

```

connection → keep-alive

content-type → application/json

date → Tue, 12 Feb 2019 06:52:13 GMT

server → Web Server

strict-transport-security → max-age=31536000; includeSubdomains;

transfer-encoding → chunked

via → proxy A

x-content-type-options → nosniff

x-download-options → noopen

x-frame-options → SAMEORIGIN

x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5

x-subject-token
→ MIIVXQVJKoZIhvcNAQcCoIIYJCCEoCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6ijlwMTktMDItMTNUMC
fj3KIs6YgKnpVNRbW2eZ5eb78SZ0kqjACgkIQ1wi4JIGzrpd18LGXK5tdfq4lqHCYb8P4NaY0NYejcAgzJVeFYtLWT1GSO0zxKZmlQHQj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRC9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jqgIFkNPQuFSOUB+uSsttVwRtNfsC+qTp22Rkd5MCqFGQ8LcuUx3a+9CMBnOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-oPNFYxJECKnoH3HRozv0vN--n5d6Nbxg==

x-xss-protection → 1; mode=block;

```

(Optional) Response Body

The body of a response is often returned in structured format 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

This section describes how to use CSBS APIs to back up a cloud server.

NOTE

- The token obtained from IAM is valid for only 24 hours. If you want to use one token for authentication, you can cache it to avoid frequently calling.

Involved APIs

To use token authentication, you need to obtain a token and add **X-Auth-Token** to the request headers.

- API for obtaining tokens from IAM
- CSBS API for creating backups

Procedure

1. Obtain the token by following instructions in [Making an API Request](#).
2. Obtain the token by following instructions in [Obtaining a Project ID](#).
3. Make a POST request using the address `https://CSBS_endpoint/v1/{project_id}/providers/fc4d5750-22e7-4798-8a46-f48f62c4c1da/resources/{resource_id}/action`, where `{project_id}` is the ID you obtained in step 2 and `{resource_id}` is the server ID.
4. In the request headers, add **X-Auth-Token** and set its value to be the token obtained in the previous step.
5. Pass the following parameters to the response body:

```
{
  "protect" : {
    "backup_name" : "database_backup", //Backup name (optional parameter)
    "description" : "backup for database version 2.2.1 before upgrade." //Backup description
    (optional parameter)
  }
}
```

If the request is successful, the response contains the backup record ID (**checkpoint_id**).

If the request fails, an error code and error information are returned. For details, see [Error Codes](#).

6. Use **checkpoint_id** to filter backups. For detailed operations, see [Querying All Backups](#). When the backup status changes to **Available**, the backup is successful.

For details about error codes, see [Status Codes](#).

7. Obtain the backup ID from the response body. After the backup, you can use the backup record ID and backup ID to specifically restore a server or delete a backup.

5 API Description

5.1 Resource Management

5.1.1 Creating a Resource Backup

Currently, CSBS APIs are available only to existing users. If you are new users, use [CBR](#) and [CBR APIs](#).

Function

This API is used to select and directly back up resources.

URI

- URI format
POST `https://{endpoint}/v1/{project_id}/providers/{provider_id}/resources/{resource_id}/action`
- Parameter description

Table 5-1 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .

Parameter	Mandatory	Type	Description
resource_id	Yes	String	ID of a backup server or a disk on a backup server. For details about how to obtain the server ID, see the <i>Elastic Cloud Server API Reference</i> .

NOTICE

Backup provider IDs mentioned in this document are all **fc4d5750-22e7-4798-8a46-f48f62c4c1da**.

Request

- Parameter description

Table 5-2 Parameter description

Parameter	Mandatory	Type	Description
protect	Yes	protect_param	Backup parameters For details, see Table 5-3 .

- Parameter description of field **protect_param**

Table 5-3 Parameter description of field **protect_param**

Parameter	Mandatory	Type	Description
backup_name	No	String	Backup name. The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
description	No	String	Backup description. The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
incremental	No	Boolean	Backup type. Value True indicates incremental backup and value False indicates full backup. For the initial backup, full backup is always adopted, in spite of which value is set.

Parameter	Mandatory	Type	Description
resource_type	No	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS). If this parameter is not passed, the backup object type defaults to OS::Nova::Server .
extra_info	No	Dict	Additional information about the backup object
app_consistency	No	Integer	Whether to perform application-consistent backup. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed. Application-consistent backup backs up files and disks at the same point in time, including memory data, to ensure data integrity and consistency. Before using this parameter, check whether the current site supports this feature.

- Parameter description of field **extra_info**

Parameter	Mandatory	Type	Description
exclude_volumes	No	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Example request

```
POST
https://{endpoint}/v1/b942cc8342734d15bcb246babb1953cf/providers/fc4d5750-22e7-4798-8a46-
f48f62c4c1da/resources/9506416d-db6c-406e-8bca-c0f43793d914/action
{
  "protect" : {
    "backup_name" : "backup",
    "description" : "backup des",
    "extra_info" : {
      "exclude_volumes": ["8a8ccde2-0b9a-4450-a5f3-150816635f46"]
    },
    "app_consistency": 1
  }
}
```

```
}  
}
```

Response

- Parameter description

Table 5-4 Parameter description

Parameter	Type	Description
checkpoint	protect_resp	Backup response For details, see Table 5-5 .

- Parameter description of field **protect_resp**

Table 5-5 Parameter description of field **protect_resp**

Parameter	Type	Description
status	String	Backup status Enum:[waiting_protect, protecting, available, waiting_restore, restoring, error, waiting_delete, deleting,deleted]
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
id	String	Backup record ID
resource_graph	String	Resource diagram, which displays the inclusion relationship between backups and sub-backups
project_id	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
protection_plan	plan_resp	Backup plan information For details, see Table 5-6 .
extra_info	String	Additional information

- Parameter description of field **plan_resp**

Table 5-6 Parameter description of field **plan_resp**

Parameter	Type	Description
id	String	Backup policy ID
name	String	Backup policy name

Parameter	Type	Description
resources	List<resource>	Backup object list For details, see Table 5-7 .

- Parameter description of field **resource**

Table 5-7 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::IroniC::BareMetalServer (BMS).
name	String	Backup object name
extra_info	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Example response

```
{
  "checkpoint": {
    "status": "protecting",
    "created_at": "2017-04-18T01:21:52.701973",
    "id": "4468f4b8-7c78-4222-a2ca-346b5d557dd2",
    "resource_graph": null,
    "project_id": "b942cc8342734d15bcb246babb1953cf",
    "extra_info": null,
    "protection_plan": {
      "id": "fake_04f8ea0f-2000-4389-a5ce-93a3e20d0faf",
      "resources": [ {
        "type": "OS::Nova::Server",
        "id": "9506416d-db6c-406e-8bca-c0f43793d914",
        "name": "resource_9506416d-db6c-406e-8bca-c0f43793d914",
        "extra_info": {
          "exclude_volumes": ["8a8ccde2-0b9a-4450-a5f3-150816635f46"]
        }
      }
    ],
    "name": "server protect plan for 9506416d-db6c-406e-8bca-c0f43793d914"
  }
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.1.2 Querying Backup Capabilities of Resources

Function

This API is used to query whether resources can be backed up.

URI

- URI format
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/resources/
action
- Parameter description

Table 5-8 Parameter description

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

Parameter	Mandatory	Type	Description
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .

Request

- Parameter description

Table 5-9 Parameter description

Parameter	Mandatory	Type	Description
check_protectable	Yes	List<protectable_param>	Query parameter list For details, see Table 5-10 .

- Parameter description of field **protectable_param**

Table 5-10 Parameter description of field **protectable_param**

Parameter	Mandatory	Type	Description
resource_id	Yes	String	ID of the resource (server, or EVS disk) to be checked For details about how to obtain the server ID, see the <i>Elastic Cloud Server API Reference</i> . For details about how to obtain the disk ID, see the <i>Elastic Volume Service API Reference</i> .
resource_type	Yes	String	Type of the resource to be checked Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).

- Example request

```
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/resources/action
{
  "check_protectable": [ {
```

```
"resource_id" : "6507cb66-90dc-4a12-a573-c9f3398f899d",
"resource_type" : "OS::Nova::Server"
}]
}
```

Response

- Parameter description

Table 5-11 Parameter description

Parameter	Type	Description
protectable	List<check_resp>	Check result list For details, see Table 5-12 .

- Parameter description of field **check_resp**

Table 5-12 Parameter description of field **check_resp**

Parameter	Type	Description
result	Boolean	Whether backup or restoration is supported true: yes false: no
resource_type	String	Resource type Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
error_code	String	Error code. If an error occurs, a value is returned.
error_msg	String	Error message, which will be returned if the VM is associated with a backup policy. If an error occurs, a value is returned.
resource_id	String	Resource ID

- Example response

```
{
  "protectable" : [ {
    "resource_id" : "6507cb66-90dc-4a12-a573-c9f3398f899d",
    "resource_type" : "OS::Nova::Server",
    "result" : true
  } ]
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.1.3 Querying Restoration Capabilities of Resources

Function

This API is used to check whether target resources can be restored.

URI

- URI format
POST `https://{endpoint}/v1/{project_id}/providers/{provider_id}/resources/action`
- Parameter description

Table 5-13 Parameter description

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

Parameter	Mandatory	Type	Description
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .

Request

- Parameter description

Table 5-14 Parameter description

Parameter	Mandatory	Type	Description
check_restorable	Yes	List<restorable_param>	Query parameter list For details, see Table 5-15 .

- Parameter description of field **restorable_param**

Table 5-15 Parameter description of field **restorable_param**

Parameter	Mandatory	Type	Description
checkpoint_item_id	Yes	String	ID of the backup used to restore data
target	Yes	restorable_target	Restoration target For details, see Table 5-16 .

- Parameter description of field **restorable_target**

Table 5-16 Parameter description of field **restorable_target**

Parameter	Mandatory	Type	Description
resource_id	Yes	String	ID of the resource to which the backup is restored

Parameter	Mandatory	Type	Description
resource_type	Yes	String	Type of the target to which the backup is restored Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
volumes	Yes	List<restore_volume_mapping>	Disk mapping list for restoring an ECS. Enter the mapping between disks and backups based on the actual situation. For details, see Table 5-17 .

- Parameter description of field **restore_volume_mapping**

Table 5-17 Parameter description of field **restore_volume_mapping**

Parameter	Mandatory	Type	Description
backup_id	Yes	String	Disk backup ID. Use the API in Querying a Single Backup to obtain the disk backup ID.
volume_id	Yes	String	ID of the destination EVS disk for the restoration

- Example request

```
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/resources/action
{
  "check_restorable" : [ {
    "checkpoint_item_id" : "8986ce68-3da7-4d29-9cc2-1921e9504975",
    "target" : {
      "resource_type" : "OS::Nova::Server",
      "resource_id" : "5aa119a8-d25b-45a7-8d1b-88e127885635",
      "volumes" : [ {
        "backup_id" : "7ea119a8-d25b-43a7-8d1b-88e12788513a",
        "volume_id" : "45baf976-c20a-4894-a7c3-c94b7376bf55"
      } ]
    }
  } ]
}
```

Response

- Parameter description

Table 5-18 Parameter description

Parameter	Type	Description
restorable	List<check_resp>	Response parameter list For details, see Table 5-19 .

- Parameter description of field **check_resp**

Table 5-19 Parameter description of field **check_resp**

Parameter	Type	Description
result	Boolean	Whether restoration is supported
resource_type	String	Resource type
error_code	String	Error code
error_msg	String	Error reason
resource_id	String	Resource ID

- Example response

```
{
  "restorable": [ {
    "resource_id": "6507cb66-90dc-4a12-a573-c9f3398f899d",
    "resource_type": "OS::Nova::Server",
    "result": true,
    "error_msg": "",
    "error_code": ""
  } ]
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.2 Backup Policy Management

5.2.1 Creating a Backup Policy

Function

This API is used to create a backup policy to back up servers periodically. In addition, you can add a replication policy for the backup policy to replicate backups generated according to this backup policy.

URI

- URI format
POST https://{endpoint}/v1/{project_id}/policies
- Parameter description

Table 5-20 Parameter description

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

Request

- Parameter description

Table 5-21 Parameter description

Parameter	Mandatory	Type	Description
policy	Yes	policy_create	Creation parameters For details, see Table 5-22 .

- Parameter description of field **policy_create**

Table 5-22 Parameter description of field **policy_create**

Parameter	Mandatory	Type	Description
description	No	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
name	Yes	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	Yes	policy_param	Backup parameters For details, see Table 5-23 .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources	Yes	List<resource>	Backup object list. The list can be blank. For details, see Table 5-24 .
scheduled_operations	Yes	List<scheduled_operation_create>	Scheduling period For details, see Table 5-25 .

- Parameter description of field **policy_param**

Table 5-23 Parameter description of field **policy_param**

Parameter	Mandatory	Type	Description
common	No	common_param	General backup policy parameters, which are blank by default For details, see Parameter description of field common_param .

- Parameter description of field **common_param**

Parameter	Mandatory	Type	Description
app_consistency	No	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed. For details about the application-consistent backup feature, see the description in section "Creating a Resource Backup."

- Parameter description of field **resource**

Table 5-24 Parameter description of field **resource**

Parameter	Mandatory	Type	Description
id	Yes	String	ID of the object to be backed up
type	Yes	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	Yes	String	Backup object name
extra_info	No	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Mandatory	Type	Description
exclude_volumes	No	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_create**

Table 5-25 Parameter description of field **scheduled_operation_create**

Parameter	Mandatory	Type	Description
description	No	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	Yes	Boolean	Whether the backup policy is enabled If it is set to true , automatic scheduling is enabled. If it is set to false , automatic scheduling is disabled but you can execute the policy manually.
name	No	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_type	Yes	String	Operation type, which can be backup or replication Enumeration values: backup , replication
operation_definition	Yes	operation_definition	Scheduling period parameters For details, see Table 5-26 .
trigger	Yes	trigger	Scheduling policy

- Parameter description of field **operation_definition**

Table 5-26 Parameter description of field **operation_definition**

Parameter	Mandatory	Type	Description
max_backups	No	Integer	Maximum number of backups that can be automatically created for a backup object. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , the backups will not be cleared even though the configured retained backup quantity limit is exceeded.
retention_duration_days	No	Integer	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , backups will not be cleared even though the configured retention duration is exceeded.
permanent	No	Boolean	Whether backups are permanently retained. false : no. true : yes
plan_id	No	String	Backup policy ID
provider_id	No	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	No	String	ID of the replication destination region, which is mandatory for cross-region replication
destination_project_id	No	String	ID of the replication destination project, which is mandatory for cross-region replication For details about how to obtain the project ID, see Obtaining a Project ID .
enable_acceleration	No	Boolean	Whether to enable the acceleration function to shorten the replication time for cross-region replication. If this parameter is not set, the acceleration function is disabled.

Parameter	Mandatory	Type	Description
day_backups	No	Integer	Specifies the maximum number of retained daily backups. The latest backup of each day is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
week_backups	No	Integer	Specifies the maximum number of retained weekly backups. The latest backup of each week is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
month_backups	No	Integer	Specifies the maximum number of retained monthly backups. The latest backup of each month is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
year_backups	No	Integer	Specifies the maximum number of retained yearly backups. The latest backup of each year is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
timezone	No	String	Time zone where the user is located, for example, UTC+08:00. Set this parameter only after you have configured any of the parameters day_backups , week_backups , month_backups , and year_backups .

 NOTE

- If **permanent** is set to **true**, backups will be retained permanently, despite the settings of **max_backups** and **retention_duration_days**.
- If **permanent** is set to **false**, settings of **max_backups** and **retention_duration_days** are effective.
- If none of **permanent**, **max_backups**, and **retention_duration_days** is set, backups will be retained permanently.
- Parameter description of field **trigger**

Table 5-27 Parameter description of field **trigger**

Parameter	Mandatory	Type	Description
properties	Yes	trigger_properties	Scheduler properties For details, see Table 5-28 .

- Parameter description of field **trigger_properties**

Table 5-28 Parameter description of field **trigger_properties**

Parameter	Mandatory	Type	Description
pattern	Yes	String	Scheduling policy of the scheduler. The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set only to WEEKLY or DAILY . BYDAY can be set to MO , TU , WE , TH , FR , SA , or SU (seven days of a week). BYHOUR ranges from 0 to 23 hours. BYMINUTE ranges from 0 to 59 minutes. The scheduling interval cannot be less than 1 hour. A maximum of 24 time points are allowed in a day.

- Example request
 POST https://{endpoint}/v1/{project_id}/policies

```
{
  "policy": {
    "name": "my-plan",
    "description": "My plan",
    "provider_id": "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
  }
}
```

```

"parameters" : {
  "common" : {
    "app_consistency": 1
  }
},
"scheduled_operations" : [ {
  "name" : "my-backup-policy",
  "description" : "My backup policy",
  "enabled" : true,
  "operation_definition" : {
    "max_backups" : 20
  },
  "trigger" : {
    "properties" : {
      "pattern" : "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n"
    }
  },
  "operation_type" : "backup"
},{
  "name" : "my-replication-policy",
  "description" : "My replication policy",
  "enabled" : true,
  "operation_definition" : {
    "max_backups" : 20,
    "destination_region": "cn-south-1",
    "destination_project_id": "827099a5c63945d3b5a473ce9a1eaf88"
  },
  "trigger" : {
    "properties" : {
      "pattern" : "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n"
    }
  },
  "operation_type" : "replication"
}],
"resources" : [ {
  "id" : "45baf976-c20a-4894-a7c3-c94b7376bf55",
  "type" : "OS::Nova::Server",
  "name" : "resource1",
}, {
  "id" : "5aa119a8-d25b-45a7-8d1b-88e127885635",
  "type" : "OS::Nova::Server",
  "name" : "resource2"
}
]
}

```

Response

- Parameter description

Table 5-29 Parameter description

Parameter	Type	Description
policy	policy_res p	For details, see Table 5-30 .

- Parameter description of field **policy_resp**

Table 5-30 Parameter description of field **policy_resp**

Parameter	Type	Description
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
description	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
id	String	Backup policy ID
name	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	policy_param	Parameters of a backup policy For details, see Table 5-31 .
project_id	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources	List<resource>	Backup object list For details, see Table 5-32 .
scheduled_operations	List<scheduled_operations>	Scheduling period list For details, see Table 5-33 .
status	String	Backup policy status disabled : indicates that the backup policy is unavailable. enabled : indicates that the backup policy is available.

- Parameter description of field **policy_param**

Table 5-31 Parameter description of field **policy_param**

Parameter	Type	Description
common	common_param	Common parameters of a backup policy For details, see Parameter description of field common_param .

- Parameter description of field **common_param**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed. For details about the application-consistent backup feature, see the description in section "Creating a Resource Backup."

- Parameter description of field **resource**

Table 5-32 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of backup objects The value is fixed at OS::Nova::Server , indicating that the object type is ECSs.
type	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	String	Backup object name
extra_info	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_resp**

Table 5-33 Parameter description of field **scheduled_operation_resp**

Parameter	Type	Description
description	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	Boolean	Whether the backup policy is enabled The default value is true . If it is set to false , automatic scheduling is disabled but manual scheduling is supported.
name	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_type	String	Operation type, which can be backup or replication Enumeration values: backup , replication
operation_definition	operation_definition	Scheduling period parameters For details, see Table 5-34 .
trigger	trigger_resp	Scheduling policy
id	String	Scheduling period ID
trigger_id	String	Scheduler ID

- Parameter description of field **operation_definition**

Table 5-34 Parameter description of field **operation_definition**

Parameter	Type	Description
max_backups	String	Maximum number of backups that can be retained. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , the backups will not be cleared even though the configured retained backup quantity limit is exceeded.
retention_duration_days	String	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , backups will not be cleared even though the configured retention duration is exceeded.
permanent	String	Whether backups are permanently retained
plan_id	String	Backup policy ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	String	ID of the replication destination region, which is mandatory for cross-region replication
destination_project_id	String	ID of the replication destination project, which is mandatory for cross-region replication
enable_acceleration	String	Whether to enable the acceleration function to shorten the replication time for cross-region replication. If this parameter is not set, the acceleration function is disabled.

 **NOTE**

- If **permanent** is set to **true**, backups will be retained permanently, despite the settings of **max_backups** and **retention_duration_days**.
- If **permanent** is set to **false**, settings of **max_backups** and **retention_duration_days** are effective.
- If none of **permanent**, **max_backups**, and **retention_duration_days** is set, backups will be retained permanently.

- Parameter description of field **trigger_resp**

Table 5-35 Parameter description of field **trigger_resp**

Parameter	Type	Description
properties	trigger_properties_resp	Scheduler properties For details, see Parameter description of field trigger_properties_resp .
id	String	Scheduler ID
name	String	Scheduler name
type	String	Scheduling type. The value is fixed at time .

- Parameter description of field **trigger_properties_resp**

Table 5-36 Parameter description of field **trigger_properties_resp**

Parameter	Type	Description
pattern	String	Scheduling policy of the scheduler The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set to WEEKLY and DAILY , BYDAY can be set to MO , TU , WE , TH , FR , SA , and SU (seven days of a week), BYHOUR ranges from 0 hours to 23 hours, and BYMINUTE ranges from 0 minutes to 59 minutes. The scheduling interval must not be less than 1 hour. A maximum of 24 time points are allowed in a day.
start_time	String	Scheduler start time, for example, 2017-04-18T01:21:52
format	String	Scheduler type

- Example response

```
{
  "policy" : {
    "created_at" : "2017-03-07T09:27:40.928000",
    "description" : "My plan",
    "id" : "f766c171-9336-479a-8b30-b83cabf6381e",
    "name" : "my-plan",
    "parameters" : {
      "common" : {
        "app_consistency": 1
      }
    }
  }
}
```

```

    }
  },
  "project_id": "tenant",
  "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec",
  "resources": [ {
    "id": "45baf976-c20a-4894-a7c3-c94b7376bf55",
    "name": "resource1",
    "type": "OS::Nova::Server",
    "extra_info": {
      "exclude_volumes": ["8a8ccde2-0b9a-4450-a5f3-150816635f46"]
    }
  }, {
    "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "name": "resource2",
    "type": "OS::Nova::Server"
  } ],
  "scheduled_operations": [ {
    "description": "My backup policy",
    "enabled": true,
    "id": "9303a23d-e433-48e7-b88a-5ee6442e434e",
    "name": "my-backup-policy",
    "operation_definition": {
      "max_backups": "20",
      "plan_id": "f766c171-9336-479a-8b30-b83cabf6381e",
      "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec"
    },
    "operation_type": "backup",
    "trigger": {
      "id": "8178846b-766d-4fe6-941f-b38c76b6f3b9",
      "name": "default",
      "properties": {
        "pattern": "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
        "start_time": "2017-03-07 09:27:41",
        "format": "ical"
      },
      "type": "time"
    },
    "trigger_id": "8178846b-766d-4fe6-941f-b38c76b6f3b9"
  }, {
    "description": "My replication policy",
    "enabled": true,
    "id": "9303a23d-e433-48e7-b88a-5ee6442e434f",
    "name": "my-replication-policy",
    "operation_definition": {
      "max_backups": "20",
      "plan_id": "f766c171-9336-479a-8b30-b83cabf6381e",
      "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec",
      "destination_region": "cn-south-1",
      "destination_project_id": "827099a5c63945d3b5a473ce9a1eaf88"
    },
    "operation_type": "replication",
    "trigger": {
      "id": "8178846b-766d-4fe6-941f-b38c76b6f3b8",
      "name": "default",
      "properties": {
        "pattern": "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
        "start_time": "2017-03-07 09:27:41"
      },
      "type": "time"
    },
    "trigger_id": "8178846b-766d-4fe6-941f-b38c76b6f3b8"
  } ],
  "status": "suspended"
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.2.2 Deleting a Backup Policy

Function

This API is used to delete the backup policy of a specific ID.

URI

- URI format
DELETE https://{endpoint}/v1/{project_id}/policies/{policy_id}
- Parameter description

Table 5-37 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
policy_id	Yes	String	Backup policy ID

Request

- Parameter description

None

- Example request

DELETE https://{endpoint}/v1/{project_id}/policies/{policy_id}

Response

- Parameter description

None

- Example response

None

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.2.3 Updating a Backup Policy

Function

This API is used to update the backup policy of a specific ID.

URI

- URI format

PUT https://{endpoint}/v1/{project_id}/policies/{policy_id}

- Parameter description

Table 5-38 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
policy_id	Yes	String	Backup policy ID

Request

- Parameter description

Table 5-39 Parameter description

Parameter	Mandatory	Type	Description
policy	Yes	policy_update	For details, see Table 5-40 .

- Parameter description of field **policy_update**

Table 5-40 Parameter description of field **policy_update**

Parameter	Mandatory	Type	Description
description	No	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
name	No	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	No	policy_param	Backup parameters For details, see Table 5-41 .
resources	No	List<resource>	Backup objects For details, see Table 5-42 .

Parameter	Mandatory	Type	Description
scheduled_operations	No	List<scheduled_operation_update>	Scheduling period. A backup policy has only one backup period. For details, see Table 5-43 .

- Parameter description of field **policy_param**

Table 5-41 Parameter description of field **policy_param**

Parameter	Mandatory	Type	Description
common	No	common_param	General backup policy parameters, which are blank by default For details, see Parameter description of field common_param .

- Parameter description of field **common_param**

Parameter	Mandatory	Type	Description
app_consistency	No	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed. For details about the application-consistent backup feature, see the description in section "Creating a Resource Backup."

- Parameter description of field **resource**

Table 5-42 Parameter description of field **resource**

Parameter	Mandatory	Type	Description
id	Yes	String	ID of the object to be backed up
type	Yes	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	Yes	String	Backup object name
extra_info	No	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Mandatory	Type	Description
exclude_volumes	No	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_update**

Table 5-43 Parameter description of field **scheduled_operation_update**

Parameter	Mandatory	Type	Description
description	No	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	No	Boolean	Whether the backup policy is enabled The default value is true . If it is set to false , automatic scheduling is disabled but manual scheduling is supported.

Parameter	Mandatory	Type	Description
name	No	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_definition	No	operation_definition	Scheduling period parameter. This parameter is mandatory when creating a replication policy. For details, see Table 5-44 .
trigger	No	trigger	Scheduling policy. This parameter is mandatory when creating a replication policy.
operation_type	No	String	Operation type, which can be replication . Only cross-region replication is supported. This parameter is effective only when the backup policy is added with a replication policy.
id	No	String	Scheduling period ID. If this parameter is left null, a new policy will be created.

- Parameter description of field **operation_definition**

Table 5-44 Parameter description of field **operation_definition**

Parameter	Mandatory	Type	Description
max_backups	No	Integer	Maximum number of backups that can be automatically created for a backup object. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , the backups will not be cleared even though the configured retained backup quantity limit is exceeded.

Parameter	Mandatory	Type	Description
retention_duration_days	No	Integer	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , backups will not be cleared even though the configured retention duration is exceeded.
permanent	No	Boolean	Whether backups are permanently retained
plan_id	No	String	Backup policy ID
provider_id	No	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	No	String	ID of the replication destination region, which is required only for cross-region replication
destination_project_id	No	String	ID of the replication destination project, which is required only for cross-region replication
enable_acceleration	No	Boolean	Whether to enable the acceleration function to shorten the replication time for cross-region replication. If this parameter is not set, the acceleration function is disabled.
day_backups	No	Integer	Specifies the maximum number of retained daily backups. The latest backup of each day is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.

Parameter	Mandatory	Type	Description
week_backups	No	Integer	Specifies the maximum number of retained weekly backups. The latest backup of each week is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
month_backups	No	Integer	Specifies the maximum number of retained monthly backups. The latest backup of each month is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
year_backups	No	Integer	Specifies the maximum number of retained yearly backups. The latest backup of each year is saved in the long term. This parameter can be effective together with the maximum number of retained backups specified by max_backups . If this parameter is configured, timezone is mandatory.
timezone	No	String	Time zone where the user is located, for example, UTC+08:00. Set this parameter only after you have configured any of the parameters day_backups , week_backups , month_backups , and year_backups .

 NOTE

- If **permanent** is set to **true**, backups will be retained permanently, despite the settings of **max_backups** and **retention_duration_days**.
- If **permanent** is set to **false**, settings of **max_backups** and **retention_duration_days** are effective.
- If none of **permanent**, **max_backups**, and **retention_duration_days** is set, backups will be retained permanently.

- Parameter description of field **trigger**

Table 5-45 Parameter description of field **trigger**

Parameter	Mandatory	Type	Description
properties	Yes	trigger_properties	Scheduler properties For details, see Table 5-46 .

- Parameter description of field **trigger_properties**

Table 5-46 Parameter description of field **trigger_properties**

Parameter	Mandatory	Type	Description
pattern	Yes	String	Scheduling policy of the scheduler The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set to WEEKLY and DAILY , BYDAY can be set to MO , TU , WE , TH , FR , SA , and SU (seven days of a week), BYHOUR ranges from 0 hours to 23 hours, and BYMINUTE ranges from 0 minutes to 59 minutes. The scheduling interval must not be less than 1 hour. A maximum of 24 time points are allowed in a day.

- Example request

PUT https://{endpoint}/v1/{project_id}/policies/{policy_id}

```
{
  "policy": {
    "name": "my-plan",
    "parameters": {
      "common": {
        "app_consistency": 2
      }
    }
  },
  "scheduled_operations": [ {
    "id": "fed3c8f1-7b6e-4e24-b1ad-473838bad569",
    "name": "my-backup-policy",
    "description": "My backup policy ",
    "enabled": true,
    "operation_definition": {
      "retention_duration_days": -1,
```

```

    "max_backups" : 20
  },
  "trigger" : {
    "properties" : {
      "pattern" : "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n"
    }
  }
}, {
  "id" : "fed3c8f1-7b6e-4e24-b1ad-473838bad569",
  "name" : "my-replication-policy",
  "description" : "My replicationpolicy ",
  "enabled" : true,
  "operation_definition" : {
    "retention_duration_days" : -1,
    "max_backups" : 20,
    "destination_region": "south-1",
    "destination_project_id": "827099a5c63945d3b5a473ce9a1eaf88"
  },
  "trigger" : {
    "properties" : {
      "pattern" : "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n"
    }
  }
}
]
}
}

```

Response

- Parameter description

Table 5-47 Parameter description

Parameter	Type	Description
policy	policy_res p	For details, see Table 5-48 .

- Parameter description of field **policy_resp**

Table 5-48 Parameter description of field **policy_resp**

Parameter	Type	Description
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
description	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
id	String	Backup policy ID

Parameter	Type	Description
name	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	policy_param	Parameters of a backup policy For details, see Table 5-49 .
project_id	String	Project ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources	List<resource>	Backup object list For details, see Table 5-50 .
scheduled_operations	List<scheduled_operations>	Scheduling period list For details, see Table 5-51 .
status	String	Backup policy status <ul style="list-style-type: none"> ● disabled: indicates that the backup policy is unavailable. ● enabled: indicates that the backup policy is available.

- Parameter description of field **policy_param**

Table 5-49 Parameter description of field **policy_param**

Parameter	Type	Description
common	common_param	General backup policy parameters, which are blank by default For details, see Parameter description of field common_param .

- Parameter description of field **common_param**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed. For details about the application-consistent backup feature, see the description in section "Creating a Resource Backup."

- Parameter description of field **resource**

Table 5-50 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	String	Backup object name
extra_info	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_resp**

Table 5-51 Parameter description of field **scheduled_operation_resp**

Parameter	Type	Description
description	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	Boolean	Whether the scheduling period is enabled The default value is true . If it is set to false , automatic scheduling is disabled but manual scheduling is supported.
name	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_type	String	Operation type, which can be backup or replication Enum:[backup, replication]
operation_definition	operation_definition	Scheduling period parameters For details, see Table 5-52 .
trigger	trigger_response	Scheduling policy For details, see Table 5-53 .
id	String	Scheduling period ID

- Parameter description of field **operation_definition**

Table 5-52 Parameter description of field **operation_definition**

Parameter	Type	Description
max_backups	String	Maximum number of backups that can be automatically created for a backup object. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1, the backups will not be cleared even though the configured retained backup quantity limit is exceeded.

Parameter	Type	Description
retention_duration_days	String	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999. If the value is set to -1, backups will not be cleared even though the configured retention duration is exceeded.
permanent	String	Whether backups are permanently retained
plan_id	String	Backup policy ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	String	ID of the replication destination region, which is required only for cross-region replication
destination_project_id	String	ID of the replication destination project, which is required only for cross-region replication
enable_acceleration	String	Whether to enable the acceleration function to shorten the replication time for cross-region replication. If this parameter is not set, the acceleration function is disabled.

- Parameter description of field **trigger_resp**

Table 5-53 Parameter description of field **trigger_resp**

Parameter	Type	Description
properties	trigger_properties_resp	Scheduler properties For details, see Table 5-54 .

- Parameter description of field **trigger_properties_resp**

Table 5-54 Parameter description of field **trigger_properties_resp**

Parameter	Type	Description
pattern	String	Scheduling policy of the scheduler The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set to WEEKLY and DAILY , BYDAY can be set to MO , TU , WE , TH , FR , SA , and SU (seven days of a week), BYHOUR ranges from 0 hours to 23 hours, and BYMINUTE ranges from 0 minutes to 59 minutes. The scheduling interval must not be less than 1 hour. A maximum of 24 time points are allowed in a day.
start_time	String	Start time of the scheduler
format	String	Scheduler type The value is fixed at ical (Internet calendar).

- Example response

```
{
  "policy" : {
    "status" : "disabled",
    "provider_id" : "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
    "description" : "",
    "parameters" : {
      "common" : {
        "app_consistency": 2
      }
    },
    "scheduled_operations" : [ {
      "description" : "My backup policy ",
      "enabled" : true,
      "trigger" : {
        "properties" : {
          "pattern" : "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
          "start_time" : "2017-04-09 14:31:25",
          "format" : "ical"
        }
      },
      "operation_definition" : {
        "provider_id" : "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
        "plan_id" : "17e2b861-3a35-434d-afbb-073d5cd5af08",
        "max_backups" : "20",
        "retention_duration_days" : "-1",
        "permanent" : "False",
        "consistency" : "True"
      },
      "operation_type" : "backup",
      "id" : "fed3c8f1-7b6e-4e24-b1ad-473838bad569",
      "name" : "my-backup-policy"
    }
  ]
}
```

```

    },{
      "description": "My replication policy ",
      "enabled": true,
      "trigger": {
        "properties": {
          "pattern": "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
          "start_time": "2017-04-09 14:31:25",
          "format": "ical"
        }
      },
      "operation_definition": {
        "provider_id": "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
        "plan_id": "17e2b861-3a35-434d-afbb-073d5cd5af08",
        "max_backups": "20",
        "retention_duration_days": "-1",
        "permanent": "False",
        "destination_region": "south-1",
        "destination_project_id": "827099a5c63945d3b5a473ce9a1eaf88"
      },
      "operation_type": "replication",
      "id": "fed3c8f1-7b6e-4e24-b1ad-473838bad569",
      "name": "my-replication-policy"
    }],
    "id": "17e2b861-3a35-434d-afbb-073d5cd5af08",
    "name": "my-plan",
    "parameters": {
      "common": {
        }
      }
    },
    "created_at": "2017-04-09T14:31:25.504569",
    "project_id": "0c89d4e457c3401a89c65420fd45f3a2",
    "resources": [ {
      "type": "OS::Nova::Server",
      "id": "8421f405-1334-4206-b71c-b3f64d39abc4",
      "name": "wqeq3",
      "extra_info": {
        }
      }
    ]
  }
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.

Status Code	Description
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.2.4 Querying a Backup Policy

Function

This API is used to query the backup policy of a specific ID.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/policies/{policy_id}
- Parameter description

Table 5-55 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
policy_id	Yes	String	Backup policy ID

Request

- Parameter description

None

- Example request
GET https://{endpoint}/v1/{project_id}/policies/{policy_id}

Response

- Parameter description

Table 5-56 Parameter description

Parameter	Type	Description
policy	policy_resp	Query response

- Parameter description of field **policy_resp**

Table 5-57 Parameter description of field **policy_resp**

Parameter	Type	Description
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
description	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
id	String	Backup policy ID
name	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	policy_param	Parameters of a backup policy
project_id	String	Project ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources	List<resource>	Backup object list
scheduled_operations	List<scheduled_operation_resp>	Scheduling period list
status	String	Backup policy status

- Parameter description of field **policy_param**

Table 5-58 Parameter description of field **policy_param**

Parameter	Type	Description
common	common_param	General backup policy parameters, which are blank by default

- Parameter description of field **common_param**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed.

- Parameter description of field **resource**

Table 5-59 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	String	Backup object name
extra_info	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_resp**

Table 5-60 Parameter description of field **scheduled_operation_resp**

Parameter	Type	Description
description	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	Boolean	Whether the scheduling period is enabled The default value is true . If it is set to false , automatic scheduling is disabled but manual scheduling is supported.
name	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_type	String	Operation type, which can be backup or replication Enumeration values: backup , replication
operation_definition	operation_definition	Scheduling period parameters
trigger	trigger_resp	Scheduling policy
id	String	Scheduling period ID

- Parameter description of field **operation_definition**

Table 5-61 Parameter description of field **operation_definition**

Parameter	Type	Description
max_backups	Integer	Maximum number of backups that can be automatically created for a backup object. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , the backups will not be cleared even though the configured retained backup quantity limit is exceeded.

Parameter	Type	Description
retention_duration_days	Integer	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , backups will not be cleared even though the configured retention duration is exceeded.
permanent	Boolean	Whether backups are permanently retained
plan_id	String	Backup policy ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	String	ID of the destination region
destination_project_id	String	ID of the destination project
enable_acceleration	String	Whether to enable the acceleration function to shorten the replication time for cross-region replication.
day_backups	Integer	Number of retained daily backups. The value must be a positive integer.
week_backups	Integer	Number of retained weekly backups. The value must be a positive integer.
month_backups	Integer	Number of retained monthly backups. The value must be a positive integer.
year_backups	Integer	Number of retained annual backups. The value must be a positive integer.
timezone	String	Time zone configured when modifying or adding a policy, in the UTC+08:00 format

- Parameter description of field **trigger_resp**

Table 5-62 Parameter description of field **trigger_resp**

Parameter	Type	Description
properties	trigger_properties_resp	Scheduler properties

Parameter	Type	Description
id	String	Scheduler ID
name	String	Scheduler name
type	String	Scheduling type

- Parameter description of field **trigger_properties_resp**

Table 5-63 Parameter description of field **trigger_properties_resp**

Parameter	Type	Description
pattern	String	Scheduling policy of the scheduler The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set to WEEKLY and DAILY , BYDAY can be set to MO , TU , WE , TH , FR , SA , and SU (seven days of a week), BYHOUR ranges from 0 hours to 23 hours, and BYMINUTE ranges from 0 minutes to 59 minutes. The scheduling interval must not be less than 1 hour. A maximum of 24 time points are allowed in a day.
start_time	String	Scheduler start time, for example, 2017-04-18T01:21:52.701973
format	String	Scheduler type

- Example response

```
{
  "policy": {
    "created_at": "2017-03-07T09:31:08.265000",
    "description": "My plan",
    "id": "27b11f3f-578d-4464-89d1-7c6d5894f753",
    "name": "my-plan",
    "parameters": {
      "common": {
        "app_consistency": 1
      }
    }
  },
  "project_id": "tenant",
  "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec",
  "resources": [ {
    "id": "45baf976-c20a-4894-a7c3-c94b7376bf55",
    "name": "resource1",
    "type": "OS::Nova::Server",
    "extra_info": {
      "exclude_volumes": ["8a8ccde2-0b9a-4450-a5f3-150816635f46"]
    }
  }
]
```

```

}, {
  "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
  "name": "resource2",
  "type": "OS::Nova::Server",
  "extra_info": {
  }
}],
"scheduled_operations": [ {
  "description": "My backup policy",
  "enabled": true,
  "id": "3b2fdf8c-2cc2-4887-9605-a8443922f6f2",
  "name": "my-backup-policy",
  "operation_definition": {
    "max_backups": "20",
    "plan_id": "27b11f3f-578d-4464-89d1-7c6d5894f753",
    "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec"
  },
  "operation_type": "backup",
  "trigger": {
    "id": "f1246246-ec6a-4e9a-917e-d050dc2808c9",
    "name": "default",
    "properties": {
      "pattern": "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
      "start_time": "2017-03-07 09:31:08",
      "format": "ical"
    },
    "type": "time"
  },
  "trigger_id": "f1246246-ec6a-4e9a-917e-d050dc2808c9"
}],
"status": "disabled"
}
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.2.5 Querying the Backup Policy List

Function

This interface is used to query the backup policy list. Filtering parameters are supported.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/policies
- Parameter description

Table 5-64 Parameter description

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

Request

- Parameter description

Table 5-65 Parameter description

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of resources displayed per page. The value must be a positive integer. The value defaults to 1000 .
marker	No	String	ID of the last record displayed on the previous page when pagination query is applied

Parameter	Mandatory	Type	Description
sort	No	String	The value of sort is a group of properties separated by commas (,) and sorting directions. The value format is <key1>[:<direction>],<key2>[:<direction>], where the value of direction is asc (in ascending order) or desc (in descending order). If the parameter direction is not specified, backup policies are sorted in descending order by time. The value of sort contains a maximum of 255 characters.
name	No	String	Exact matching based on field name
all_tenants	No	Boolean	Whether backup policies of all tenants can be queried This parameter is only available for administrators.
offset	No	Integer	Offset value, which is a positive integer.

- Parameter description

None

- Example request

Querying all backup policies:

GET https://{endpoint}/v1/{project_id}/policies

Querying backup policies with certain conditions:

GET https://{endpoint}/v1/{project_id}/policies?sort=created_at%3Aasc&limit=3&offset=3

Response

- Parameter description

Table 5-66 Parameter description

Parameter	Type	Description
policies	List<policy_resp>	For details, see the policy_resp field description.

- Parameter description of field **policy_resp**

Table 5-67 Parameter description of field **policy_resp**

Parameter	Type	Description
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
description	String	Backup policy description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
id	String	Backup policy ID
name	String	Backup policy name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
parameters	policy_param	Parameters of a backup policy
project_id	String	Project ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources	List<resource>	Backup object list
scheduled_operations	List<scheduled_operations>	Scheduling period list
status	String	Backup policy status

- Parameter description of field **policy_param**

Table 5-68 Parameter description of field **policy_param**

Parameter	Type	Description
common	common_param	General backup policy parameters, which are blank by default

- Parameter description of field **common_param**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup on backup objects associated with the backup policy. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails). If app_consistency is not specified, application-consistent backup will not be performed.

- Parameter description of field **resource**

Table 5-69 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of the backup object Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).
name	String	Backup object name
extra_info	Dict	Additional information about the backup object

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List<volume_id>	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Parameter description of field **scheduled_operation_resp**

Table 5-70 Parameter description of field **scheduled_operation_resp**

Parameter	Type	Description
description	String	Scheduling period description The value consists of 0 to 255 characters and must not contain a greater-than sign (>) or less-than sign (<).
enabled	Boolean	Whether the scheduling period is enabled The default value is true . If it is set to false , automatic scheduling is disabled but manual scheduling is supported.
name	String	Scheduling period name The value consists of 1 to 255 characters and can contain only letters, digits, underscores (_), and hyphens (-).
operation_type	String	Operation type, which can be backup or replication Enumeration values: backup , replication
operation_definition	operation_definition	Scheduling period parameters
trigger	trigger_resp	Scheduling policy
id	String	Scheduling period ID

- Parameter description of field **operation_definition**

Table 5-71 Parameter description of field **operation_definition**

Parameter	Type	Description
max_backups	Integer	Maximum number of backups that can be automatically created for a backup object. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , the backups will not be cleared even though the configured retained backup quantity limit is exceeded.

Parameter	Type	Description
retention_duration_days	Integer	Duration of retaining a backup, in days. The value can be -1 or ranges from 0 to 99999 . If the value is set to -1 , backups will not be cleared even though the configured retention duration is exceeded.
permanent	Boolean	Whether backups are permanently retained
plan_id	String	Backup policy ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
destination_region	String	ID of the destination region
destination_project_id	String	ID of the destination project
enable_acceleration	String	Whether to enable the acceleration function to shorten the replication time for cross-region replication.
day_backups	Integer	Number of retained daily backups. The value must be a positive integer.
week_backups	Integer	Number of retained weekly backups. The value must be a positive integer.
month_backups	Integer	Number of retained monthly backups. The value must be a positive integer.
year_backups	Integer	Number of retained annual backups. The value must be a positive integer.
timezone	String	Time zone configured when modifying or adding a policy, in the UTC+08:00 format

- Parameter description of field **trigger_resp**

Table 5-72 Parameter description of field **trigger_resp**

Parameter	Type	Description
properties	trigger_properties_resp	Scheduler properties

Parameter	Type	Description
id	String	Scheduler ID
name	String	Scheduler name
type	String	Scheduling type

- Parameter description of field **trigger_properties_resp**

Table 5-73 Parameter description of field **trigger_properties_resp**

Parameter	Type	Description
pattern	String	Scheduling policy of the scheduler The value consists of a maximum of 10,240 characters. The scheduling policy complies with iCalendar RFC 2445, but it supports only four parameters, which are FREQ , BYDAY , BYHOUR , and BYMINUTE . FREQ can be set to WEEKLY and DAILY , BYDAY can be set to MO , TU , WE , TH , FR , SA , and SU (seven days of a week), BYHOUR ranges from 0 hours to 23 hours, and BYMINUTE ranges from 0 minutes to 59 minutes. The scheduling interval must not be less than 1 hour. A maximum of 24 time points are allowed in a day.
start_time	String	Start time of the scheduler, for example, 2017-03-07 09:31:08
format	String	Scheduler type

- Example response

```
{
  "policies": [ {
    "created_at": "2017-03-07T09:31:08.265000",
    "description": "My plan",
    "id": "27b11f3f-578d-4464-89d1-7c6d5894f753",
    "name": "my-plan",
    "parameters": {
      "common": {
        "app_consistency": 1
      }
    }
  },
  "project_id": "tenant",
  "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec",
  "resources": [ {
    "id": "45baf976-c20a-4894-a7c3-c94b7376bf55",
    "name": "resource1",
    "type": "OS::Nova::Server",
    "extra_info": {
      "exclude_volumes": ["8a8ccde2-0b9a-4450-a5f3-150816635f46"]
    }
  }
]
```

```

}, {
  "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
  "name": "resource2",
  "type": "OS::Nova::Server",
  "extra_info": {
  }
}],
"scheduled_operations": [ {
  "description": "My backup policy",
  "enabled": true,
  "id": "3b2fdf8c-2cc2-4887-9605-a8443922f6f2",
  "name": "my-backup-policy",
  "operation_definition": {
    "max_backups": "20",
    "plan_id": "27b11f3f-578d-4464-89d1-7c6d5894f753",
    "provider_id": "c714180d-ea34-4b13-9a5e-577c7c416eec"
  },
  "operation_type": "backup",
  "trigger": {
    "id": "f1246246-ec6a-4e9a-917e-d050dc2808c9",
    "name": "default",
    "properties": {
      "pattern": "BEGIN:VCALENDAR\r\nBEGIN:VEVENT\r\nRRULE:FREQ=WEEKLY;BYDAY=TH;BYHOUR=12;BYMINUTE=27\r\nEND:VEVENT\r\nEND:VCALENDAR\r\n",
      "start_time": "2017-03-07 09:31:08",
      "format": "ical"
    },
    "type": "time"
  },
  "trigger_id": "f1246246-ec6a-4e9a-917e-d050dc2808c9"
}],
"status": "disabled"
}]
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3 Backup Management

5.3.1 Executing a Backup Policy

Function

This API is used to manually execute a backup policy and create a backup task.

URI

- URI format
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints
- Parameter description

Table 5-74 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .

Request

- Parameter description

Table 5-75 Parameter description

Parameter	Mandatory	Type	Description
checkpoint	Yes	checkpoint_req	For details, see the checkpoint_req field description.

- Parameter description of field **checkpoint_req**

Table 5-76 Parameter description of field **checkpoint_req**

Parameter	Mandatory	Type	Description
parameters	Yes	checkpoint_param	Backup parameters
plan_id	Yes	String	Backup policy ID. Refer to the backup policy ID that is returned by the API of Querying the Backup Policy List .

- Parameter description of field **checkpoint_param**

Table 5-77 Parameter description of field **checkpoint_param**

Parameter	Mandatory	Type	Description
auto_trigger	No	Boolean	Whether automatic trigger is enabled
resources	No	List<String>	ID list of resources to be backed up

- Example request

```
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints
{
  "checkpoint": {
    "plan_id": "62171999-3df1-42f7-9513-6f9b1bea4744",
    "parameters": {
      "auto_trigger": false,
      "resources": [ "7a32a8b5-7977-4e24-b5da-e0eb457db75b", "b2b433bf-7dd6-4a74-aa8f-85673dfbda48" ]
    }
  }
}
```

Response

- Parameter description

Table 5-78 Parameter description

Parameter	Type	Description
checkpoint	checkpoint_resp	See the checkpoint_resp field description.

- Parameter description of field **checkpoint_resp**

Table 5-79 Parameter description of field **checkpoint_resp**

Parameter	Type	Description
status	String	Status. The value can be protecting, deleting, available, or error.
created_at	String	Creation time, for example, 2016-12-06T21:20:29.898823
id	String	Backup record ID
resource_graph	String	Resource diagram, which displays the mapping relationship between resources and backups. If the value is null, the backup contains only the resource backup of the entire system.
project_id	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
protection_plan	plan_resp	Backup policy information
extra_info	String	Additional information about the backup object, such as the backup creation mode

- Parameter description of field **plan_resp**

Table 5-80 Parameter description of field **plan_resp**

Parameter	Type	Description
id	String	Backup policy ID
name	String	Backup policy name
resources	List<resource>	Backup object list

- Parameter description of field **resource**

Table 5-81 Parameter description of field **resource**

Parameter	Type	Description
id	String	ID of the object to be backed up
type	String	Entity object type of backup objects Possible values are OS::Nova::Server (ECS) and OS::Ironic::BareMetalServer (BMS).

Parameter	Type	Description
name	String	Backup object name
extra_info	String	Additional information of the resource

- Parameter description of field **extra_info**

Parameter	Type	Description
exclude_volumes	List	Disk ID list. If the backup object is an ECS or BMS, disks specified in this list will not be backed up.

- Example response

```
{
  "checkpoint" : {
    "status" : "protecting",
    "created_at" : "2016-12-06T21:20:29.898823",
    "id" : "14626f11-b54a-44ea-8e69-7463e527506a",
    "resource_graph" : null,
    "project_id" : "b942cc8342734d15bcb246babb1953cf",
    "protection_plan" : {
      "id" : "6a6cda7e-7b89-4b14-8e5c-3b6821a97d2c",
      "resources" : [ {
        "type" : "OS::Nova::Server",
        "id" : "1c960fe4-e679-421a-97cd-4f7463d2344b",
        "name" : "server0",
        "extra_info": "{\"exclude_volumes\": [\"53dbb1f8-0b14-4850-9346-ef5067acbeb5\"]}"
      } ],
      "name" : "backup"
    },
    "extra_info": "{\"created_by\": \"manual\"}"
  }
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.

Status Code	Description
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.2 Querying the Number of Backups

Function

This interface is used to query the number of backups. Filtering parameters are supported.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/checkpoint_items/count
- Parameter description

Table 5-82 Parameter description

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

Request

- Parameter description

Table 5-83 Parameter description

Parameter	Mandatory	Type	Description
status	No	String	Query based on field status is supported. Value range: waiting_protect, protecting, available, waiting_restore, restoring, error, waiting_delete, deleting, and deleted

Parameter	Mandatory	Type	Description
all_tenants	No	Boolean	Whether to query the backup of all tenants. Only administrators can query the backup of all tenants.
name	No	String	Supports query by backup name.
az	No	String	AZ-based filtering is supported.
resource_id	No	String	Filtering based on the backup object ID is supported.
resource_name	No	String	Filtering based on the backup object name is supported.
start_time	No	String	Filtering based on the backup time is supported. This is the backup start time. For example, 2017-04-15T04:25:38
end_time	No	String	Filtering based on the backup time is supported. This is the backup end time. For example, 2017-04-15T04:25:38
image_type	No	String	Supports filtering by backup image type. This parameter can be used only when images are created using backups. The image type can be obtained from Image Management Service.
policy_id	No	String	Filtering based on policy_id is supported.
ip	No	String	Searching based on the VM's IP address is supported.
checkpoint_id	No	String	Filtering based on checkpoint_id is supported.
resource_type	No	String	Type of the backup object. For example, OS::Nova::Server
dec	No	Boolean	Whether the backup is a dedicated backup

- Parameter description

None

- Example request

Querying the total number of backups:
GET https://{endpoint}/v1/{project_id}/checkpoint_items/count

Querying the number of backups with certain conditions:
GET https://{endpoint}/v1/{project_id}/checkpoint_items/count?status=error

Response

- Parameter description

Table 5-84 Parameter description

Parameter	Type	Description
count	Integer	Number of backups

- Example response

```
{  
  "count" : 10  
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.3 Querying a Single Backup

Function

This API is used to query the backup of a specific ID.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/checkpoint_items/{checkpoint_item_id}
- Parameter description

Table 5-85 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
checkpoint_item_id	Yes	String	Backup ID

Request

- Parameter description
None
- Example request
GET https://{endpoint}/v1/{project_id}/checkpoint_items/{checkpoint_item_id}

Response

- Parameter description

Table 5-86 Parameter description

Parameter	Type	Description
checkpoint_item	checkpoint_item	For details, see Table 5-87 .

- Parameter description of field **checkpoint_item**

Table 5-87 Parameter description of field **checkpoint_item**

Parameter	Type	Description
checkpoint_id	String	Backup record ID
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
extend_info	Dict	Extension information
id	String	Backup ID

Parameter	Type	Description
name	String	Backup name
resource_id	String	ID of the object to be backed up
status	String	Backup status. Possible values are waiting_protect , protecting , available , waiting_restore , restoring , error , waiting_delete , deleting , and deleted . Enum:[waiting_protect, protecting, available, waiting_restore, restoring, error, waiting_delete, deleting,deleted]
updated_at	String	Modification time, for example, 2017-04-18T01:21:52.701973
backup_data	Dict	VM metadata
description	string	Backup description
resource_type	String	Type of the backup object
replication_records	List<replication_record>	Replication record list.
protected_at	String	Time when the data was backed up, for example, 2017-04-18T01:21:52.701973
expired_at	String	Expiration time. The upcoming scheduling of the policy after this point in time will clear the backup automatically.

- Parameter description of field **extend_info**

Table 5-88 Parameter description of field **extend_info**

Parameter	Type	Description
auto_trigger	Boolean	Whether automatic trigger is enabled
average_speed	Integer	Average rate. The unit is kb/s
copy_from	String	The destination region of a backup replication. The default value is empty.
copy_status	String	Backup replication status. The default value is na . Possible values are na , waiting_copy , copying , success , and fail .
fail_code	fail_code	Error code

Parameter	Type	Description
fail_op	String	Type of the failed operation Enum: [backup, restore, delete]
fail_reason	String	Description of the failure cause
image_type	String	Backup type. For example, backup
incremental	Boolean	Whether the backup is an enhanced backup
progress	Integer	Backup progress. The value is an integer ranging from 0 to 100.
resource_az	String	AZ to which the backup resource belongs
resource_name	String	Backup object name
resource_type	String	Type of the backup object. For example, OS::Nova::Server
size	Integer	Backup capacity. The unit is MB.
space_saving_ratio	Integer	Space saving rate
volume_backups	List<volume_backup>	Volume backup list
finished_at	String	Backup completion time, for example, 2017-04-18T01:21:52.701973
supported_restore_mode	String	Restoration mode. Possible values are na , snapshot , and backup . If the value is snapshot , the backup can be used to create a full-server image. backup : Data is restored from backups of the EVS disks of the server. na : Restoration is not supported.
os_images_data	List<image_data>	Image data. This parameter has a value if an image has been created for the VM.
support_ild	Boolean	Whether to allow lazyloading for fast restoration
retention_duration	Integer	Replica retention period, in days. Value -1 indicates that replicas will be retained permanently. This parameter has a value if the resource you query is a replica.

Parameter	Type	Description
dec	Boolean	Whether the replica is generated from a dedicated backup
dec_size	String	Accumulated size (MB) of dedicated backups
app_consistency	Dict	Application-consistent backup information. For details, see the app_consistency field description.
taskid	String	Job ID
hypervisor_type	String	Virtualization type The value is fixed at QEMU .

- Description of field **app_consistency**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails).

Parameter	Type	Description
app_consistency_status	Integer	Whether the freezing and unfreezing operations are successful during application-consistent backup. 0 indicates that application-consistent backup is not enabled. 1 indicates that application-consistent backup is enabled but I/Os fail to be frozen or unfrozen. 2 indicates that application-consistent backup is disabled and I/Os are frozen and then unfrozen successfully. 11 indicates that application-consistent backup is enabled, I/Os fail to be frozen or unfrozen, and the Agent version is not the latest. 12 indicates that application-consistent backup is enabled, I/Os are frozen and then unfrozen successfully, and the Agent version is not the latest. If the common backup process fails, application-consistent backup fails no matter whether the freezing and unfreezing operations are successful. For details about the application-consistent backup feature, see the description in section "Creating a Resource Backup."
app_consistency_error_code	String	Error code returned if application-consistent backup fails
app_consistency_error_message	String	Cause of the application-consistent backup failure

- Parameter description of field **backup_data**

Table 5-89 Parameter description of field **backup_data**

Parameter	Type	Description
__openstack_region_name	String	Name of the AZ where the server is located. If this parameter is left blank, such information about the server has not been obtained.
cloudservicetype	String	Server type The value is fixed at server (ECSs).
disk	Integer	System disk size corresponding to the server specifications

Parameter	Type	Description
imagetype	String	Image type The value can be: gold : public image private : private image market : market image
ram	Integer	Memory size of the server, in MB
vcpus	Integer	CPU cores corresponding to the server
eip	String	Elastic IP address of the server. If this parameter is left blank, such information about the server has not been obtained.
private_ip	String	Internal IP address of the server. If this parameter is left blank, such information about the server has not been obtained.

- Parameter description of field **image_data**

Parameter	Type	Description
image_id	String	Image ID

- Parameter description of field **fail_code**

Table 5-90 Parameter description of field **fail_code**

Parameter	Type	Description
Code	Long	Error code
Description	String	Error description

- Parameter description of field **volume_backup**

Table 5-91 Parameter description of field **volume_backup**

Parameter	Type	Description
average_speed	Integer	Average rate, in MB/s
bootable	Boolean	Whether the disk is bootable The value can be true or false .
id	String	Cinder backup ID

Parameter	Type	Description
image_type	String	Backup set type: backup Enum:[backup]
incremental	Boolean	Whether incremental backup is used
name	String	EVS disk backup name
size	Integer	Accumulated size (MB) of backups
source_volume_id	String	Source disk ID
source_volume_size	Integer	Source volume size in GB
space_saving_ratio	Integer	Space saving rate
status	String	Status
source_volume_name	String	Source volume name
snapshot_id	String	ID of the snapshot from which the backup is generated
source_volume_service_type	String	Source volume type. Currently, the supported types are EVS and DSS.

- Parameter description of field **replication_record**

Parameter	Type	Description
id	String	Replication record ID
source_region	String	Replication source region
source_project_id	String	ID of the replication source project
source_checkpoint_id	String	ID of the source backup record used for replication
source_checkpoint_item_id	String	ID of the source backup used for replication
destination_region	String	ID of the replication destination region
destination_project_id	String	ID of the destination project
destination_checkpoint_id	String	Record ID of the destination backup used for replication
destination_checkpoint_item_id	String	Replica ID
status	String	Replication status, which can be replicating , success , fail , skip , or waiting_replicate

Parameter	Type	Description
plan_id	String	ID of the in-use replication policy
created_at	String	Replication start time, for example, 2017-04-18T01:21:52.701973
extra_info	Dict	Additional information of the replication

- Example response

```
{
  "checkpoint_item": {
    "status": "available",
    "backup_data": {
      "eip": "",
      "cloudservicetype": "",
      "ram": 4096,
      "vcpus": 4,
      "_openstack_region_name": "",
      "private_ip": "",
      "disk": 0,
      "imagetype": ""
    },
    "name": "backup_d32c",
    "resource_id": "f45c477a-57e5-465f-999f-d845083962db",
    "created_at": "2017-04-15T04:20:37.277880",
    "checkpoint_id": "f672a1bb-6912-446a-816c-72792c5263e0",
    "updated_at": "2017-04-15T04:25:38.680638",
    "resource_type": "OS::Nova::Server",
    "extend_info": {
      "auto_trigger": false,
      "space_saving_ratio": 0,
      "copy_status": "na",
      "fail_reason": "",
      "resource_az": "az1.dc1",
      "image_type": "backup",
      "finished_at": "2017-04-15T04:25:38.675478",
      "average_speed": 0,
      "copy_from": "",
      "supported_restore_mode": "backup",
      "support_llid": false,
      "os_images_data": [
        {
          "image_id": "fe84dd80-0229-4918-8d3d-cbb33154b565"
        }
      ],
      "volume_backups": [
        {
          "status": "available",
          "space_saving_ratio": 0,
          "name": "manualbk_47222",
          "bootable": true,
          "average_speed": 0,
          "source_volume_size": 20,
          "source_volume_id": "ee27f809-6fb5-40ae-ac46-c932bb4ee8fe",
          "incremental": false,
          "image_type": "backup",
          "source_volume_name": "karbor_02",
          "id": "70675cbc-d3a8-43a7-9f81-c8b6bc3f5d6d",
          "size": 0,
          "snapshot_id": "36f520e1-d2ea-4907-956a-3d9cd53e2d38"
        },
        {
          "status": "available",
          "space_saving_ratio": 0,

```

```

    "name": "manualbk_47222",
    "bootable": true,
    "average_speed": 0,
    "source_volume_size": 20,
    "source_volume_id": "e7f48980-927c-48de-afd4-f0245d2e5100",
    "incremental": false,
    "image_type": "backup",
    "source_volume_name": "karbor_01",
    "id": "8eb98e91-8924-4d4b-b6d6-28fb7b751e9c",
    "size": 0,
    "snapshot_id": "36f520e1-d2ea-4907-956a-3d9cd53e2d38"
  }
],
"fail_code": {},
"incremental": false,
"taskid": "e0a21692-2192-11e7-bf23-0242ac110007",
"hypervisor_type": "QEMU",
"progress": 100,
"fail_op": "",
"resource_name": "karbor_02",
"size": 0
},
"id": "90c1d5fa-1b9f-4aeb-b2f4-81c806e98190"
}
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.4 Querying All Backups

Function

This API is used to query all backups. Filtering parameters are supported.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/checkpoint_items
- Parameter description

Table 5-92 Parameter description

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

Request

- Parameter description

Table 5-93 Parameter description

Parameter	Mandatory	Type	Description
status	No	String	Query based on field status is supported. Value range: waiting_protect, protecting, available, waiting_restore, restoring, error, waiting_delete, deleting, and deleted
limit	No	Integer	Number of resources displayed per page. The value must be a positive integer. The value defaults to 1000 .
marker	No	String	ID of the last record displayed on the previous page

Parameter	Mandatory	Type	Description
sort	No	String	A group of properties separated by commas (,) and sorting directions. The value format is <key1>[:<direction>],<key2>[:<direction>], where the value of direction is asc (in ascending order) or desc (in descending order). If the parameter direction is not specified, the default sorting direction is desc . The value of sort contains a maximum of 255 characters. Enumeration values of the key are as follows: created_at , updated_at , name , status , protected_at , and id .
all_tenants	No	Boolean	Whether to query the backup of all tenants. Only administrators can query the backup of all tenants.
name	No	String	Fuzzy search based on field name is supported.
az	No	String	Filtering based on the backup AZ is supported.
resource_id	No	String	Filtering based on the backup object ID is supported.
resource_name	No	String	Fuzzy search based on the backup object name is supported.
start_time	No	String	Filtering based on the backup start time is supported. For example: 2017-04-18T01:21:52.701973
end_time	No	String	Filtering based on the backup end time is supported. For example: 2017-04-18T01:21:52.701973
image_type	No	String	Supports filtering by image type, for example, backup .
policy_id	No	String	Filtering based on policy_id is supported.
offset	No	Integer	Offset value, which is a positive integer.

Parameter	Mandatory	Type	Description
checkpoint_id	No	String	Filtering based on checkpoint_id is supported.
resource_type	No	String	Type of the backup object. For example, OS::Nova::Server
dec	No	Boolean	Whether the backup is a dedicated backup

- Parameter description

None

- Example request

Querying all backups:

GET https://{endpoint}/v1/{project_id}/checkpoint_items

Querying backups with specified parameters:

GET https://{endpoint}/v1/{project_id}/checkpoint_items?name=backup&status=error&limit=2

Response

- Parameter description

Table 5-94 Parameter description

Parameter	Type	Description
checkpoint_items	List<checkpoint_item>	-

- Parameter description of field **checkpoint_item**

Table 5-95 Parameter description of field **checkpoint_item**

Parameter	Type	Description
checkpoint_id	String	Backup record ID
created_at	String	Creation time, for example, 2017-04-18T01:21:52.701973
extend_info	Dict	Extension information
id	String	Backup ID
name	String	Backup name
resource_id	String	ID of the object to be backed up

Parameter	Type	Description
status	String	Backup status The value can be waiting_protect , protecting , available , waiting_restore , restoring , error , waiting_delete , deleting , or deleted .
updated_at	String	Modification time, for example, 2017-04-18T01:21:52.701973
backup_data	Dict	VM metadata
description	string	Backup description
resource_type	String	Type of backup objects
replication_records	List<replication_record>	Replication record list.
protected_at	String	Time when the data was backed up, for example, 2017-04-18T01:21:52.701973
expired_at	String	Expiration time. The upcoming scheduling of the policy after this point in time will clear the backup automatically.

- Parameter description of field **extend_info**

Table 5-96 Parameter description of field **extend_info**

Parameter	Type	Description
auto_trigger	Boolean	Whether automatic trigger is enabled
average_speed	Integer	Average rate. The unit is kb/s
copy_from	String	The destination region of a backup replication. The default value is empty.
copy_status	String	Backup replication status. The default value is na . Possible values are na , waiting_copy , copying , success , and fail .
fail_code	fail_code	Error code
fail_op	String	Type of the failed operation Enum: [backup, restore, delete]
fail_reason	String	Failure cause
image_type	String	Backup type, for example, backup

Parameter	Type	Description
incremental	Boolean	Whether the backup is an enhanced backup
progress	Integer	Replication progress. The value is an integer ranging from 0 to 100.
resource_az	String	AZ to which the backup resource belongs
resource_name	String	Backup object name
resource_type	String	Type of the backup object. For example, OS::Nova::Server
size	Integer	Backup capacity. The unit is MB.
space_saving_ratio	Integer	Space saving rate
volume_backups	List<volume_backup>	Volume backup list
finished_at	String	Backup completion time, for example, 2017-04-18T01:21:52.701973
supported_restore_mode	String	Restoration mode. Possible values are na , snapshot , and backup . If the value is snapshot , the backup can be used to create a full-server image. backup : Data is restored from backups of the EVS disks of the server. na : Restoration is not supported.
os_images_data	List<image_data>	Image data. This parameter has a value if an image has been created for the VM.
support_ild	Boolean	Whether to allow lazyloading for fast restoration
retention_duration	Integer	Replica retention period, in days. Value -1 indicates that replicas will be retained permanently. This parameter has a value if the resource you query is a replica.
dec	Boolean	Whether the replica is generated from a dedicated backup
dec_size	String	Accumulated size (MB) of dedicated backups

Parameter	Type	Description
app_consistency	Dict	Application-consistent backup information
taskid	String	Job ID
hypervisor_type	String	Virtualization type The value is fixed at QEMU .

- Description of field **app_consistency**

Parameter	Type	Description
app_consistency	Integer	Whether to perform application-consistent backup. Possible values are 0 (no), 1 (yes, and stop backing up data after the application-consistent backup fails), and 2 (yes, and continue to perform crash-consistent backup after the application-consistent backup fails).
app_consistency_status	Integer	Whether the freezing and unfreezing operations are successful during application-consistent backup. 0 indicates that application-consistent backup is not enabled. 1 indicates that application-consistent backup is enabled but I/Os fail to be frozen or unfrozen. 2 indicates that application-consistent backup is disabled and I/Os are frozen and then unfrozen successfully. 11 indicates that application-consistent backup is enabled, I/Os fail to be frozen or unfrozen, and the Agent version is not the latest. 12 indicates that application-consistent backup is enabled, I/Os are frozen and then unfrozen successfully, and the Agent version is not the latest. If the common backup process fails, application-consistent backup fails no matter whether the freezing and unfreezing operations are successful.
app_consistency_error_code	String	Error code returned if application-consistent backup fails
app_consistency_error_message	String	Cause of the application-consistent backup failure

- Parameter description of field **image_data**

Table 5-97 Parameter description of field **image_data**

Parameter	Type	Description
image_id	String	Image ID

- Parameter description of field **backup_data**

Table 5-98 Parameter description of field **backup_data**

Parameter	Type	Description
__openstack_region_name	String	Name of the AZ where the server is located. If this parameter is left blank, such information about the server has not been obtained.
cloudservicetype	String	Server type
disk	Integer	System disk size corresponding to the server specifications
imagetype	String	Image type The value can be: gold : public image private : private image market : market image
ram	Integer	Memory size of the server, in MB
vcpus	Integer	CPU cores corresponding to the server
eip	String	Elastic IP address of the server. If this parameter is left blank, such information about the server has not been obtained.
private_ip	String	Internal IP address of the server. If this parameter is left blank, such information about the server has not been obtained.

- Parameter description of field **fail_code**

Table 5-99 Parameter description of field **fail_code**

Parameter	Type	Description
Code	Long	Error code
Description	String	Error description

- Parameter description of field **volume_backup**

Table 5-100 Parameter description of field **volume_backup**

Parameter	Type	Description
average_speed	Integer	Average rate, in MB/s
bootable	Boolean	Whether the disk is bootable The value can be true or false .
id	String	Cinder backup ID
image_type	String	Backup set type: backup Enum:[backup]
incremental	Boolean	Whether incremental backup is used
name	String	EVS disk backup name
size	Integer	Accumulated size (MB) of backups
source_volume_id	String	Source disk ID
source_volume_size	Integer	Source volume size in GB
space_saving_ratio	Integer	Space saving rate
status	String	Status
source_volume_name	String	Source volume name
snapshot_id	String	ID of the snapshot from which the backup is generated
source_volume_service_type	String	Source volume type. Currently, the supported types are EVS and DSS.
dec_size	String	Accumulated size (MB) of dedicated backups

- Parameter description of field **replication_record**

Parameter	Type	Description
id	String	Replication record ID
source_region	String	Replication source region
source_project_id	String	ID of the replication source project
source_checkpoint_id	String	ID of the source backup record used for replication
source_checkpoint_item_id	String	ID of the source backup used for replication

Parameter	Type	Description
destination_region	String	ID of the replication destination region
destination_project_id	String	ID of the replication destination project
destination_checkpoint_id	String	Record ID of the destination backup used for replication
destination_checkpoint_item_id	String	Replica ID
status	String	Replication status, which can be replicating , success , fail , skip , or waiting_replicate
plan_id	String	ID of the in-use replication policy
created_at	String	Replication start time, for example, 2017-04-18T01:21:52.701973
extra_info	Dict	Additional information of the replication

- Example response

```
{
  "checkpoint_items": [ {
    "status": "available",
    "backup_data": {
      "eip": "",
      "cloudservicetype": "",
      "ram": 4096,
      "vcpus": 4,
      "__openstack_region_name": "",
      "private_ip": "",
      "disk": 0,
      "imagetype": ""
    },
    "name": "backup_d32c",
    "resource_id": "f45c477a-57e5-465f-999f-d845083962db",
    "created_at": "2017-04-15T04:20:37.277880",
    "checkpoint_id": "f672a1bb-6912-446a-816c-72792c5263e0",
    "updated_at": "2017-04-15T04:25:38.680638",
    "resource_type": "OS::Nova::Server",
    "extend_info": {
      "auto_trigger": false,
      "space_saving_ratio": 0,
      "copy_status": "na",
      "fail_reason": "",
      "resource_az": "az1.dc1",
      "image_type": "backup",
      "finished_at": "2017-04-15T04:25:38.675478",
      "average_speed": 0,
      "copy_from": "",
      "supported_restore_mode": "backup",
      "support_llid": false,
      "os_images_data": [
        {
          "image_id": "fe84dd80-0229-4918-8d3d-cbb33154b565"
        }
      ]
    },
    "volume_backups": [ {
```

```

"status": "available",
"space_saving_ratio": 0,
"name": "manualbk_47222",
"bootable": true,
"average_speed": 0,
"source_volume_size": 20,
"source_volume_id": "ee27f809-6fb5-40ae-ac46-c932bb4ee8fe",
"incremental": false,
"image_type": "backup",
"source_volume_name": "karbor_xj_02",
"id": "70675cbc-d3a8-43a7-9f81-c8b6bc3f5d6d",
"size": 0,
"snapshot_id": "36f520e1-d2ea-4907-956a-3d9cd53e2d38"
}, {
"status": "available",
"space_saving_ratio": 0,
"name": "manualbk_47222",
"bootable": true,
"average_speed": 0,
"source_volume_size": 20,
"source_volume_id": "e7f48980-927c-48de-afd4-f0245d2e5100",
"incremental": false,
"image_type": "backup",
"source_volume_name": "karbor_01",
"id": "8eb98e91-8924-4d4b-b6d6-28fb7b751e9c",
"size": 0,
"snapshot_id": "36f520e1-d2ea-4907-956a-3d9cd53e2d38"
} ],
"fail_code": { },
"incremental": false,
"taskid": "e0a21692-2192-11e7-bf23-0242ac110007",
"hypervisor_type": "QEMU",
"progress": 100,
"fail_op": "",
"resource_name": "karbor_02",
"size": 0
},
"id": "90c1d5fa-1b9f-4aeb-b2f4-81c806e98190"
} ]
}

```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.5 Deleting a Backup

Function

This API is used to delete a backup.

NOTE

The deletion operation is asynchronous. Tasks will be queued depending on the background task execution status. Therefore, the deletion will not be completed immediately. You need to query the task information continuously to obtain the deletion result. A maximum of 30 minutes is required.

For example, a user can execute a maximum of five backup deletion tasks concurrently. If the number exceeds five, the sixth and subsequent tasks are queued.

URI

- URI format
DELETE https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints/{checkpoint_id}
- Parameter description

Table 5-101 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
checkpoint_id	Yes	String	Backup record ID

Request

- Parameter description

Table 5-102 Parameter description

Parameter	Mandatory	Type	Description
checkpoint_items	No	String	Indicates the ID list of the backup records to be deleted. If this parameter is not set, all backup records of checkpoint will be deleted.

- Parameter description

None

- Example request

Deleting all backups in the specified backup record:

DELETE https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints/{checkpoint_id}

Deleting a single backup in the specified backup record:

DELETE https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints/{checkpoint_id}?
checkpoint_items={checkpoint_items_id}

Response

- Parameter description

None

- Example response

```
{
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.6 Executing a Replication Policy

Function

This API is used to select a backup policy to create replicas for backups that are generated according to the backup policy and that have not been replicated.

URI

- URI format
POST `https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints/replicate`
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .

Request

- Element description

Parameter	Mandatory	Type	Description
replication	Yes	replication_param	Replication parameter

- Parameter description of field **replication_param**

Parameter	Mandatory	Type	Description
policy_id	Yes	String	Backup policy ID

Parameter	Mandatory	Type	Description
auto_trigger	No	Boolean	Whether to automatically trigger replication this time. The default value is false , which indicates the replication needs to be manually triggered.
destination_region	Yes	String	Destination region of the replication, which can be obtained by calling the API of Querying the Replication Capability .
destination_project_id	Yes	String	ID of the replication destination project
enable_acceleration	No	Boolean	Whether to enable the acceleration function to shorten the time spent on cross-region replication. For details about acceleration fees, visit the official website.

- Example request

```
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoints/replicate
{
  "replication": {
    "policy_id": "d4acdab5-6d4d-42d8-8c56-ae94e53bfe87",
    "auto_trigger": false,
    "destination_region": "cn-east-2",
    "destination_project_id": "e0b97bac-532c-4c51-96fa-4b3a32253be4"
  }
}
```

Response

- Element description

Parameter	Type	Description
replication	replication_resp	Replication response parameter

- Parameter description of field **replication_resp**

Parameter	Type	Description
project_id	String	Project ID

Parameter	Type	Description
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
policy_id	String	Backup policy ID
source_region	String	Replication source region
destination_region	String	ID of the replication destination region
destination_project_id	String	ID of the replication destination project
checkpoint_items	List<checkpointitem_resp>	List of backups to be replicated

- Parameter description of field **checkpointitem_resp**

Parameter	Type	Description
checkpoint_item_id	String	ID of the source backup used for replication
replication_record_id	String	Replication record ID

- Example response

```
{
  "replication": {
    "project_id": "4800fde9-66f8-4458-b805-4c01066b9568",
    "provider_id": "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
    "policy_id": "d4acdab5-6d4d-42d8-8c56-ae94e53bfe87",
    "source_region": "cn-north-1",
    "destination_region": "cn-east-2",
    "destination_project_id": "e0b97bac-532c-4c51-96fa-4b3a32253be4",
    "checkpoint_items": [
      {"checkpoint_item_id": "c4dfa74c-7e60-4361-86b9-9a3250115ed6",
        "replication_record_id": "6f55d79b-9f01-4d3d-b4fb-a63e3070ea12"},
      {"checkpoint_item_id": "0eaf4230-854e-41ea-bf0c-392d4c26c8b5",
        "replication_record_id": "5d850404-bc98-45b2-9f0b-6ff2f77d2b6b"}]
  }
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.3.7 Replicating a Backup

Function

This API is used to replicate a backup. You cannot replicate a backup if the backup has one replica in or is being replicated to the destination region.

URI

- URI format
POST `https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoint_items/{checkpoint_item_id}/replicate`
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID For details about how to obtain the project ID, see Obtaining a Project ID .
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
checkpoint_item_id	Yes	String	ID of the source backup used for replication

Request

- Element description

Parameter	Mandatory	Type	Description
replication	Yes	replication_param	Replication parameter

- Parameter description of field **replication_param**

Parameter	Mandatory	Type	Description
name	No	String	Replica name
description	No	String	Replica description
destination_region	Yes	String	Destination region of the replication, which can be obtained by calling the API of Querying the Replication Capability .
destination_project_id	Yes	String	ID of the replication destination project
enable_acceleration	No	Boolean	Whether to enable the acceleration function to shorten the replication time for cross-region replication. If this parameter is not set, the acceleration function is disabled.

- Example request

```
POST https://{endpoint}/v1/{project_id}/providers/{provider_id}/checkpoint_items/{checkpoint_item_id}/replicate
{
  "replication": {
    "destination_region": "cn-east-2",
    "destination_project_id": "e0b97bac-532c-4c51-96fa-4b3a32253be4",
    "name": "rep_from_bd3c8a42-7dd4-4400-b091-2777c51a5c9a",
    "description": "do replication"
  }
}
```

Response

- Element description

Parameter	Type	Description
replication	replication_resp	Replication response parameter

- Parameter description of field **replication_resp**

Parameter	Type	Description
project_id	String	Project ID
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
checkpoint_item_id	String	ID of the source backup used for replication
source_region	String	Replication source region
destination_region	String	ID of the replication destination region
destination_project_id	String	ID of the replication destination project
replication_record_id	String	Replication record ID

- Example response

```
{
  "replication" :{
    "project_id": "4800fde9-66f8-4458-b805-4c01066b9568",
    "provider_id": "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
    "checkpoint_item_id": "c4dfa74c-7e60-4361-86b9-9a3250115ed6",
    "source_region": "cn-north-1",
    "destination_region": "cn-east-2",
    "destination_project_id": "e0b97bac-532c-4c51-96fa-4b3a32253be4",
    "replication_record_id": "042cd047-a7c9-4905-a859-402950ac8440"
  }
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.

Status Code	Description
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.4 Restoration Management

5.4.1 Creating a Restoration Task

Function

This API is used to perform backup-based restoration.

URI

- URI format
POST https://{endpoint}/v1/{project_id}/restores
- Parameter description

Table 5-103 Parameter description

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

Request

- Parameter description

Table 5-104 Parameter description

Parameter	Mandatory	Type	Description
restore	Yes	restore_req	Restoration request

- Parameter description of field **restore_req**

Table 5-105 Parameter description of field **restore_req**

Parameter	Mandatory	Type	Description
checkpoint_id	Yes	String	Backup record ID
parameters	Yes	restore_param	Restoration parameters
provider_id	Yes	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
restore_target	No	String	Restoration target

- Parameter description of field **restore_param**

Table 5-106 Parameter description of field **restore_param**

Parameter	Mandatory	Type	Description
checkpoint_item_id	Yes	String	Backup ID
power_on	Yes	Boolean	Whether to instantly power on the VM after restoration
targets	Yes	restore_target	Restoration target

- Parameter description of field **restore_target**

Table 5-107 Parameter description of field **restore_target**

Parameter	Mandatory	Type	Description
server_id	Yes	String	ID of the ECS to be restored
volumes	Yes	List<restore_volume_mapping>	List of the mappings between disk backups and target disks

- Parameter description of field **restore_volume_mapping**

Table 5-108 Parameter description of field **restore_volume_mapping**

Parameter	Mandatory	Type	Description
backup_id	Yes	String	EVS disk backup ID
volume_id	Yes	String	ID of the destination EVS disk for the restoration

- Example request

```
POST https://{endpoint}/v1/{project_id}/restores
{
  "restore" : {
    "provider_id" : "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
    "checkpoint_id" : "a2b9fb53-2770-4fcd-9bad-6cadd56e6c09",
    "parameters" : {
      "checkpoint_item_id" : "504b7d59-c361-411f-9ed3-814f35d08e3d",
      "power_on" : true,
      "targets" : {
        "server_id" : "f45c477a-57e5-465f-999f-d845083962db",
        "volumes" : [ {
          "backup_id" : "bc118c24-3234-4afd-8423-d66d3d677649",
          "volume_id" : "ee27f809-6fb5-40ae-ac46-c932bb4ee8fe"
        }
      ]
    }
  }
}
```

Response

- Parameter description

Table 5-109 Parameter description

Parameter	Type	Description
restore	restore_resp	Restoration response

- Parameter description of field **restore_resp**

Table 5-110 Parameter description of field **restore_resp**

Parameter	Type	Description
id	String	Restoration ID
checkpoint_id	String	Backup record ID
parameters	restore_param	Restoration parameters
project_id	String	Project ID

Parameter	Type	Description
provider_id	String	Backup provider ID, which specifies whether the backup object is a server or disk. This parameter has a fixed value. For CSBS, the value is fc4d5750-22e7-4798-8a46-f48f62c4c1da .
resources_reason	Dict	Cause of the resource restoration failure
resources_status	Dict	Resource status after the resource is restored, for example, available
restore_target	String	Restoration target
status	String	Status

- Parameter description of field **restore_param**

Table 5-111 Parameter description of field **restore_param**

Parameter	Type	Description
checkpoint_item_id	String	Backup ID
power_on	Boolean	Whether to power on the VM after restoration
targets	restore_target	Restoration target

- Parameter description of field **restore_target**

Table 5-112 Parameter description of field **restore_target**

Parameter	Type	Description
server_id	String	ID of the ECS to be restored
volumes	List<restore_volume_mapping>	List of the mappings between disk backups and target disks

- Parameter description of field **restore_volume_mapping**

Table 5-113 Parameter description of field **restore_volume_mapping**

Parameter	Type	Description
backup_id	String	EVS disk backup ID

Parameter	Type	Description
volume_id	String	ID of the disk to which data is restored

- Example response

```
{
  "restore" : {
    "restore_target" : "http://192.168.1.2:35357/v2.0/",
    "status" : "in_progress",
    "provider_id" : "fc4d5750-22e7-4798-8a46-f48f62c4c1da",
    "resources_status" : in_progress,
    "parameters" : {
      "power_on" : true,
      "targets" : {
        "server_id" : "f45c477a-57e5-465f-999f-d845083962db",
        "volumes" : [ {
          "backup_id" : "bc118c24-3234-4afd-8423-d66d3d677649",
          "volume_id" : "ee27f809-6fb5-40ae-ac46-c932bb4ee8fe"
        } ]
      }
    },
    "checkpoint_item_id" : "504b7d59-c361-411f-9ed3-814f35d08e3d"
  },
  "checkpoint_id" : "a2b9fb53-2770-4fcd-9bad-6cadd56e6c09",
  "project_id" : "b942cc8342734d15bcb246babb1953cf",
  "id" : "d3a54e80-6483-485d-98f6-c0409e6f2e0a",
  "resources_reason" : { }
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.5 Quota Management

5.5.1 Querying Quotas

Function

This API is used to query tenant quotas.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/quotas
- Parameter description

Table 5-114 Parameter description

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

Request

- Parameter description
None
- Example request
GET https://{endpoint}/v1/{project_id}/quotas

Response

- Parameter description

Table 5-115 Parameter description

Parameter	Type	Description
quotas	quota	See the quota field description.

- Parameter description of field **quota**

Table 5-116 Parameter description of field **quota**

Parameter	Type	Description
resources	List<resource_resp>	Quota resources

- Parameter description of field **resource_resp**

Table 5-117 Parameter description of field **resource_resp**

Parameter	Type	Description
unit	String	Unit
used	Integer	Used quota
quota	Integer	Quota size
type	String	Type backup_capacity specifies the backup storage capacity quota. Value -1 indicates no restriction on the quota size. backups specifies the number of retained backups.

- Example response

```
{
  "quotas" : {
    "resources" : [{
      "type" : "backup_capacity",
      "unit" : "GB",
      "quota" : -1,
      "used" : 0
    },
    {
      "used": 0,
      "type": "backups",
      "quota": 600
    }
  ]
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

5.6 Replication Management

5.6.1 Querying the Replication Capability

Function

This API is used to query the replication capability of the current region. For example, you can use this API to query the supported destination regions when the current region functions as the source region.

URI

- URI format
GET https://{endpoint}/v1/{project_id}/replication_capabilities
- Parameter description

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

Request

- Element description

None

- Example request
GET https://{endpoint}/v1/{project_id}/replication_capabilities

Response

- Element description

Parameter	Type	Description
regions	region	List of regions that support replication

- Parameter description of field **region**

Parameter	Type	Description
name	String	Region where the cloud service resides
replication_destinations	List<String>	List of supported destination regions

- Example response

```
{
  "regions": [ {
    "name": "cn-north-1",
    "replication_destinations": [ "cn-south-1", "cn-east-2" ]
  } ]
}
```

Status Codes

- Normal

Status Code	Description
200	OK

- Abnormal

Status Code	Description
400	Invalid request parameters.
401	Authentication failed.
403	No operation permission.
404	Requested object not found.
500	Service internal error.
503	Service unavailable.

Error Codes

For details, see [Error Codes](#).

6 Permissions Policies and Supported Actions

This section describes fine-grained permissions management for your CSBS. If your HUAWEI CLOUD account does not require individual IAM users, you can skip this section.

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 ECSs using an API, the user must have been granted permissions that allow the `ecs:servers:list` action.

Supported Actions

CSBS 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.
- **Action:** Specific operations that are allowed or denied.
- **Authorization scope:** 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. For details about the differences between IAM and enterprise projects, see [Differences Between IAM and Enterprise Management](#).

- APIs: REST APIs that can be called by a user who has been granted specific permissions.

7 Public Parameters

7.1 Status Codes

- Normal

Status Code	Description
200 OK	The results of GET and PUT operations are returned as expected.
201 Created	The results of the POST operation are returned as expected.
202 Accepted	The request has been accepted for processing.
204 No Content	The results of the DELETE operation are returned as expected.

- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.
401 Unauthorized	You must enter the username and password to access the requested page.
403 Forbidden	You are forbidden to access the page requested.
404 Not Found	The server could not find the requested page.
405 Method Not Allowed	You are not allowed to use the method specified in the request.
406 Not Acceptable	The response generated by the server cannot be accepted by the client.

Status Code	Description
407 Proxy Authentication Required	You must use the proxy server for authentication. Then the request can be processed.
408 Request Timeout	The request timed out.
409 Conflict	The request cannot be processed due to a conflict.
500 Internal Server Error	The request is not completed because the service is abnormal.
501 Not Implemented	The request is not completed because the server does not support the requested function.
502 Bad Gateway	The request is not completed because the request is invalid.
503 Service Unavailable	The request is not completed because the system is out of service temporarily.
504 Gateway Timeout	Gateway times out.

7.2 Error Codes

An example response error is returned as follows:

```
{
  "error_code": xxxx//Error code
  "error_msg": xxxxx//Error description
}
```

Table 7-1 describes the error codes.

Table 7-1 Error code description

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
Shared	400	CSBS.0001	The number of backup policies has reached the upper limit.	Service over limit	Delete an existing backup policy and try again.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.6000	The server does not exist.	server do not exist	Check whether the server exists.
	400	CSBS.6001	The server has stopped.	The server has stopped.	Check whether the server has stopped.
	400	CSBS.6003	Currently, only cloud server backup is supported.	Resource (%s) type (%s) is not support protection.	Select servers and add them to the backup policy.
	400	CSBS.6005	The current server status does not allow backup.	Server (%s) is already in service.	Ensure that the server status allows restoration and try again.
	400	CSBS.6006	This type of server does not support backup.	Server (%s) status (%s) is not allowed to protect.	Select servers of a correct type.
	400	CSBS.6007	Servers without EVS disks do not support backup.	No volume attached to the server (%s) for protect.	Check whether an EVS disk is attached to the server.
	400	CSBS.6010	The server does not support backup, because it hosts shared EVS disks.	Volume (%s) attached to server (%s) is shareable volume.	Remove the shared disk and perform the backup again.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.6013	Only server restoration is supported currently.	Resource (%s) type (%s) is not support restoration.	Select servers for restoration.
	400	CSBS.6014	The specified EVS disk is not attached to the server to be restored.	Volume(s) (%s) not found in target server.	Select an EVS disk attached to the server to be restored.
	400	CSBS.6015	The server in the current status cannot be restored.	The server is restoring.	Ensure that the server status allows restoration and try again.
	400	CSBS.9001	Parameter verification failed.	provider invalid	Enter the correct parameter.
	403	CSBS.9009	The user is not authenticated by real name. Authenticate the user's real name and try again.	User is unverified.	Authenticate the user's real name and try again.
	400	CSBS.9009	The backup or replication space after applying for reduction is less than the used space.	The backup or replication space after reduction cannot be less than the used space.	Ensure that the remaining space is greater than the used space.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	500	CSBS.9998	Service unavailable	System not support	Try later or contact technical support.
	500	CSBS.9999	System internal error	%s failed	Try later or contact technical support.
	400	CSBS.0002	The volumes of the server have different storage types. (Not used currently.)	Volume of services from different storagetype	Use the same type of volumes.
	400	BackupService.4003	Your data has been migrated successfully. Go to the CBR console page for further operations. The current page will no longer provide services.	Your data has been migrated successfully . Go to the CBR console page for further operations. The current page will no longer provide services.	Go to CBR Console to use the backup function.
	400	BackupService.4008	This service is available for existing users only. If you are new users, go to CBR Console to use Cloud Backup and Recovery.	This service is available for existing users only. If you are new users, go to CBR Console to use Cloud Backup and Recovery.	Go to CBR Console to use the backup function.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
Backup management	500	CSBS.1001	The backup task cannot be executed, because a manual backup task is being executed.	The policy is executing backup.	Re-execute the backup task after the manual backup task is complete.
	400	CSBS.2003	The selected backup is in the Backing up, Restoring, or Deleting state.	item in executing	Try again after the task is complete.
	400	CSBS.2004	The policy is being executed for backup. Try again after the backup is complete.	item in plan executing	Try again after the task is complete.
	404	CSBS.3001	The backup does not exist.	Checkpoint_item (%s) is not found.	Check whether the backup exists.
	500	CSBS.5001	The replication is being executed.	copy executing	Wait until the replication is complete and try again.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.6027	The AZ to which the ECS belongs does not support backup.	The AZ where the resource (%s) is located does not support backup.	Contact the administrator or to reconfigure the AZ.
	500	CSBS.6030	The backup task cannot be executed, because an automatic backup task is being executed.	auto plan executing	Re-execute the backup task after the automatic backup task is complete.
	400	CSBS.6031	The replication task cannot be executed, because a manual replication task is being executed.	manual copy executing	Re-execute the replication task after the manual replication task is complete.
	500	CSBS.6032	There are no servers that can be backed up in the backup policy.	plan has no resource backup	Bind the policy to servers or wait until the bound server is restored to a state that supports backup.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.6033	A server with DSS disks cannot be backed up.	Service type of volume %s(belong to server %s) is dss.	Check whether a dedicated storage disk has been attached to the server.
	400	CSBS.6034	A server with DESS disks cannot be backed up.	Service type of volume %s(belong to server %s) is dess.	Check whether a dedicated enterprise storage disk has been attached to the server.
	400	CSBS.6061	The current server does not support backup or restoration .	volume of server in this pod does not support backup	Deselect the disks that do not support backup and retry.
	500	CSBS.8001	Backups in the current status cannot be registered as images.	The backup status is not allowed to create image	Try later or contact technical support.
	400	CSBS.8007	An image has been created by using the backup and the backup cannot be deleted.	The backup {checkpoint_item_id} has register to image, can't be delete	Delete the created image first and then the backup.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	500	CSBS.8008	The current backup status does not support query.	The backup {checkpoint_item_id}'s status is not allowed query	Check whether the backup exists.
	500	CSBS.8009	The backup does not contain the system disk data and cannot be used to create an image.	The backup has not system disk backup is not allowed to create image	Check whether the backup contains a system disk.
	500	CSBS.8012	Replicas cannot be used for replication.	The destination region % (destination_region) is not supported.	Check whether the replica is a copy.
	500	CSBS.8014	The policy is being used for replication. Try later.	The policy is replicating to {region}.	The policy is being used for replication. Try later.
	500	CSBS.8015	The backup is being replicated or has been replicated to the destination region.	Backup % (backup_id)s no need to replicate to % (region)s, the replication record status is: % (record_status)s.	The backup is being replicated or has been replicated to the destination region.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.8017	Insufficient permission to replicate the target server to this project.	Do not support replicate to the given project.	Insufficient permission to replicate the target server to this project. Check the permission.
	400	CSBS.8021	The backup is not in the available state and cannot be used for replication.	The checkpoint item % (backup_id)s not support replicate. item status: % (backup_status)s.	Check the status of the backup.
	500	CSBS.8022	Replicas cannot be used for replication.	The type of % (image_type)s for backup % (backup_id)s is not support replicate.	Check whether the backup is a replica.
	500	CSBS.8023	Replication is not allowed, because the backup is not for an ECS.	Replication is not allowed, because the backup's resource type is not support.	Check whether the backup is an ECS backup.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	500	CSBS.8024	Replication is not allowed, because the source ECS of the backup does not contain any system disk.	Replication is not allowed, because the resource of the backup does not contain any system disk.	Check whether the ECS to be backed up contains system disks.
	500	CSBS.8025	Replication is not supported because whether the backup has been replicated to the destination region cannot be identified.	Can not check replication of backup is exist in region or not.	Check whether the backup has been replicated to the destination region.
	500	CSBS.8026	Backup cannot be performed due to insufficient dedicated backup capacity.	The project %s dec used capacity is %s, dec capacity is %s.	Check whether the dedicated backup capacity is sufficient.
	500	CSBS.8026	VBS does not support cross-region replication.	volume backup is not supported replication.	Check whether the backup is an EVS backup.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.9006	Insufficient quota	Quota exceeded for resources: %s	Contact the administrator to change the quota or delete the backups that are no longer needed.
	500	CSBS.1002	The selected server is being backed up. (Not used currently.)	resource_in_protecting	Try again after the backup task is complete.
	500	CSBS.2001	A task is being executed by using this backup policy. (Not used currently.)	item in plan is executing	Try again after the task is complete.
Backup policy management	404	CSBS.3000	The backup policy does not exist.	plan not found	Check whether the backup policy exists.
	500	CSBS.5001	Failed to stop the policy.	Schedule operation status can't be set unable	Check the backup policy status.
	400	CSBS.6004	The server has been bound to a backup policy and cannot be bound again.	Server (%s) is already in service.	Check whether the server has been bound to a backup policy.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.9007	The backup policy name already exists.	duplicate service name	Change the name and try again.
Replication management	500	CSBS.6028	Quota information failed to be obtained.	Update backup or replication space failure.	Check the network connection or contact technical support.
Restoration management	400	CSBS.4000	The current backup status does not allow restoration.	checkpoint item not available	Try again later or contact technical support.
	400	CSBS.6016	This type of server does not support restoration.	can not restore server type is not allow	Select servers of a correct type.
	400	CSBS.6017	The specified backup disk is not in the specified backup.	Can not find backup(s) (%s) in checkpoint item (%s).	Select a backup disk in the specified backup for restoration.
	400	CSBS.6018	The system does not support the restoration of some backup disks in the backup.	Not assign backup(s) (%s) to volume(s), partial restore is not supported."	Select all backup disks in the backup for restoration.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	500	CSBS.6019	The type of the target server is different from that of the source server.	The source server (%s) type (%s) is not the same as the target server (%s) type (%s).	Select a target server of the same type as the source server.
	400	CSBS.6020	Servers without EVS disks do not support restoration .	No volume attached to the server (%s) for restore.	Check whether an EVS disk is attached to the server.
	400	CSBS.6021	The backup cannot be restored to a shared EVS disk of the server.	Volume (%s) attached to server (%s) is shareable volume.	Restore the backup to a non-shared EVS disk of the server.
	500	CSBS.6023	The backup for a data disk cannot be restored to a system disk of the server.	Can not restore data volume to system volume. server id is (%s).	Restore the backup to a data disk of the server.

Module	HTTP Status Code	Error Code	Description	Error Message	Measure
	400	CSBS.6024	Restoration cannot be executed because the capacity of the specified EVS disk attached to the server is less than that of the backed-up disk.	Target volume (%s) size (%s) small than volume backup (%s) size (%s).	Expand the EVS disk and try again, or restore data of the backup disk to a disk that has a larger capacity.
	400	CSBS.6025	Restoration is not supported between the AZ to which the specified backup belongs and the AZ to which the server belongs.	The AZ of local checkpoint item (%s) is not support to restore the resource (%s).	Contact the administrator to reconfigure the AZ.
	400	CSBS.9008	Only backups in the Available state can be used to create ECSs.	Checkpoint Item Status Not Support Create VM	Check whether the backup is available.
Task management	404	CSBS.6040	The backup job to be deleted does not exist.	task not found	Check whether the backup job exists.

Karbor native APIs:

<http://developer.openstack.org/api-ref/data-protection-orchestration/v1/index.html>

7.3 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 API used to [query for projects based on 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"
  }
}
```

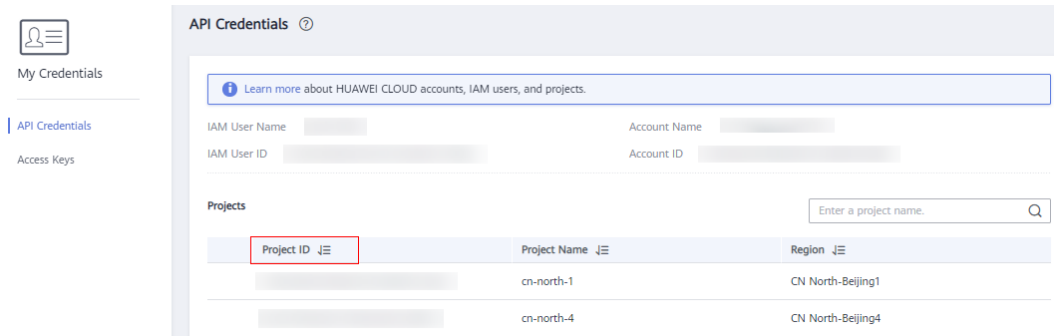
Obtain a Project ID from the Console

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 **API Credentials** page, view the project ID in the project list.

Figure 7-1 Viewing the project ID



A Change History

Release Date	What's New
2019-06-05	This is the eleventh official release. Updated the following content: Added the description of permissions.
2019-04-16	This is the tenth official release. Updated the following content: Deleted unnecessary API descriptions.
2019-03-01	This issue is the ninth official release. Updated the following content: Optimized the "Error Codes" section.
2019-02-14	This is the eighth official release. Updated the following content: Added the description of fields related to application-consistent backup.
2018-10-30	This is the seventh official release. Updated the following content: <ul style="list-style-type: none"> Deleted the "limit" field from the "Querying the Number of Backups."
2018-10-18	This is the sixth official release. Updated the following content: <ul style="list-style-type: none"> Added APIs related to and description about cross-region replication. Added fields related to Dedicated CSBS.
2018-08-06	This is the fifth official release. Updated the following content: Added fields related to BMS backup.

Release Date	What's New
2018-05-30	This is the fourth official release. Updated the following content: <ul style="list-style-type: none">• Added description of image-related fields.• Added fields related to backup by specifying disks.
2017-12-30	This issue is the third official release. Updated the following content: <ul style="list-style-type: none">• Resolved some ease-of-use issues.
2017-11-15	This issue is the second official release. Updated the following content: <ul style="list-style-type: none">• Added the support for specifying the backup interval in units of days.
2017-07-30	This issue is the first official release.