Direct Connect

API Reference

Issue 01

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Contents

1 API Overview

These APIs allow you to use all Direct Connect functions, for example, performing operations on connections, virtual gateways, virtual interfaces, quotas, LAGs, and tags.

Table 1-1 describes the APIs provided by Direct Connect.

Table 1-1 Direct Connect APIs

Resource	APIs
Connections	APIs for querying connection details, updating a connection, deleting a connection, querying the connection list, querying the hosted connection list, creating a hosted connection, querying hosted connection details, updating hosted connection information, and deleting a hosted connection
Virtual gateways	APIs for querying virtual gateway details, updating a virtual gateway, deleting a virtual gateway, querying the virtual gateway list, and creating a virtual gateway
Virtual interfaces	APIs for querying virtual interface details, updating a virtual interface, deleting a virtual interface, querying the virtual interface list, and creating a virtual interface
Tags	APIs for querying project tags, querying resource tags, adding a resource tag, batch adding or deleting resource tags, deleting a resource tag, and querying resources by tag
Quotas	API for querying resource quotas
LAGs	APIs for querying LAG details, updating a LAG, deleting a LAG, querying the LAG list, and creating a LAG

2 Calling APIs

2.1 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 2-1 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**.
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**.
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of *Parameter name*=*Parameter value*. For example, **?limit=10** indicates that a maximum of 10 data records will be displayed.

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 2-2 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.
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://{{endpoint}}/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 2-3 Common request header fields

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

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

NOTE

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

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

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

```
POST https://{{endpoint}}/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

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

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

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

NOTE

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

```
POST https://{{endpoint}}/v3/auth/tokens
Content-Type: application/json
```



```
{
    "auth": {
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",
                    "password": "$ADMIN_PASS",     //You are advised to store it in ciphertext in the configuration file or an environment variable and decrypt it when needed to ensure security.
                    "domain": {
                        "name": "domainname"
                    }
                }
            }
        },
        "scope": {
            "project": {
                "name": "xxxxxxxxxxxxxxxxx"
            }
        }
    }
}
```

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

2.2 Authentication

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

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

AK/SK Authentication

NOTE

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

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

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

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

NOTE

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

Token Authentication

NOTE

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

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

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

```
{
    "auth": {
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",   // IAM user name
                    "password": $ADMIN_PASS,  //IAM user password. You are advised to store it in ciphertext in the configuration file or an environment variable and decrypt it when needed to ensure security.
                    "domain": {
                        "name": "domainname"  // Name of the account to which the IAM user belongs
                    }
                }
            }
        },
        "scope": {
            "project": {
                "name": "xxxxxxxx"    // Project name
            }
        }
    }
}
```

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

```
POST https://{{endpoint}}/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

2.3 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 **Common 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

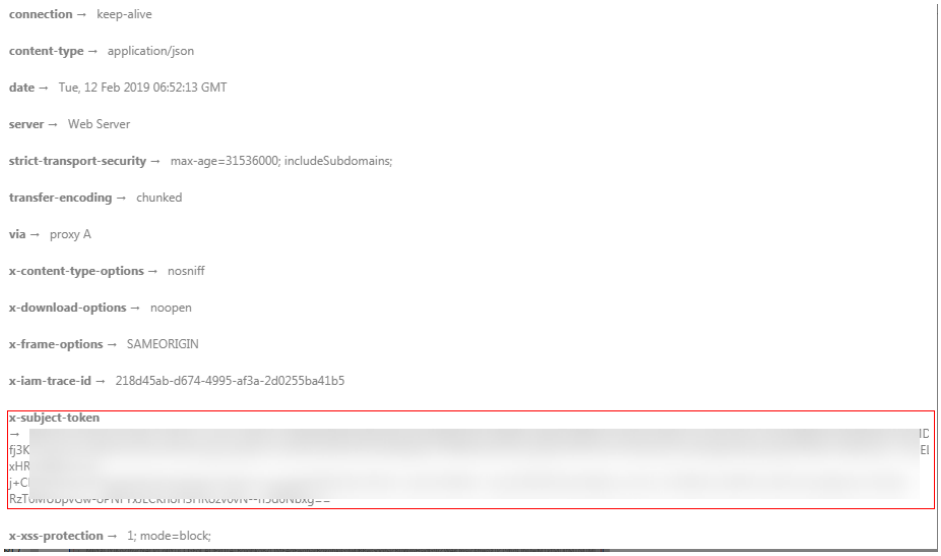
Similar to a request, a response also has a header, for example, **Content-Type**.

Figure 2-1 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.

NOTE

For security purposes, you are advised to set the token in ciphertext in configuration files or environment variables and decrypt it when using it.

Figure 2-1 Header fields of the response to the request for obtaining a user token



(Optional) Response Body

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

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

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

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

```
{
    "error_msg": "The request message format is invalid.",
    "error_code": "IMG.0001"
}
```

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

3 API Usage

Direct Connect has independent endpoints. When API calls are made to Direct Connect, the Direct Connect APIs are used. Therefore, you need pay special attention to the service endpoints used when you make calls to the Direct Connect APIs.

4 API

4.1 Connection

4.1.1 Querying Details About a Connection

Function

This API is used to query details about a connection.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}

Table 4-1 Path Parameters

Parameter	Mandatory	Type	Description
direct_connect_id	Yes	String	Specifies the connection ID. Minimum: **36** Maximum: **36**
project_id	Yes	String	Specifies the project ID.

Table 4-2 Query Parameters

Parameter	Mandatory	Type	Description
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**

Request Parameters

Table 4-3 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-4 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
direct_connect	**DirectConnect** object	Specifies parameters for creating a connection.

Table 4-5 DirectConnect

Parameter	Type	Description
id	String	Specifies the connection ID.
tenant_id	String	Specifies the ID of the project that the instance belongs to.

Parameter	Type	Description
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **100000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
device_id	String	Specifies the ID of the device connected to the connection. Minimum: **0** Maximum: **36**

Parameter	Type	Description
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
charge_mode	String	Specifies the billing mode, which can be **prepayment**, **bandwidth**, or **traffic**. Enumeration values: • **prepayment** • **bandwidth** • **traffic**
provider	String	Specifies the line carrier of a connection.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
status	String	Specifies the connection status. The options are as follows: **ACTIVE**: The connection is in the normal state. **DOWN**: The port for the connection is in the down state, which may cause line faults. **BUILD**: Operations related to the connection are being performed. **ERROR**: The connection configuration is incorrect. Contact customer service to rectify the fault. **PENDING_DELETE**: The connection is being deleted. **DELETED**: The connection has been deleted. **APPLY**: A request for a connection is submitted. **DENY**: A site survey is rejected because the customer fails to meet the requirements. **PENDING_PAY**: The order for the connection is to be paid. **PAID**: The order for the connection has been paid. **PENDING_SURVEY**: A site survey is required for the connection. Enumeration values: • **BUILD** • **PAID** • **APPLY** • **PENDING_SURVEY** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **DELETED** • **DENY** • **PENDING_PAY**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**
peer_port_type	String	Specifies the peer port type.

Parameter	Type	Description
peer_provider	String	Specifies the carrier connected to the connection.
order_id	String	Specifies the connection order ID, which is used to support duration-based billing and identify user orders.
product_id	String	Specifies the product ID corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
spec_code	String	Specifies the product specifications corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
period_type	Integer	Specifies whether a connection in a specified order is billed by year or month.
period_num	Integer	Specifies the required service duration of a yearly/monthly connection.
vgw_type	String	Specifies the gateway type required by a direct connection. Default: **default** Enumeration values: • **default**
lag_id	String	Specifies the ID of the LAG that the connection belongs to.
signed_agreement_status	String	Specifies the signing status of the Direct Connect agreement. Enumeration values: • **signed**
signed_agreement_time	String	Specifies the time when the line agreement is signed.
enterprise_project_id	String	Specifies the ID of the enterprise project that the connection belongs to. Minimum: **36** Maximum: **36**
locales	**LocalesBody** object	Specifies the region of the connection.
support_feature	Array of strings	Lists the features supported by the connection.
ies_id	String	Specifies the ID of an IES edge site.

Parameter	Type	Description
reason	String	Displays error information if the status of a line is **Error**.
email	String	Specifies the customer email information.
onestop_product_id	String	Specifies the product ID of a full-service connection. This parameter is used in line sales scenarios.
building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room. This parameter is used in line sales scenarios.
last_onestop_product_id	String	Specifies the product ID of a full-service connection before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
last_building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
modified_bandwidth	Integer	Specifies the new bandwidth after the line bandwidth is changed.
change_mode	Integer	Specifies the status of a renewal change.
onestopdc_status	String	Specifies the status of a full-service connection.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.
auto_renew	Integer	Specifies whether to automatically renew a yearly/monthly subscription.
ratio_95peak	Integer	Specifies the percentage of the minimum bandwidth for 95th percentile billing. Minimum: **0** Maximum: **100**

Table 4-6 LocalesBody

Parameter	Type	Description
en_us	String	Specifies the region name in English. Minimum: **0** Maximum: **255**
zh_cn	String	Specifies the region name in Chinese. Minimum: **0** Maximum: **255**

Example Requests

Querying details about a connection

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/direct-connects/6ecd9cf3-ca64-46c7-863f-f2eb1b9e838a
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.2 Updating a Connection

Function

This API is used to update a connection, including updating its name and description.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}

Table 4-7 Path Parameters

Parameter	Mandatory	Type	Description
direct_connect_id	Yes	String	Specifies the connection ID. Minimum: **36** Maximum: **36**
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-8 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-9 Request body parameters

Parameter	Mandatory	Type	Description
direct_connect	No	**UpdateDirectConnect** object	Specifies parameters required for updating a connection.

Table 4-10 UpdateDirectConnect

Parameter	Mandatory	Type	Description
name	No	String	Specifies the connection name. Minimum: **0** Maximum: **64**

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	No	Integer	Specifies the bandwidth size of the hosted connection in Mbit/s. Minimum: **2** Maximum: **100000**
peer_location	No	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
status	No	String	Specifies the resource status, which can be **PENDING_PAY** or **APPLY**. Enumeration values: • **PENDING_PAY** • **APPLY**
provider_status	No	String	Specifies the carrier status, which can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**

Response Parameters

Status code: 200

Table 4-11 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
direct_connect	**DirectConnect** object	Specifies parameters for creating a connection.

Table 4-12 DirectConnect

Parameter	Type	Description
id	String	Specifies the connection ID.
tenant_id	String	Specifies the ID of the project that the instance belongs to.
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **100000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
device_id	String	Specifies the ID of the device connected to the connection. Minimum: **0** Maximum: **36**

Parameter	Type	Description
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
charge_mode	String	Specifies the billing mode, which can be **prepayment**, **bandwidth**, or **traffic**. Enumeration values: • **prepayment** • **bandwidth** • **traffic**
provider	String	Specifies the line carrier of a connection.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
status	String	Specifies the connection status. The options are as follows: **ACTIVE**: The connection is in the normal state. **DOWN**: The port for the connection is in the down state, which may cause line faults. **BUILD**: Operations related to the connection are being performed. **ERROR**: The connection configuration is incorrect. Contact customer service to rectify the fault. **PENDING_DELETE**: The connection is being deleted. **DELETED**: The connection has been deleted. **APPLY**: A request for a connection is submitted. **DENY**: A site survey is rejected because the customer fails to meet the requirements. **PENDING_PAY**: The order for the connection is to be paid. **PAID**: The order for the connection has been paid. **PENDING_SURVEY**: A site survey is required for the connection. Enumeration values: • **BUILD** • **PAID** • **APPLY** • **PENDING_SURVEY** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **DELETED** • **DENY** • **PENDING_PAY**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**
peer_port_type	String	Specifies the peer port type.

Parameter	Type	Description
peer_provider	String	Specifies the carrier connected to the connection.
order_id	String	Specifies the connection order ID, which is used to support duration-based billing and identify user orders.
product_id	String	Specifies the product ID corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
spec_code	String	Specifies the product specifications corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
period_type	Integer	Specifies whether a connection in a specified order is billed by year or month.
period_num	Integer	Specifies the required service duration of a yearly/monthly connection.
vgw_type	String	Specifies the gateway type required by a direct connection. Default: **default** Enumeration values: • **default**
lag_id	String	Specifies the ID of the LAG that the connection belongs to.
signed_agreement_status	String	Specifies the signing status of the Direct Connect agreement. Enumeration values: • **signed**
signed_agreement_time	String	Specifies the time when the line agreement is signed.
enterprise_project_id	String	Specifies the ID of the enterprise project that the connection belongs to. Minimum: **36** Maximum: **36**
locales	**LocalesBody** object	Specifies the region of the connection.
support_feature	Array of strings	Lists the features supported by the connection.
ies_id	String	Specifies the ID of an IES edge site.

Parameter	Type	Description
reason	String	Displays error information if the status of a line is **Error**.
email	String	Specifies the customer email information.
onestop_product_id	String	Specifies the product ID of a full-service connection. This parameter is used in line sales scenarios.
building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room. This parameter is used in line sales scenarios.
last_onestop_product_id	String	Specifies the product ID of a full-service connection before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
last_building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
modified_bandwidth	Integer	Specifies the new bandwidth after the line bandwidth is changed.
change_mode	Integer	Specifies the status of a renewal change.
onestopdc_status	String	Specifies the status of a full-service connection.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.
auto_renew	Integer	Specifies whether to automatically renew a yearly/monthly subscription.
ratio_95peak	Integer	Specifies the percentage of the minimum bandwidth for 95th percentile billing. Minimum: **0** Maximum: **100**

Table 4-13 LocalesBody

Parameter	Type	Description
en_us	String	Specifies the region name in English. Minimum: **0** Maximum: **255**
zh_cn	String	Specifies the region name in Chinese. Minimum: **0** Maximum: **255**

Example Requests

Updating the name and description of a connection

```
PUT https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/direct-connects/6ecd9cf3-ca64-46c7-863f-f2eb1b9e838a

{
  "direct_connect" : {
    "description" : "",
    "name" : "direct connect1"
  }
}
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.3 Deleting a Connection

Function

This API is used to delete pay-per-use connections only. To delete yearly/monthly connections, you need to first unsubscribe them.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}

Table 4-14 Path Parameters

Parameter	Mandatory	Type	Description
direct_connect_id	Yes	String	Specifies the connection ID. Minimum: **36** Maximum: **36**
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-15 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a connection

```
DELETE https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/direct-connects/6ecd9cf3-ca64-46c7-863f-f2eb1b9e838a
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.1.4 Querying the Connection List

Function

This API is used to query all direct connections created by a tenant.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/direct-connects

Table 4-16 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-17 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
hosting_id	No	Array	Specifies operations connection ID by which hosted connections are filtered. Array Length: **0 - 5**
enterprise_project_id	No	Array	Filters resource instances by enterprise project ID. Array Length: **1 - 10**
id	No	Array	Specifies the resource ID by which instances are filtered. Array Length: **1 - 5**
name	No	Array	Specifies the resource name by which instances are filtered. You can specify multiple names. Array Length: **1 - 5**

Request Parameters

Table 4-18 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-19 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
direct_connects	Array of **DirectConnect** objects	Specifies parameters for creating a connection.
page_info	**PageInfo** object	Specifies the pagination query information.

Table 4-20 DirectConnect

Parameter	Type	Description
id	String	Specifies the connection ID.
tenant_id	String	Specifies the ID of the project that the instance belongs to.
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**

Parameter	Type	Description
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **100000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
device_id	String	Specifies the ID of the device connected to the connection. Minimum: **0** Maximum: **36**
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**

Parameter	Type	Description
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
charge_mode	String	Specifies the billing mode, which can be **prepayment**, **bandwidth**, or **traffic**. Enumeration values: • **prepayment** • **bandwidth** • **traffic**
provider	String	Specifies the line carrier of a connection.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
status	String	Specifies the connection status. The options are as follows: **ACTIVE**: The connection is in the normal state. **DOWN**: The port for the connection is in the down state, which may cause line faults. **BUILD**: Operations related to the connection are being performed. **ERROR**: The connection configuration is incorrect. Contact customer service to rectify the fault. **PENDING_DELETE**: The connection is being deleted. **DELETED**: The connection has been deleted. **APPLY**: A request for a connection is submitted. **DENY**: A site survey is rejected because the customer fails to meet the requirements. **PENDING_PAY**: The order for the connection is to be paid. **PAID**: The order for the connection has been paid. **PENDING_SURVEY**: A site survey is required for the connection. Enumeration values: • **BUILD** • **PAID** • **APPLY** • **PENDING_SURVEY** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **DELETED** • **DENY** • **PENDING_PAY**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**
peer_port_type	String	Specifies the peer port type.

Parameter	Type	Description
peer_provider	String	Specifies the carrier connected to the connection.
order_id	String	Specifies the connection order ID, which is used to support duration-based billing and identify user orders.
product_id	String	Specifies the product ID corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
spec_code	String	Specifies the product specifications corresponding to the connection's order, which is used to custom billing policies such as duration-based packages.
period_type	Integer	Specifies whether a connection in a specified order is billed by year or month.
period_num	Integer	Specifies the required service duration of a yearly/monthly connection.
vgw_type	String	Specifies the gateway type required by a direct connection. Default: **default** Enumeration values: • **default**
lag_id	String	Specifies the ID of the LAG that the connection belongs to.
signed_agreement_status	String	Specifies the signing status of the Direct Connect agreement. Enumeration values: • **signed**
signed_agreement_time	String	Specifies the time when the line agreement is signed.
enterprise_project_id	String	Specifies the ID of the enterprise project that the connection belongs to. Minimum: **36** Maximum: **36**
locales	**LocalesBody** object	Specifies the region of the connection.
support_feature	Array of strings	Lists the features supported by the connection.
ies_id	String	Specifies the ID of an IES edge site.

Parameter	Type	Description
reason	String	Displays error information if the status of a line is **Error**.
email	String	Specifies the customer email information.
onestop_product_id	String	Specifies the product ID of a full-service connection. This parameter is used in line sales scenarios.
building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room. This parameter is used in line sales scenarios.
last_onestop_product_id	String	Specifies the product ID of a full-service connection before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
last_building_line_product_id	String	Specifies the product ID of the line resource used in the equipment room before the change. This parameter is used in line sales scenarios and used to save the last record when the line bandwidth is changed.
modified_bandwidth	Integer	Specifies the new bandwidth after the line bandwidth is changed.
change_mode	Integer	Specifies the status of a renewal change.
onestopdc_status	String	Specifies the status of a full-service connection.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.
auto_renew	Integer	Specifies whether to automatically renew a yearly/monthly subscription.
ratio_95peak	Integer	Specifies the percentage of the minimum bandwidth for 95th percentile billing. Minimum: **0** Maximum: **100**

Table 4-21 LocalesBody

Parameter	Type	Description
en_us	String	Specifies the region name in English. Minimum: **0** Maximum: **255**
zh_cn	String	Specifies the region name in Chinese. Minimum: **0** Maximum: **255**

Table 4-22 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the marker of the previous page. The value is the resource UUID. Minimum: **0** Maximum: **36**
current_count	Integer	Specifies the number of resources in the current list. Minimum: **0** Maximum: **2000**
next_marker	String	Specifies the marker of the next page. The value is the resource UUID. If the value is empty, the resource is on the last page. Minimum: **0** Maximum: **36**

Example Requests

Querying the connection list

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/direct-connects
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.5 Querying the Hosted Connection List

Function

This API is used to query hosted connections created by partners.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/hosted-connects

Table 4-23 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-24 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**
hosting_id	No	Array	Specifies operations connection ID by which hosted connections are filtered. Array Length: **0 - 5**
id	No	Array	Specifies the resource ID by which instances are filtered. Array Length: **1 - 5**
name	No	Array	Specifies the resource name by which instances are filtered. You can specify multiple names. Array Length: **1 - 5**

Request Parameters

Table 4-25 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-26 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID of the current operation.
hosted_connects	Array of **HostedDirectConnect** objects	Specifies the parameters for creating a hosted connection.
page_info	**PageInfo** object	Specifies the pagination query information.

Table 4-27 HostedDirectConnect

Parameter	Type	Description
id	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the instance belongs to.

Parameter	Type	Description
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **400000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
provider	String	Specifies the provider of the leased line.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
status	String	Specifies the operating status of the hosted connection. The options are as follows: • **BUILD**: The hosted connection has been created. • **ACTIVE**: The associated virtual gateway is normal. • **DOWN**: The port used by the hosted connection is down, indicating that there may be line faults. • **ERROR**: The associated virtual gateway is abnormal. • **PENDING_DELETE**: The hosted connection is being deleted. • **PENDING_UPDATE**: The hosted connection is being updated. • **PENDING_CREATE**: The hosted connection is being created. Enumeration values: • **BUILD** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **PENDING_UPDATE** • **PENDING_CREATE**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**

Parameter	Type	Description
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**

Table 4-28 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the marker of the previous page. The value is the resource UUID. Minimum: **0** Maximum: **36**
current_count	Integer	Specifies the number of resources in the current list. Minimum: **0** Maximum: **2000**
next_marker	String	Specifies the marker of the next page. The value is the resource UUID. If the value is empty, the resource is on the last page. Minimum: **0** Maximum: **36**

Example Requests

Querying the list of hosted connections created by a partner

```
POST https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/hosted-connects
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.6 Creating a Hosted Connection

Function

This API is used by partners to create hosted connections for their users. The creator must have the partner qualification and have an operations connection.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/dcaas/hosted-connects

Table 4-29 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-30 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-31 Request body parameters

Parameter	Mandatory	Type	Description
hosted_connect	Yes	**CreateHostedDirectConnect** object	Specifies the parameters for creating a hosted connection.

Table 4-32 CreateHostedDirectConnect

Parameter	Mandatory	Type	Description
name	No	String	Specifies the hosted connection name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the hosted connection. Minimum: **0** Maximum: **128**
bandwidth	Yes	Integer	Specifies the bandwidth size of the hosted connection in Mbit/s. Minimum: **2** Maximum: **400000**

Parameter	Mandatory	Type	Description
hosting_id	Yes	String	Specifies the ID of the operations connection on which the hosted connection is created.
vlan	Yes	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**
resource_tenant_id	Yes	String	Specifies the project ID of the specified tenant for whom a hosted connection is to be created. Minimum: **0** Maximum: **32**
peer_location	No	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 201

Table 4-33 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
hosted_connect	**HostedDirectConnect** object	Specifies the parameters for creating a hosted connection.

Table 4-34 HostedDirectConnect

Parameter	Type	Description
id	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**

Parameter	Type	Description
tenant_id	String	Specifies the ID of the project that the instance belongs to.
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **400000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
provider	String	Specifies the provider of the leased line.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
status	String	Specifies the operating status of the hosted connection. The options are as follows: • **BUILD**: The hosted connection has been created. • **ACTIVE**: The associated virtual gateway is normal. • **DOWN**: The port used by the hosted connection is down, indicating that there may be line faults. • **ERROR**: The associated virtual gateway is abnormal. • **PENDING_DELETE**: The hosted connection is being deleted. • **PENDING_UPDATE**: The hosted connection is being updated. • **PENDING_CREATE**: The hosted connection is being created. Enumeration values: • **BUILD** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **PENDING_UPDATE** • **PENDING_CREATE**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**

Parameter	Type	Description
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**

Example Requests

Creating a hosting connection with the bandwidth set to 10 Mbit/s and VLAN to 441

```
POST https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/hosted-connects

{
  "hosted_connect" : {
    "name" : "client-dc-faf1",
    "description" : "Hosted Connect",
    "resource_tenant_id" : "0605768a3300d5762f82c01180692873",
    "hosting_id" : "2cfb53be-b05f-40d5-a2f8-3a59ac383836",
    "vlan" : 441,
    "bandwidth" : 10
  }
}
```

Example Responses

Status code: 201

Created

Status Codes

Status Code	Description
201	Created

Error Codes

See **Error Codes**.

4.1.7 Querying Details About a Hosted Connection

Function

This API is used to query a hosted connection of a partner.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}

Table 4-35 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
hosted_connect_id	Yes	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**

Table 4-36 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**
hosting_id	No	Array	Specifies operations connection ID by which hosted connections are filtered. Array Length: **0 - 5**

Request Parameters

Table 4-37 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-38 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
hosted_connect	**HostedDirectConnect** object	Specifies the parameters for creating a hosted connection.

Table 4-39 HostedDirectConnect

Parameter	Type	Description
id	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the instance belongs to.
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **400000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**

Parameter	Type	Description
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
provider	String	Specifies the provider of the leased line.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**
status	String	Specifies the operating status of the hosted connection. The options are as follows: • **BUILD**: The hosted connection has been created. • **ACTIVE**: The associated virtual gateway is normal. • **DOWN**: The port used by the hosted connection is down, indicating that there may be line faults. • **ERROR**: The associated virtual gateway is abnormal. • **PENDING_DELETE**: The hosted connection is being deleted. • **PENDING_UPDATE**: The hosted connection is being updated. • **PENDING_CREATE**: The hosted connection is being created. Enumeration values: • **BUILD** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **PENDING_UPDATE** • **PENDING_CREATE**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.

Parameter	Type	Description
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**

Example Requests

Querying details about a hosted connection created by a partner

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/hosted-connects/0278b472-ffa5-4eb3-8c0d-979d479f8ef6
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.8 Updating a Hosted Connection

Function

Updating a hosted connection by a partner

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}

Table 4-40 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
hosted_connect_id	Yes	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 4-41 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-42 Request body parameters

Parameter	Mandatory	Type	Description
hosted_connect	No	**UpdateHostedDirectConnect** object	Specifies parameters required for updating a hosted connection.

Table 4-43 UpdateHostedDirectConnect

Parameter	Mandatory	Type	Description
name	No	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	No	Integer	Specifies the bandwidth size of the hosted connection in Mbit/s. Minimum: **2** Maximum: **400000**
peer_location	No	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 200

Table 4-44 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.

Parameter	Type	Description
hosted_connect	**HostedDirectConnect** object	Specifies the parameters for creating a hosted connection.

Table 4-45 HostedDirectConnect

Parameter	Type	Description
id	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the instance belongs to.
name	String	Specifies the connection name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the connection. Minimum: **0** Maximum: **128**
bandwidth	Integer	Specifies the connection bandwidth in Mbit/s. Minimum: **2** Maximum: **400000**
location	String	Specifies information about the Direct Connect location. Minimum: **0** Maximum: **255**
peer_location	String	Specifies the location of the on-premises facility at the other end of the connection, specific to the street or data center name. Minimum: **0** Maximum: **255**
hosting_id	String	Specifies the ID of the operations connection on which the hosted connection is created.
provider	String	Specifies the provider of the leased line.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**

Parameter	Type	Description
vlan	Integer	Specifies the VLAN allocated to the hosted connection. Minimum: **0** Maximum: **3999**
status	String	Specifies the operating status of the hosted connection. The options are as follows: • **BUILD**: The hosted connection has been created. • **ACTIVE**: The associated virtual gateway is normal. • **DOWN**: The port used by the hosted connection is down, indicating that there may be line faults. • **ERROR**: The associated virtual gateway is abnormal. • **PENDING_DELETE**: The hosted connection is being deleted. • **PENDING_UPDATE**: The hosted connection is being updated. • **PENDING_CREATE**: The hosted connection is being created. Enumeration values: • **BUILD** • **ACTIVE** • **DOWN** • **ERROR** • **PENDING_DELETE** • **PENDING_UPDATE** • **PENDING_CREATE**
apply_time	String	Specifies when the connection was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies when the connection was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
provider_status	String	Specifies the status of the carrier's leased line. The status can be **ACTIVE** or **DOWN**. Enumeration values: • **ACTIVE** • **DOWN**

Parameter	Type	Description
port_type	String	Specifies the type of the port used by the connection. The value can be **1G**, **10G**, **40G**, or **100G**. Enumeration values: • **1G** • **10G** • **40G** • **100G**
type	String	Specifies the type of a connection. The value can be **standard** (a standard connection), **hosting** (an operations connection) or **hosted** (a hosted connection). Default: **standard** Enumeration values: • **standard** • **hosting** • **hosted** • **onestop_standard** • **onestop_hosted**

Example Requests

Updating the name and description of a hosted connection

```
PUT https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/hosted-connects/0278b472-ffa5-4eb3-8c0d-979d479f8ef6

{
  "hosted_connect" : {
    "name" : "client-dc-faf1",
    "description" : ""
  }
}
```

Example Responses

Status code: 200

OK

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.1.9 Deleting a Hosted Connection

Function

This API is used by partners to delete hosted connections.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}

Table 4-46 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
hosted_connect_id	Yes	String	Specifies the hosted connection ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 4-47 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a hosted connection

```
DELETE https://{dc_endpoint}/v3/08d5a9564a704afda6039ae2babbef3c/dcaas/hosted-connects/94c2b814-99dc-939a-e811-ae84c61ea3ff
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.2 Virtual Gateway

4.2.1 Querying Details About a Virtual Gateway

Function

This API is used to query details about a specified virtual gateway.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}

Table 4-48 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_gateway_id	Yes	String	Specifies the virtual gateway ID.

Table 4-49 Query Parameters

Parameter	Mandatory	Type	Description
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**

Request Parameters

Table 4-50 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-51 Response body parameters

Parameter	Type	Description
virtual_gateway	**VirtualGateway** object	Specifies parameters for creating a virtual gateway.
request_id	String	Specifies the request ID.

Table 4-52 VirtualGateway

Parameter	Type	Description
id	String	Specifies the virtual gateway ID.
vpc_id	String	Specifies the ID of the VPC connected by the virtual gateway.

Parameter	Type	Description
tenant_id	String	Specifies the ID of the project that the instance belongs to. Minimum: **32** Maximum: **32**
name	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
type	String	Specifies the virtual gateway type. The value can only be **default**. Default: **default**
local_ep_group	Array of strings	Specifies the IPv4 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC.
local_ep_group_ipv6	Array of strings	Specifies the IPv6 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC. This is a reserved field.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
status	String	Specifies the virtual gateway status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, or **PENDING_DELETE**.
bgp_asn	Integer	Specifies the local BGP ASN of the virtual gateway. Minimum: **1** Maximum: **4294967295**
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual gateway belongs to. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
redundant_device_id	String	Specifies the ID of the redundant device.

Parameter	Type	Description
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.

Example Requests

Querying a virtual gateway

```
GET https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-gateways/20082c1b-3c99-48d8-8e8c-116af5d7e9f0
```

Example Responses

Status code: 200

OK

- The details of the virtual gateway associated with a VPC are queried.

```
{
  "virtual_gateway" : {
    "id" : "20082c1b-3c99-48d8-8e8c-116af5d7e9f0",
    "name" : "vgw-c7b22",
    "description" : "",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "vpc_id" : "6592c28e-95d7-4b0a-9f61-004fdf03420c",
    "device_id" : "26.151.63.100",
    "redundant_device_id" : "26.152.128.20",
    "type" : "default",
    "status" : "ACTIVE",
    "admin_state_up" : true,
    "bgp_asn" : 64512,
    "local_ep_group" : [ "192.168.1.0/24" ],
    "enterprise_project_id" : "0",
    "public_border_group" : "center"
  },
  "request_id" : "765f7aaf8f2edd0e719de564ef72e2de"
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.2.2 Updating a Virtual Gateway

Function

This API is used to update a virtual gateway.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}

Table 4-53 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_gateway_id	Yes	String	Specifies the virtual gateway ID.

Request Parameters

Table 4-54 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-55 Request body parameters

Parameter	Mandatory	Type	Description
virtual_gateway	No	**UpdateVirtualGateway** object	Specifies the virtual gateway to be updated.

Table 4-56 UpdateVirtualGateway

Parameter	Mandatory	Type	Description
name	No	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
local_ep_group	No	Array of strings	Lists the IPv4 subnets that can be accessed over the virtual gateway. Generally, the list contains the subnet CIDR blocks of the associated VPC. Array Length: **1 - 200**
local_ep_group_ipv6	No	Array of strings	Lists the IPv6 subnets that can be accessed using the virtual gateway. Usually, the subnets are those in the VPC associated with the virtual gateway. Array Length: **1 - 50**

Response Parameters

Status code: 200

Table 4-57 Response body parameters

Parameter	Type	Description
virtual_gateway	**VirtualGateway** object	Specifies parameters for creating a virtual gateway.
request_id	String	Specifies the request ID.

Table 4-58 VirtualGateway

Parameter	Type	Description
id	String	Specifies the virtual gateway ID.

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC connected by the virtual gateway.
tenant_id	String	Specifies the ID of the project that the instance belongs to. Minimum: **32** Maximum: **32**
name	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
type	String	Specifies the virtual gateway type. The value can only be **default**. Default: **default**
local_ep_group	Array of strings	Specifies the IPv4 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC.
local_ep_group_ipv6	Array of strings	Specifies the IPv6 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC. This is a reserved field.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
status	String	Specifies the virtual gateway status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, or **PENDING_DELETE**.
bgp_asn	Integer	Specifies the local BGP ASN of the virtual gateway. Minimum: **1** Maximum: **4294967295**
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual gateway belongs to. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.

Parameter	Type	Description
redundant_device_id	String	Specifies the ID of the redundant device.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.

Example Requests

Updating the name and description of a virtual gateway and changing its IPv4 subnet to 192.168.3.0/24

```
PUT https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-gateways/20082c1b-3c99-48d8-8e8c-116af5d7e9f0

{
  "virtual_gateway" : {
    "name" : "update-vgw-c7b22",
    "description" : "",
    "local_ep_group" : [ "192.168.3.0/24" ]
  }
}
```

Example Responses

Status code: 200

OK

- The virtual gateway associated with a VPC is updated.

```
{
  "virtual_gateway" : {
    "id" : "20082c1b-3c99-48d8-8e8c-116af5d7e9f0",
    "name" : "update-vgw-c7b22",
    "description" : "",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "vpc_id" : "6592c28e-95d7-4b0a-9f61-004fdf03420c",
    "device_id" : "26.151.63.100",
    "redundant_device_id" : "26.152.128.20",
    "type" : "default",
    "status" : "ACTIVE",
    "admin_state_up" : true,
    "bgp_asn" : 64512,
    "local_ep_group" : [ "192.168.3.0/24" ],
    "enterprise_project_id" : "0",
    "public_border_group" : "center"
  },
  "request_id" : "765f7aaf8f2edd0e719de564ef72e2de"
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.2.3 Deleting a Virtual Gateway

Function

The API is used to delete a specified virtual gateway.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}

Table 4-59 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_gateway_id	Yes	String	Specifies the virtual gateway ID.

Request Parameters

Table 4-60 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a virtual gateway

```
DELETE https://{dc_endpoint}/v3/08d5a9564a704afda6039ae2babbef3c/dcaas/virtual-gateways/20082c1b-3c99-48d8-8e8c-116af5d7e9f0
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.2.4 Querying Virtual Gateways

Function

This API is used to query virtual gateways.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/virtual-gateways

Table 4-61 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-62 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**
id	No	Array	Specifies the resource ID by which instances are filtered. Array Length: **1 - 5**
enterprise_project_id	No	Array	Filters resource instances by enterprise project ID. Array Length: **1 - 10**
vpc_id	No	Array	Specifies the VPC ID by which virtual gateways are filtered.

Request Parameters

Table 4-63 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-64 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
virtual_gateways	Array of **VirtualGateway** objects	Specifies parameters for creating a virtual gateway.
page_info	**PageInfo** object	Specifies the pagination query information.

Table 4-65 VirtualGateway

Parameter	Type	Description
id	String	Specifies the virtual gateway ID.
vpc_id	String	Specifies the ID of the VPC connected by the virtual gateway.
tenant_id	String	Specifies the ID of the project that the instance belongs to. Minimum: **32** Maximum: **32**

Parameter	Type	Description
name	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
type	String	Specifies the virtual gateway type. The value can only be **default**. Default: **default**
local_ep_group	Array of strings	Specifies the IPv4 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC.
local_ep_group_ipv6	Array of strings	Specifies the IPv6 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC. This is a reserved field.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**
status	String	Specifies the virtual gateway status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, or **PENDING_DELETE**.
bgp_asn	Integer	Specifies the local BGP ASN of the virtual gateway. Minimum: **1** Maximum: **4294967295**
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual gateway belongs to. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
redundant_device_id	String	Specifies the ID of the redundant device.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.

Table 4-66 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the marker of the previous page. The value is the resource UUID. Minimum: **0** Maximum: **36**
current_count	Integer	Specifies the number of resources in the current list. Minimum: **0** Maximum: **2000**
next_marker	String	Specifies the marker of the next page. The value is the resource UUID. If the value is empty, the resource is on the last page. Minimum: **0** Maximum: **36**

Example Requests

Querying the virtual gateway list

```
GET https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-gateways
```

Example Responses

Status code: 200

OK

- The list of virtual gateways associated with VPCs is queried.

```
{
  "virtual_gateways" : [ {
    "id" : "20082c1b-3c99-48d8-8e8c-116af5d7e9f0",
    "name" : "vgw-c7b22",
    "description" : "",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "vpc_id" : "6592c28e-95d7-4b0a-9f61-004fdf03420c",
    "device_id" : "26.151.63.100",
    "redundant_device_id" : "26.152.128.20",
    "type" : "default",
    "status" : "ACTIVE",
    "admin_state_up" : true,
    "bgp_asn" : 64512,
    "local_ep_group" : [ "192.168.1.0/24" ],
    "enterprise_project_id" : "0",
    "public_border_group" : "center"
  } ],
  "request_id" : "765f7aaf8f2edd0e719de564ef72e2de"
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.2.5 Creating a Virtual Gateway

Function

This API is used to create a virtual gateway.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/dcaas/virtual-gateways

Table 4-67 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-68 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-69 Request body parameters

Parameter	Mandatory	Type	Description
virtual_gateway	No	**CreateVirtualGateway** object	Specifies parameters for creating a virtual gateway.

Table 4-70 CreateVirtualGateway

Parameter	Mandatory	Type	Description
vpc_id	Yes	String	Specifies the ID of the VPC that the virtual gateway is associated with.
name	No	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
local_ep_group	Yes	Array of strings	Lists the IPv4 subnets that can be accessed over the virtual gateway. Generally, the list contains the subnet CIDR blocks of the associated VPC.
local_ep_group_ipv6	No	Array of strings	Specifies the IPv6 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC. This is a reserved field.
bgp_asn	No	Integer	Specifies the local BGP autonomous system number (ASN) of the virtual gateway. Minimum: **1** Maximum: **4294967295**
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the virtual gateway belongs to. Minimum: **36** Maximum: **36**

Response Parameters

Status code: 201

Table 4-71 Response body parameters

Parameter	Type	Description
virtual_gateway	**VirtualGateway** object	Specifies parameters for creating a virtual gateway.
request_id	String	Specifies the request ID.

Table 4-72 VirtualGateway

Parameter	Type	Description
id	String	Specifies the virtual gateway ID.
vpc_id	String	Specifies the ID of the VPC connected by the virtual gateway.
tenant_id	String	Specifies the ID of the project that the instance belongs to. Minimum: **32** Maximum: **32**
name	String	Specifies the virtual gateway name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual gateway. Minimum: **0** Maximum: **128**
type	String	Specifies the virtual gateway type. The value can only be **default**. Default: **default**
local_ep_group	Array of strings	Specifies the IPv4 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC.
local_ep_group_ipv6	Array of strings	Specifies the IPv6 subnets connected by the virtual gateway, which is usually the CIDR blocks of a VPC. This is a reserved field.
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**. Default: **true**

Parameter	Type	Description
status	String	Specifies the virtual gateway status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, or **PENDING_DELETE**.
bgp_asn	Integer	Specifies the local BGP ASN of the virtual gateway. Minimum: **1** Maximum: **4294967295**
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual gateway belongs to. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
redundant_device_id	String	Specifies the ID of the redundant device.
public_border_group	String	Specifies the public border group of the AZ, indicating whether the site is a HomeZones site.

Example Requests

- Creating a virtual gateway that will be used to access a VPC, with the local BGP ASN set to 64512 and the IPv4 subnet to 192.168.1.0/24

```
POST https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-gateways

{
  "virtual_gateway" : {
    "name" : "vgw-c7b22",
    "description" : "",
    "vpc_id" : "6592c28e-95d7-4b0a-9f61-004fdf03420c",
    "bgp_asn" : 64512,
    "local_ep_group" : [ "192.168.1.0/24" ]
  }
}
```

Example Responses

Status code: 201

Created

- The virtual gateway for accessing the VPC is created

```
{
  "virtual_gateway" : {
    "id" : "20082c1b-3c99-48d8-8e8c-116af5d7e9f0",
    "name" : "vgw-c7b22",
    "description" : "",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "vpc_id" : "6592c28e-95d7-4b0a-9f61-004fdf03420c",
```



```
    "device_id" : "26.151.63.100",
    "redundant_device_id" : "26.152.128.20",
    "type" : "default",
    "status" : "ACTIVE",
    "admin_state_up" : true,
    "bgp_asn" : 64512,
    "local_ep_group" : [ "192.168.1.0/24" ],
    "enterprise_project_id" : "0",
    "public_border_group" : "center"
  }
}
```

Status Codes

Status Code	Description
201	Created

Error Codes

See **Error Codes**.

4.3 Virtual Interface

4.3.1 Querying Details About a Virtual Interface

Function

This API is used to querying details about a virtual interface.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}

Table 4-73 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_interface_id	Yes	String	Specifies the virtual interface ID. Minimum: **36** Maximum: **36**

Table 4-74 Query Parameters

Parameter	Mandatory	Type	Description
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**

Request Parameters

Table 4-75 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-76 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
virtual_interface	**VirtualInterface** object	Specifies parameters for creating a virtual interface.

Table 4-77 VirtualInterface

Parameter	Type	Description
id	String	Specifies the virtual interface ID. Maximum: **36**
name	String	Specifies the virtual interface name. Maximum: **64**

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**.
bandwidth	Integer	Specifies the virtual interface bandwidth. Minimum: **2** Maximum: **2147483647**
create_time	String	Specifies the time when the virtual interface was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used. Maximum: **255**
description	String	Provides supplementary information about the virtual interface. Maximum: **128**
direct_connect_id	String	Specifies the connection ID. Maximum: **36**
service_type	String	Specifies the gateway type. The value is **VGW**.
status	String	Specifies the operating status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, **PENDING_DELETE**, **DELETED**, **AUTHORIZATION**, or **REJECTED**.
tenant_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
type	String	Specifies the type of the virtual interface. The value is **private**. Default: **private** Maximum: **255** Enumeration values: • **private** • **public**
vgw_id	String	Specifies the virtual gateway ID. Minimum: **36** Maximum: **36**
vlan	Integer	Specifies the VLAN for connecting to the user gateway. The value ranges from **0** to **3999**. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
route_limit	Integer	Specifies the remote subnet route configurations of the virtual interface. Minimum: **1** Maximum: **200** Default: **50**
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable Bidirectional Forwarding Detection (BFD). The value can be **true** or **false**.
lag_id	String	Specifies the ID of the LAG associated with the virtual interface. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual interface belongs to. Minimum: **36** Maximum: **36**
local_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
ies_id	String	Specifies the ID of an IES edge site.
reason	String	Displays error information if the status of a line is **Error**.
rate_limit	Boolean	Specifies whether rate limiting is enabled on a virtual interface.
address_family	String	Specifies the address family of the virtual interface, which can be **IPv4** or **IPv6**. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.

Parameter	Type	Description
local_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
lgw_id	String	Specifies the ID of the local gateway, which is used in IES scenarios.
gateway_id	String	Specifies the ID of the gateway associated with the virtual interface.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
bgp_route_limit	Integer	Specifies the BGP route configuration.
priority	String	Specifies the priority of a virtual interface. The value can be **normal** or **low**. If the priorities are the same, the virtual interfaces work in load balancing mode. If the priorities are different, the virtual interfaces work in active/standby pairs. Outbound traffic is preferentially forwarded to the normal virtual interface with a higher priority. This option is only supported by virtual interfaces that use BGP routing. Default: **normal** Enumeration values: • **normal** • **low**
vif_peers	Array of **VifPeer** objects	Provides information about virtual interface peers.
extend_attribute	**VifExtendAttribute** object	Provides extended parameter information.

Table 4-78 VifPeer

Parameter	Type	Description
id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the virtual interface peer belongs to. Minimum: **36** Maximum: **36**
name	String	Specifies the name of the virtual interface peer. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual interface peer. Minimum: **0** Maximum: **128**
address_family	String	Specifies the address family type of the virtual interface, which can be **IPv4** or **IPv6**.
local_gateway_ip	String	Specifies the address of the virtual interface peer used on the cloud.
remote_gateway_ip	String	Specifies the address of the virtual interface peer used in the on-premises data center.
route_mode	String	Specifies the routing mode, which can be **static** or **bgp**. Maximum: **255** Enumeration values: • **bgp** • **static**
bgp_asn	Integer	Specifies the ASN of the BGP peer. Minimum: **1** Maximum: **4294967295**
bgp_md5	String	Specifies the MD5 password of the BGP peer.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.

Parameter	Type	Description
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections.
device_id	String	Specifies the ID of the device that the virtual interface peer belongs to.
bgp_route_limit	Integer	Specifies the BGP route configuration.
bgp_status	String	Specifies the BGP protocol status of the virtual interface peer. If the virtual interface peer uses static routing, the status is **null**. Maximum: **10**
status	String	Specifies the status of the virtual interface peer.
vif_id	String	Specifies the ID of the virtual interface corresponding to the virtual interface peer. Minimum: **36** Maximum: **36**
receive_route_num	Integer	Specifies the number of received BGP routes if BGP routing is used. If static routing is used, this parameter is meaningless and the value is **-1**. Note: If this parameter cannot be obtained, contact customer service to migrate your ports.
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable BFD. The value can be **true** or **false**.

Table 4-79 VifExtendAttribute

Parameter	Type	Description
ha_type	String	Specifies the availability detection type of the virtual interface. Enumeration values: • **nqa** • **bfd**

Parameter	Type	Description
ha_mode	String	Specifies the availability detection mode. Enumeration values: • **auto_single** • **auto_multi** • **static_single** • **static_multi** • **enhance_nqa**
detect_multiplier	Integer	Specifies the number of detection retries. Default: **5**
min_rx_interval	Integer	Specifies the interval for receiving detection packets. Default: **1000**
min_tx_interval	Integer	Specifies the interval for sending detection packets. Default: **1000**
remote_disclaim	Integer	Specifies the remote identifier of the static BFD session.
local_disclaim	Integer	Specifies the local identifier of the static BFD session.

Example Requests

Querying a virtual interface

```
POST https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-interfaces/0d0fdf63-f2c4-491c-8866-d504796189be
```

Example Responses

Status code: 200

OK

```
{
  "virtual_interface" : {
    "id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "name" : "vif-0819",
    "description" : "",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "direct_connect_id" : "4673e339-8412-4ee1-b73e-2ba9cdfa54c1",
    "vgw_id" : "8a47064a-f34c-4f94-b7fe-cac456c9b37b",
    "type" : "private",
    "service_type" : "VGW",
    "vlan" : 332,
    "bandwidth" : 2,
    "status" : "ACTIVE",
    "create_time" : "2022-08-19T11:28:06.000Z",
    "admin_state_up" : true,
```



```
  "enable_bfd" : false,
  "route_limit" : 50,
  "enable_nqa" : false,
  "local_gateway_v4_ip" : "1.1.1.1/30",
  "remote_gateway_v4_ip" : "1.1.1.2/30",
  "ies_id" : null,
  "reason" : null,
  "rate_limit" : false,
  "address_family" : "ipv4",
  "local_gateway_v6_ip" : null,
  "remote_gateway_v6_ip" : null,
  "lgw_id" : null,
  "lag_id" : null,
  "gateway_id" : null,
  "remote_ep_group" : [ "1.1.2.0/30" ],
  "service_ep_group" : [ ],
  "bgp_route_limit" : 100,
  "priority" : "normal",
  "vif_peers" : [ {
    "id" : "c768eb52-12a8-4859-9b43-81194643040c",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "name" : "vif-0819",
    "description" : "",
    "address_family" : "ipv4",
    "local_gateway_ip" : "1.1.1.1/30",
    "remote_gateway_ip" : "1.1.1.2/30",
    "route_mode" : "static",
    "bgp_asn" : null,
    "bgp_md5" : null,
    "device_id" : "18.9.215.131",
    "bgp_route_limit" : 100,
    "bgp_status" : null,
    "status" : "ACTIVE",
    "vif_id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "receive_route_num" : -1,
    "remote_ep_group" : [ "1.1.2.0/30" ],
    "service_ep_group" : null,
    "enable_bfd" : false,
    "enable_nqa" : false
  } ],
  "enterprise_project_id" : "0"
 },
 "request_id" : "5633df7af874576d819a481c76673236"
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.3.2 Updating a Virtual Interface

Function

This API is used to update a virtual interface.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}

Table 4-80 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_interface_id	Yes	String	Specifies the virtual interface ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 4-81 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-82 Request body parameters

Parameter	Mandatory	Type	Description
virtual_interface	Yes	**UpdateVirtualInterface** object	Virtual interface objects to be updated

Table 4-83 UpdateVirtualInterface

Parameter	Mandatory	Type	Description
name	No	String	Specifies the virtual interface name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the virtual interface. Minimum: **0** Maximum: **128**
bandwidth	No	Integer	Specifies the virtual interface bandwidth configuration. Minimum: **2** Maximum: **2147483647**
remote_ep_group	No	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.
service_ep_group	No	Array of strings	Specifies the local endpoint group that is connected to the public network over a connection.
enable_bfd	No	Boolean	Specifies whether to enable BFD. The value can be **true** or **false**.
enable_nqa	No	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
status	No	String	Confirms the virtual interfaces created by other users. The value can be **ACCEPTED** or **REJECTED**. Enumeration values: • **ACCEPTED** • **REJECTED**

Response Parameters

Status code: 200

Table 4-84 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
virtual_interface	**VirtualInterface** object	Specifies parameters for creating a virtual interface.

Table 4-85 VirtualInterface

Parameter	Type	Description
id	String	Specifies the virtual interface ID. Maximum: **36**
name	String	Specifies the virtual interface name. Maximum: **64**
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**.
bandwidth	Integer	Specifies the virtual interface bandwidth. Minimum: **2** Maximum: **2147483647**
create_time	String	Specifies the time when the virtual interface was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used. Maximum: **255**
description	String	Provides supplementary information about the virtual interface. Maximum: **128**
direct_connect_id	String	Specifies the connection ID. Maximum: **36**
service_type	String	Specifies the gateway type. The value is **VGW**.
status	String	Specifies the operating status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, **PENDING_DELETE**, **DELETED**, **AUTHORIZATION**, or **REJECTED**.
tenant_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**

Parameter	Type	Description
type	String	Specifies the type of the virtual interface. The value is **private**. Default: **private** Maximum: **255** Enumeration values: • **private** • **public**
vgw_id	String	Specifies the virtual gateway ID. Minimum: **36** Maximum: **36**
vlan	Integer	Specifies the VLAN for connecting to the user gateway. The value ranges from **0** to **3999**. Minimum: **0** Maximum: **3999**
route_limit	Integer	Specifies the remote subnet route configurations of the virtual interface. Minimum: **1** Maximum: **200** Default: **50**
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable Bidirectional Forwarding Detection (BFD). The value can be **true** or **false**.
lag_id	String	Specifies the ID of the LAG associated with the virtual interface. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual interface belongs to. Minimum: **36** Maximum: **36**
local_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.

Parameter	Type	Description
remote_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
ies_id	String	Specifies the ID of an IES edge site.
reason	String	Displays error information if the status of a line is **Error**.
rate_limit	Boolean	Specifies whether rate limiting is enabled on a virtual interface.
address_family	String	Specifies the address family of the virtual interface, which can be **IPv4** or **IPv6**. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
local_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
lgw_id	String	Specifies the ID of the local gateway, which is used in IES scenarios.
gateway_id	String	Specifies the ID of the gateway associated with the virtual interface.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
bgp_route_limit	Integer	Specifies the BGP route configuration.

Parameter	Type	Description
priority	String	Specifies the priority of a virtual interface. The value can be **normal** or **low**. If the priorities are the same, the virtual interfaces work in load balancing mode. If the priorities are different, the virtual interfaces work in active/standby pairs. Outbound traffic is preferentially forwarded to the normal virtual interface with a higher priority. This option is only supported by virtual interfaces that use BGP routing. Default: **normal** Enumeration values: • **normal** • **low**
vif_peers	Array of **VifPeer** objects	Provides information about virtual interface peers.
extend_attribute	**VifExtendAttribute** object	Provides extended parameter information.

Table 4-86 VifPeer

Parameter	Type	Description
id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the virtual interface peer belongs to. Minimum: **36** Maximum: **36**
name	String	Specifies the name of the virtual interface peer. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual interface peer. Minimum: **0** Maximum: **128**
address_family	String	Specifies the address family type of the virtual interface, which can be **IPv4** or **IPv6**.

Parameter	Type	Description
local_gateway_ip	String	Specifies the address of the virtual interface peer used on the cloud.
remote_gateway_ip	String	Specifies the address of the virtual interface peer used in the on-premises data center.
route_mode	String	Specifies the routing mode, which can be **static** or **bgp**. Maximum: **255** Enumeration values: • **bgp** • **static**
bgp_asn	Integer	Specifies the ASN of the BGP peer. Minimum: **1** Maximum: **4294967295**
bgp_md5	String	Specifies the MD5 password of the BGP peer.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections.
device_id	String	Specifies the ID of the device that the virtual interface peer belongs to.
bgp_route_limit	Integer	Specifies the BGP route configuration.
bgp_status	String	Specifies the BGP protocol status of the virtual interface peer. If the virtual interface peer uses static routing, the status is **null**. Maximum: **10**
status	String	Specifies the status of the virtual interface peer.
vif_id	String	Specifies the ID of the virtual interface corresponding to the virtual interface peer. Minimum: **36** Maximum: **36**

Parameter	Type	Description
receive_route_num	Integer	Specifies the number of received BGP routes if BGP routing is used. If static routing is used, this parameter is meaningless and the value is **-1**. Note: If this parameter cannot be obtained, contact customer service to migrate your ports.
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable BFD. The value can be **true** or **false**.

Table 4-87 VifExtendAttribute

Parameter	Type	Description
ha_type	String	Specifies the availability detection type of the virtual interface. Enumeration values: • **nqa** • **bfd**
ha_mode	String	Specifies the availability detection mode. Enumeration values: • **auto_single** • **auto_multi** • **static_single** • **static_multi** • **enhance_nqa**
detect_multiplier	Integer	Specifies the number of detection retries. Default: **5**
min_rx_interval	Integer	Specifies the interval for receiving detection packets. Default: **1000**
min_tx_interval	Integer	Specifies the interval for sending detection packets. Default: **1000**
remote_disclaim	Integer	Specifies the remote identifier of the static BFD session.
local_disclaim	Integer	Specifies the local identifier of the static BFD session.

Example Requests

Updating the name and description of a virtual interface and changing its bandwidth to 2 Mbit/s

```
PUT https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-interfaces/0d0fdf63-f2c4-491c-8866-d504796189be

{
  "virtual_interface" : {
    "name" : "vif-0819",
    "description" : "mytest",
    "bandwidth" : 2
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "virtual_interface" : {
    "id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "name" : "vif-0819",
    "description" : "mytest",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "direct_connect_id" : "4673e339-8412-4ee1-b73e-2ba9cdfa54c1",
    "vgw_id" : "8a47064a-f34c-4f94-b7fe-cac456c9b37b",
    "type" : "private",
    "service_type" : "VGW",
    "vlan" : 332,
    "bandwidth" : 2,
    "status" : "ACTIVE",
    "create_time" : "2022-08-19T11:28:06.000Z",
    "admin_state_up" : true,
    "enable_bfd" : false,
    "route_limit" : 50,
    "enable_nqa" : false,
    "local_gateway_v4_ip" : "1.1.1.1/30",
    "remote_gateway_v4_ip" : "1.1.1.2/30",
    "ies_id" : null,
    "reason" : null,
    "rate_limit" : false,
    "address_family" : "ipv4",
    "local_gateway_v6_ip" : null,
    "remote_gateway_v6_ip" : null,
    "lgw_id" : null,
    "lag_id" : null,
    "gateway_id" : null,
    "remote_ep_group" : [ "1.1.2.0/30" ],
    "service_ep_group" : [ ],
    "bgp_route_limit" : 100,
    "priority" : "normal",
    "vif_peers" : [ {
      "id" : "c768eb52-12a8-4859-9b43-81194643040c",
      "tenant_id" : "0605768a3300d5762f82c01180692873",
      "name" : "vif-0819",
      "description" : "",
      "address_family" : "ipv4",
      "local_gateway_ip" : "1.1.1.1/30",
      "remote_gateway_ip" : "1.1.1.2/30",
      "route_mode" : "static",
      "bgp_asn" : null,
      "bgp_md5" : null,
      "device_id" : "18.9.215.131",
      "bgp_route_limit" : 100,
```



```
    "bgp_status" : null,
    "status" : "ACTIVE",
    "vif_id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "receive_route_num" : -1,
    "remote_ep_group" : [ "1.1.2.0/30" ],
    "service_ep_group" : null,
    "enable_bfd" : false,
    "enable_nqa" : false
  } ],
  "enterprise_project_id" : "0"
 },
 "request_id" : "5633df7af874576d819a481c76673236"
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.3.3 Deleting a Virtual Interface

Function

This API is used to delete a virtual interface.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}

Table 4-88 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
virtual_interface_id	Yes	String	Specifies the virtual interface ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 4-89 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a virtual interface

```
DELETE https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-interfaces/0d0fdf63-f2c4-491c-8866-d504796189be
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.3.4 Querying the Virtual Interface List

Function

This API is used to query all virtual interfaces of a tenant.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/virtual-interfaces

Table 4-90 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-91 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	Filters resource instances by enterprise project ID. Array Length: **1 - 10**
id	No	Array	Specifies the resource ID by which instances are filtered. Array Length: **1 - 5**
status	No	Array	Specifies the status by which instances are filtered. Array Length: **1 - 5**
direct_connect_id	No	Array	Specifies the connection ID by which connections are filtered and queried. Array Length: **1 - 5**
vgw_id	No	Array	Specifies the virtual gateway ID by which virtual gateways are filtered and queried. Array Length: **1 - 5**

Request Parameters

Table 4-92 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-93 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
virtual_interfaces	Array of **VirtualInterface** objects	Specifies parameters for creating a virtual interface.
page_info	**PageInfo** object	Specifies the pagination query information.

Table 4-94 VirtualInterface

Parameter	Type	Description
id	String	Specifies the virtual interface ID. Maximum: **36**
name	String	Specifies the virtual interface name. Maximum: **64**
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**.
bandwidth	Integer	Specifies the virtual interface bandwidth. Minimum: **2** Maximum: **2147483647**
create_time	String	Specifies the time when the virtual interface was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used. Maximum: **255**
description	String	Provides supplementary information about the virtual interface. Maximum: **128**
direct_connect_id	String	Specifies the connection ID. Maximum: **36**
service_type	String	Specifies the gateway type. The value is **VGW**.
status	String	Specifies the operating status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, **PENDING_DELETE**, **DELETED**, **AUTHORIZATION**, or **REJECTED**.

Parameter	Type	Description
tenant_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
type	String	Specifies the type of the virtual interface. The value is **private**. Default: **private** Maximum: **255** Enumeration values: • **private** • **public**
vgw_id	String	Specifies the virtual gateway ID. Minimum: **36** Maximum: **36**
vlan	Integer	Specifies the VLAN for connecting to the user gateway. The value ranges from **0** to **3999**. Minimum: **0** Maximum: **3999**
route_limit	Integer	Specifies the remote subnet route configurations of the virtual interface. Minimum: **1** Maximum: **200** Default: **50**
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable Bidirectional Forwarding Detection (BFD). The value can be **true** or **false**.
lag_id	String	Specifies the ID of the LAG associated with the virtual interface. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual interface belongs to. Minimum: **36** Maximum: **36**

Parameter	Type	Description
local_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
ies_id	String	Specifies the ID of an IES edge site.
reason	String	Displays error information if the status of a line is **Error**.
rate_limit	Boolean	Specifies whether rate limiting is enabled on a virtual interface.
address_family	String	Specifies the address family of the virtual interface, which can be **IPv4** or **IPv6**. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
local_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
lgw_id	String	Specifies the ID of the local gateway, which is used in IES scenarios.
gateway_id	String	Specifies the ID of the gateway associated with the virtual interface.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
bgp_route_limit	Integer	Specifies the BGP route configuration.

Parameter	Type	Description
priority	String	Specifies the priority of a virtual interface. The value can be **normal** or **low**. If the priorities are the same, the virtual interfaces work in load balancing mode. If the priorities are different, the virtual interfaces work in active/standby pairs. Outbound traffic is preferentially forwarded to the normal virtual interface with a higher priority. This option is only supported by virtual interfaces that use BGP routing. Default: **normal** Enumeration values: • **normal** • **low**
vif_peers	Array of **VifPeer** objects	Provides information about virtual interface peers.
extend_attribute	**VifExtendAttribute** object	Provides extended parameter information.

Table 4-95 VifPeer

Parameter	Type	Description
id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the virtual interface peer belongs to. Minimum: **36** Maximum: **36**
name	String	Specifies the name of the virtual interface peer. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual interface peer. Minimum: **0** Maximum: **128**
address_family	String	Specifies the address family type of the virtual interface, which can be **IPv4** or **IPv6**.

Parameter	Type	Description
local_gateway_ip	String	Specifies the address of the virtual interface peer used on the cloud.
remote_gateway_ip	String	Specifies the address of the virtual interface peer used in the on-premises data center.
route_mode	String	Specifies the routing mode, which can be **static** or **bgp**. Maximum: **255** Enumeration values: • **bgp** • **static**
bgp_asn	Integer	Specifies the ASN of the BGP peer. Minimum: **1** Maximum: **4294967295**
bgp_md5	String	Specifies the MD5 password of the BGP peer.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections.
device_id	String	Specifies the ID of the device that the virtual interface peer belongs to.
bgp_route_limit	Integer	Specifies the BGP route configuration.
bgp_status	String	Specifies the BGP protocol status of the virtual interface peer. If the virtual interface peer uses static routing, the status is **null**. Maximum: **10**
status	String	Specifies the status of the virtual interface peer.
vif_id	String	Specifies the ID of the virtual interface corresponding to the virtual interface peer. Minimum: **36** Maximum: **36**

Parameter	Type	Description
receive_route_num	Integer	Specifies the number of received BGP routes if BGP routing is used. If static routing is used, this parameter is meaningless and the value is **-1**. Note: If this parameter cannot be obtained, contact customer service to migrate your ports.
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable BFD. The value can be **true** or **false**.

Table 4-96 VifExtendAttribute

Parameter	Type	Description
ha_type	String	Specifies the availability detection type of the virtual interface. Enumeration values: • **nqa** • **bfd**
ha_mode	String	Specifies the availability detection mode. Enumeration values: • **auto_single** • **auto_multi** • **static_single** • **static_multi** • **enhance_nqa**
detect_multiplier	Integer	Specifies the number of detection retries. Default: **5**
min_rx_interval	Integer	Specifies the interval for receiving detection packets. Default: **1000**
min_tx_interval	Integer	Specifies the interval for sending detection packets. Default: **1000**
remote_disclaim	Integer	Specifies the remote identifier of the static BFD session.
local_disclaim	Integer	Specifies the local identifier of the static BFD session.

Table 4-97 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the marker of the previous page. The value is the resource UUID. Minimum: **0** Maximum: **36**
current_count	Integer	Specifies the number of resources in the current list. Minimum: **0** Maximum: **2000**
next_marker	String	Specifies the marker of the next page. The value is the resource UUID. If the value is empty, the resource is on the last page. Minimum: **0** Maximum: **36**

Example Requests

Querying the virtual interface list

```
GET https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-interfaces
```

Example Responses

Status code: 200

OK

```
{
  "virtual_interfaces" : [ {
    "id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "name" : "vif-0819",
    "description" : "mytest",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "direct_connect_id" : "4673e339-8412-4ee1-b73e-2ba9cdfa54c1",
    "vgw_id" : "8a47064a-f34c-4f94-b7fe-cac456c9b37b",
    "type" : "private",
    "service_type" : "VGW",
    "vlan" : 332,
    "bandwidth" : 2,
    "status" : "ACTIVE",
    "create_time" : "2022-08-19T11:28:06.000Z",
    "admin_state_up" : true,
    "enable_bfd" : false,
    "route_limit" : 50,
    "enable_nqa" : false,
    "local_gateway_v4_ip" : "1.1.1.1/30",
    "remote_gateway_v4_ip" : "1.1.1.2/30",
    "ies_id" : null,
    "reason" : null,
    "rate_limit" : false,
    "address_family" : "ipv4",
    "local_gateway_v6_ip" : null,
    "remote_gateway_v6_ip" : null,
```



```
  "lgw_id" : null,
  "gateway_id" : null,
  "remote_ep_group" : [ "1.1.2.0/30" ],
  "service_ep_group" : [ ],
  "bgp_route_limit" : 100,
  "priority" : "normal",
  "vif_peers" : [ {
    "id" : "c768eb52-12a8-4859-9b43-81194643040c",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "name" : "vif-0819",
    "description" : "",
    "address_family" : "ipv4",
    "local_gateway_ip" : "1.1.1.1/30",
    "remote_gateway_ip" : "1.1.1.2/30",
    "route_mode" : "static",
    "bgp_asn" : null,
    "bgp_md5" : null,
    "device_id" : "18.9.215.131",
    "bgp_route_limit" : 100,
    "bgp_status" : null,
    "status" : "ACTIVE",
    "vif_id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "receive_route_num" : -1,
    "remote_ep_group" : [ "1.1.2.0/30" ],
    "service_ep_group" : null,
    "enable_bfd" : false,
    "enable_nqa" : false
  } ],
  "enterprise_project_id" : "0"
 } ],
 "request_id" : "5633df7af874576d819a481c76673236"
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.3.5 Creating a Virtual Interface

Function

This API is used to create a virtual interface.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/dcaas/virtual-interfaces

Table 4-98 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-99 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-100 Request body parameters

Parameter	Mandatory	Type	Description
virtual_interface	Yes	**CreateVirtualInterface** object	Specifies parameters for creating a virtual interface.

Table 4-101 CreateVirtualInterface

Parameter	Mandatory	Type	Description
name	No	String	Specifies the virtual interface name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the virtual interface. Minimum: **0** Maximum: **128**

Parameter	Mandatory	Type	Description
direct_connect_id	No	String	Specifies the ID of the connection associated with the virtual interface. When creating a virtual interface, you need to specify **direct_connect_id** or **lag_id**. This parameter is mandatory when LAG is not supported at the site.
type	Yes	String	Specifies the type of the virtual interface. The value is **private**. Enumeration values: • **private** • **public**
vlan	Yes	Integer	Specifies the customer VLAN to be connected. If you select a hosted connection, the VLAN must be the same as that of the hosted connection. Minimum: **0** Maximum: **3999**
bandwidth	Yes	Integer	Specifies the virtual interface bandwidth. Minimum: **2** Maximum: **2147483647**
local_gateway_v4_ip	No	String	Specifies the IPv4 interface address of the gateway used on the cloud. This parameter is mandatory if **address_family** is set to an IPv4 address.
remote_gateway_v4_ip	No	String	Specifies the IPv4 interface address of the gateway on the on-premises network. This parameter is mandatory if **address_family** is set to an IPv4 address.
address_family	No	String	Specifies the address family type of the virtual interface, which can be **IPv4** or **IPv6**. Default: **ipv4**

Parameter	Mandatory	Type	Description
local_gateway_v6_ip	No	String	Specifies the IPv6 interface address of the gateway used on the cloud. This parameter is mandatory if **address_family** is set to an IPv6 address.
remote_gateway_v6_ip	No	String	Specifies the IPv6 interface address of the gateway on the on-premises network. This parameter is mandatory if **address_family** is set to an IPv6 address.
vgw_id	Yes	String	Specifies the ID of the virtual gateway connected by the virtual interface.
route_mode	Yes	String	Specifies the routing mode, which can be **static** or **bgp**. Default: **static** Enumeration values: • **static** • **bgp**
bgp_asn	No	Integer	Specifies the ASN of the BGP peer on the customer side. Minimum: **1** Maximum: **4294967295**
bgp_md5	No	String	Specifies the MD5 password of the BGP peer.
remote_ep_group	Yes	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.
service_ep_group	No	Array of strings	Specifies the subnets that access Internet services through a direct connection.
enable_bfd	No	Boolean	Specifies whether to enable Bidirectional Forwarding Detection (BFD). The value can be **true** or **false**. Default: **false**

Parameter	Mandatory	Type	Description
enable_nqa	No	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**. Default: **false**
lag_id	No	String	Specifies the ID of the LAG associated with the virtual interface. Minimum: **36** Maximum: **36**
resource_tenant_id	No	String	Specifies the project ID of another tenant, which is used to create virtual interfaces across tenants.
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the resource belongs to. Minimum: **36** Maximum: **36**

Response Parameters

Status code: 201

Table 4-102 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
virtual_interface	**VirtualInterface** object	Specifies parameters for creating a virtual interface.

Table 4-103 VirtualInterface

Parameter	Type	Description
id	String	Specifies the virtual interface ID. Maximum: **36**
name	String	Specifies the virtual interface name. Maximum: **64**
admin_state_up	Boolean	Specifies the administrative status, which can be **true** or **false**.

Parameter	Type	Description
bandwidth	Integer	Specifies the virtual interface bandwidth. Minimum: **2** Maximum: **2147483647**
create_time	String	Specifies the time when the virtual interface was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used. Maximum: **255**
description	String	Provides supplementary information about the virtual interface. Maximum: **128**
direct_connect_id	String	Specifies the connection ID. Maximum: **36**
service_type	String	Specifies the gateway type. The value is **VGW**.
status	String	Specifies the operating status, which can be **ACTIVE**, **DOWN**, **BUILD**, **ERROR**, **PENDING_CREATE**, **PENDING_UPDATE**, **PENDING_DELETE**, **DELETED**, **AUTHORIZATION**, or **REJECTED**.
tenant_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
type	String	Specifies the type of the virtual interface. The value is **private**. Default: **private** Maximum: **255** Enumeration values: • **private** • **public**
vgw_id	String	Specifies the virtual gateway ID. Minimum: **36** Maximum: **36**
vlan	Integer	Specifies the VLAN for connecting to the user gateway. The value ranges from **0** to **3999**. Minimum: **0** Maximum: **3999**

Parameter	Type	Description
route_limit	Integer	Specifies the remote subnet route configurations of the virtual interface. Minimum: **1** Maximum: **200** Default: **50**
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable Bidirectional Forwarding Detection (BFD). The value can be **true** or **false**.
lag_id	String	Specifies the ID of the LAG associated with the virtual interface. Minimum: **36** Maximum: **36**
device_id	String	Specifies the ID of the device that the virtual interface belongs to.
enterprise_project_id	String	Specifies the ID of the enterprise project that the virtual interface belongs to. Minimum: **36** Maximum: **36**
local_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v4_ip	String	Specifies the IPv4 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
ies_id	String	Specifies the ID of an IES edge site.
reason	String	Displays error information if the status of a line is **Error**.
rate_limit	Boolean	Specifies whether rate limiting is enabled on a virtual interface.
address_family	String	Specifies the address family of the virtual interface, which can be **IPv4** or **IPv6**. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.

Parameter	Type	Description
local_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on the cloud. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
remote_gateway_v6_ip	String	Specifies the IPv6 interface address of the gateway used on premises. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
lgw_id	String	Specifies the ID of the local gateway, which is used in IES scenarios.
gateway_id	String	Specifies the ID of the gateway associated with the virtual interface.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections. This parameter has been migrated to the **vifpeer** parameter list and will be discarded later.
bgp_route_limit	Integer	Specifies the BGP route configuration.
priority	String	Specifies the priority of a virtual interface. The value can be **normal** or **low**. If the priorities are the same, the virtual interfaces work in load balancing mode. If the priorities are different, the virtual interfaces work in active/standby pairs. Outbound traffic is preferentially forwarded to the normal virtual interface with a higher priority. This option is only supported by virtual interfaces that use BGP routing. Default: **normal** Enumeration values: • **normal** • **low**
vif_peers	Array of **VifPeer** objects	Provides information about virtual interface peers.
extend_attribute	**VifExtendAttribute** object	Provides extended parameter information.

Table 4-104 VifPeer

Parameter	Type	Description
id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
tenant_id	String	Specifies the ID of the project that the virtual interface peer belongs to. Minimum: **36** Maximum: **36**
name	String	Specifies the name of the virtual interface peer. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the virtual interface peer. Minimum: **0** Maximum: **128**
address_family	String	Specifies the address family type of the virtual interface, which can be **IPv4** or **IPv6**.
local_gateway_ip	String	Specifies the address of the virtual interface peer used on the cloud.
remote_gateway_ip	String	Specifies the address of the virtual interface peer used in the on-premises data center.
route_mode	String	Specifies the routing mode, which can be **static** or **bgp**. Maximum: **255** Enumeration values: • **bgp** • **static**
bgp_asn	Integer	Specifies the ASN of the BGP peer. Minimum: **1** Maximum: **4294967295**
bgp_md5	String	Specifies the MD5 password of the BGP peer.
remote_ep_group	Array of strings	Specifies the remote subnet list, which records the CIDR blocks used in the on-premises data center.

Parameter	Type	Description
service_ep_group	Array of strings	Specifies the list of public network addresses that can be accessed by the on-premises data center. This field is required in the APIs of public network connections.
device_id	String	Specifies the ID of the device that the virtual interface peer belongs to.
bgp_route_limit	Integer	Specifies the BGP route configuration.
bgp_status	String	Specifies the BGP protocol status of the virtual interface peer. If the virtual interface peer uses static routing, the status is **null**. Maximum: **10**
status	String	Specifies the status of the virtual interface peer.
vif_id	String	Specifies the ID of the virtual interface corresponding to the virtual interface peer. Minimum: **36** Maximum: **36**
receive_route_num	Integer	Specifies the number of received BGP routes if BGP routing is used. If static routing is used, this parameter is meaningless and the value is **-1**. Note: If this parameter cannot be obtained, contact customer service to migrate your ports.
enable_nqa	Boolean	Specifies whether to enable NQA. The value can be **true** or **false**.
enable_bfd	Boolean	Specifies whether to enable BFD. The value can be **true** or **false**.

Table 4-105 VifExtendAttribute

Parameter	Type	Description
ha_type	String	Specifies the availability detection type of the virtual interface. Enumeration values: • **nqa** • **bfd**

Parameter	Type	Description
ha_mode	String	Specifies the availability detection mode. Enumeration values: • **auto_single** • **auto_multi** • **static_single** • **static_multi** • **enhance_nqa**
detect_multiplier	Integer	Specifies the number of detection retries. Default: **5**
min_rx_interval	Integer	Specifies the interval for receiving detection packets. Default: **1000**
min_tx_interval	Integer	Specifies the interval for sending detection packets. Default: **1000**
remote_disclaim	Integer	Specifies the remote identifier of the static BFD session.
local_disclaim	Integer	Specifies the local identifier of the static BFD session.

Example Requests

Creating a private virtual interface, with the bandwidth set to 2 Mbit/s, VLAN to 332, local gateway to 1.1.1.1/30, and remote gateway to 1.1.1.2/30, and routing mode to static routing

```
POST https://{dc_endpoint}/v3/0605768a3300d5762f82c01180692873/dcaas/virtual-interfaces

{
  "virtual_interface" : {
    "name" : "vif-0819",
    "description" : "mytest",
    "direct_connect_id" : "4673e339-8412-4ee1-b73e-2ba9cdfa54c1",
    "vgw_id" : "8a47064a-f34c-4f94-b7fe-cac456c9b37b",
    "vlan" : 332,
    "bandwidth" : 2,
    "local_gateway_v4_ip" : "1.1.1.1/30",
    "remote_gateway_v4_ip" : "1.1.1.2/30",
    "type" : "private",
    "route_mode" : "static",
    "remote_ep_group" : [ "1.1.2.0/30" ]
  }
}
```

Example Responses

Status code: 201

Created


```
{
  "virtual_interface" : {
    "id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
    "name" : "vif-0819",
    "description" : "mytest",
    "tenant_id" : "0605768a3300d5762f82c01180692873",
    "direct_connect_id" : "4673e339-8412-4ee1-b73e-2ba9cdfa54c1",
    "vgw_id" : "8a47064a-f34c-4f94-b7fe-cac456c9b37b",
    "type" : "private",
    "service_type" : "VGW",
    "vlan" : 332,
    "bandwidth" : 2,
    "device_id" : "18.9.215.131",
    "status" : "ACTIVE",
    "create_time" : "2022-08-19T11:28:06.000Z",
    "admin_state_up" : true,
    "enable_bfd" : false,
    "route_limit" : 50,
    "enable_nqa" : false,
    "local_gateway_v4_ip" : "1.1.1.1/30",
    "remote_gateway_v4_ip" : "1.1.1.2/30",
    "ies_id" : null,
    "reason" : null,
    "rate_limit" : false,
    "local_gateway_v6_ip" : null,
    "remote_gateway_v6_ip" : null,
    "lgw_id" : null,
    "lag_id" : null,
    "priority" : "normal",
    "vif_peers" : [ {
      "id" : "c768eb52-12a8-4859-9b43-81194643040c",
      "tenant_id" : "0605768a3300d5762f82c01180692873",
      "name" : "vif-0819",
      "description" : "",
      "address_family" : "ipv4",
      "local_gateway_ip" : "1.1.1.1/30",
      "remote_gateway_ip" : "1.1.1.2/30",
      "route_mode" : "static",
      "bgp_asn" : null,
      "bgp_md5" : null,
      "device_id" : "18.9.215.131",
      "bgp_route_limit" : 100,
      "bgp_status" : null,
      "status" : "ACTIVE",
      "vif_id" : "0d0fdf63-f2c4-491c-8866-d504796189be",
      "receive_route_num" : -1,
      "remote_ep_group" : [ "1.1.2.0/30" ],
      "enable_bfd" : false,
      "enable_nqa" : false,
      "service_ep_group" : null
    } ],
    "enterprise_project_id" : "0"
  },
  "request_id" : "5633df7af874576d819a481c76673236"
}
```


Status Codes

Status Code	Description
201	Created

Error Codes

See **Error Codes**.

4.4 Tag management

4.4.1 Querying Tags by Resource Type

Function

This API is used to query the tags of a resource type in a specific project. TMS uses this API to list tags created by a tenant to facilitate tag creation and resource filtering on the console.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/{resource_type}/tags

Table 4-106 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**

Request Parameters

None

Response Parameters

Status code: 200

Table 4-107 Response body parameters

Parameter	Type	Description
tags	Array of **Tag** objects	Specifies the tags.
request_id	String	Specifies the request ID.

Table 4-108 Tag

Parameter	Type	Description

Example Requests

```
GET https://{dc_endpoint}/v3/ed28c294165741faaeccab26913122a1/dc-directconnect/tags
```

Example Responses

Status code: 200

OK

```
{
  "tags" : [ {
    "key" : "department",
    "value" : "finance"
  } ]
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.4.2 Querying Resource Tags

Function

This API is used to query resource tags.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/{resource_type}/{resource_id}/tags

Table 4-109 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**
resource_id	Yes	String	Specifies the resource ID.

Request Parameters

None

Response Parameters

Status code: 200

Table 4-110 Response body parameters

Parameter	Type	Description
tags	Array of **Tag** objects	Specifies the tag list.
sys_tags	Array of **Tag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.
request_id	String	Specifies the request ID.

Table 4-111 Tag

Parameter	Type	Description

Example Requests

Querying tags of a resource

```
https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/resource-instances/action
```

Example Responses

Status code: 200

OK

```
{
  "request_id" : "80ef5f21-b81a-4546-b23d-84272507d330",
  "tags" : [ {
    "key" : "key2",
    "value" : "value2"
  }, {
    "key" : "key1",
    "value" : "value1"
  }, {
    "key" : "key3",
    "value" : "value3"
  } ]
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.4.3 Adding a Resource Tag

Function

- A resource can have a maximum of 10 tags.
- This API is idempotent.
- If a to-be-created tag has the same key as an existing tag, the tag will be created and overwrite the existing one.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/{resource_type}/{resource_id}/tags

Table 4-112 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
resource_id	Yes	String	Specifies the resource ID.
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**

Request Parameters

Table 4-113 Request body parameters

Parameter	Mandatory	Type	Description
tag	Yes	**Tag** object	Specifies the resource tag.

Table 4-114 Tag

Parameter	Mandatory	Type	Description

Response Parameters

None

Example Requests

Adding tags to a resource

```
POST https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags

{
  "tag" : {
    "key" : "key1",
    "value" : "value1"
  }
}
```


Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.4.4 Adding or Deleting Tags in Batches

Function

This API is used to batch add tags to or delete tags from a specified resource. TMS needs to use this API to manage tags of resources in batches. A resource can have a maximum of 10 tags.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/{resource_type}/{resource_id}/tags/action

Table 4-115 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
resource_id	Yes	String	Specifies the resource ID.
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**

Request Parameters

Table 4-116 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the operation. The options are as follows: • **create** • **delete** Enumeration values: • **create** • **delete**
tags	No	Array of **Tag** objects	Specifies the tags.
sys_tags	No	Array of **Tag** objects	Specifies the system tags.

Table 4-117 Tag

Parameter	Mandatory	Type	Description

Response Parameters

None

Example Requests

- Batch adding tags to resources

```
POST https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/action

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

- Batch deleting resource tags

```
POST https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/action

{
  "action" : "delete",
```



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

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.4.5 Deleting a Resource Tag

Function

When a tag is deleted, the tag character set is not verified. Before calling this API, the API URL must be encoded. If the key to be deleted does not exist, 404 is displayed. The key cannot be left blank or an empty string.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/{resource_type}/{resource_id}/tags/{key}

Table 4-118 Path Parameters

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key.
project_id	Yes	String	Specifies the project ID.
resource_id	Yes	String	Specifies the resource ID.

Parameter	Mandatory	Type	Description
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**

Request Parameters

None

Response Parameters

None

Example Requests

Deleting tags from a resource

```
DELETE https://{dc-endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/instance/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/key1
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.4.6 Querying Resources by Tag

Function

This API is used to query resources such as virtual gateways and virtual interfaces by tag.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/{resource_type}/resource-instances/action

Table 4-119 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
resource_type	Yes	String	Specifies the Direct Connect resource type. • **dc-directconnect**: connection • **dc-vgw**: virtual gateway • **dc-vif**: virtual interface Enumeration values: • **dc-directconnect** • **dc-vgw** • **dc-vif**

Request Parameters

Table 4-120 Request body parameters

Parameter	Mandatory	Type	Description
offset	No	String	Specifies the index position. The query starts from the next data record indexed by this parameter. You do not need to specify this parameter when you query resources on the first page. When you query resources on subsequent pages, set this parameter to the value returned in the response body for the previous query. This parameter is not available when **action** is set to **count**. If **action** is set to **filter**, the value must be a number, and the default value is **0**. The value cannot be a negative number.
limit	No	String	Specifies the number of records to be queried. This parameter is not available when **action** is set to **count**. If **action** is set to **filter**, the default value is **1000**. The maximum value is **1000**, and the minimum value is **1**. The value cannot be a negative number.
action	Yes	String	Specifies the operation to perform, which can only be **filter** (filtering) or **count** (querying the total number). **filter** indicates pagination query. **count** indicates that the total number of query results meeting the search criteria will be returned. Returning other fields is not allowed. Enumeration values: • **filter** • **count**

Parameter	Mandatory	Type	Description
matches	No	Array of **Match** objects	Specifies the search criteria. **key** is the field to match, for example, **resource_name**. **value** indicates the value to be matched. This field is a fixed dictionary value.Determine whether fuzzy match is required based on different fields. For example, if **key** is **resource_name**, fuzzy search (case insensitive) is used by default. If **value** is an empty string, exact match is used. If **key** is **resource_id**, exact match is used. Currently, only **resource_name** is supported.
not_tags	No	Array of **Tags** objects	Specifies tags that are not included. Each tag contains a maximum of 10 keys, and each key contains a maximum of 10 values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Keys must be unique and values of a key must be unique. Resources not identified by different keys are in AND relationship, and values in one tag are in OR relationship. If no filtering condition is specified, full data is returned.
tags	No	Array of **Tags** objects	Specifies tags that are included. Each tag contains a maximum of 10 keys, and each key contains a maximum of 10 values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Keys must be unique and values of a key must be unique. Resources identified by different keys are in AND relationship, and values in one tag are in OR relationship. If no tag filtering criteria is specified, full data is returned.

Parameter	Mandatory	Type	Description
tags_any	No	Array of **Tags** objects	Specifies any tag that is included. Each tag contains a maximum of 10 keys, and each key contains a maximum of 10 values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Keys must be unique and values of a key must be unique. Resources identified by different keys are in OR relationship, and values in one tag are in OR relationship. If no filtering condition is specified, full data is returned.
not_tags_any	No	Array of **Tags** objects	Specifies any tag that is not included. Each tag contains a maximum of 10 keys, and each key contains a maximum of 10 values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Keys must be unique and values of a key must be unique. Resources not identified by different keys are in OR relationship, and values in one tag are in OR relationship. If no filtering condition is specified, full data is returned.

Parameter	Mandatory	Type	Description
sys_tags	No	Array of **Tags** objects	Only users with the **op_service** permission can use this field to filter resources. Only one tag structure is contained when this API is called by Tag Management Service (TMS). **key** is **_sys_enterprise_project_id**, and **value** is the enterprise project ID list. When TMS invokes this API, a key can have only one value. **0** indicates the default enterprise project. **sys_tags** and tenant tag filtering conditions (**without_any_tag**, **tags**, **tags_any**, **not_tags**, and **not_tags_any**) cannot be used at the same time.

Table 4-121 Match

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can be **dc-directconnect**, **dc-vgw**, or **dc-vif**.
value	Yes	String	Specifies the tag value. Each value can contain a maximum of 255 Unicode characters.

Table 4-122 Tags

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Each tag key can contain a maximum of 127 Unicode characters. **key** must be specified.
values	Yes	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters.

Response Parameters

Status code: 200

Table 4-123 Response body parameters

Parameter	Type	Description
resources	Array of **Resource** objects	Specifies the resource list.
total_count	Integer	Specifies the total number of records.
request_id	String	Specifies the request ID.

Table 4-124 Resource

Parameter	Type	Description
resource_detail	Object	Specifies the resource details.
resource_id	String	Specifies the resource ID.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.
tags	Array of **Tag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.
sys_tags	Array of **Tag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.

Table 4-125 Tag

Parameter	Type	Description

Example Requests

- Querying resources (**action** set to **filter**)

```
https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/resource-instances/action

{
  "offset" : "10",
  "limit" : "10",
  "action" : "filter",
  "matches" : [ {
    "key" : "resource_name",
    "value" : "resource1"
  } ],
  "not_tags" : [ {
```



```
    "key" : "key1",
    "values" : [ "*value1", "value2" ]
  } ],
  "tags" : [ {
    "key" : "key1",
    "values" : [ "*value1", "value2" ]
  } ],
  "tags_any" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  } ],
  "not_tags_any" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  } ]
}
```

- Querying the total number of resources (**action** set to **count**)

```
https://{endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/dc-vgw/resource_instances/action

{
  "action" : "count",
  "not_tags" : [ {
    "key" : "key1",
    "values" : [ "value1", "*value2" ]
  } ],
  "tags" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  }, {
    "key" : "key2",
    "values" : [ "value1", "value2" ]
  } ],
  "tags_any" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  } ],
  "not_tags_any" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  } ],
  "sys_tags" : [ {
    "key" : "_sys_enterprise_project_id",
    "values" : [ "5aa119a8-d25b-45a7-8d1b-88e127885635" ]
  } ],
  "matches" : [ {
    "key" : "resource_name",
    "value" : "resource1"
  } ]
}
```

Example Responses

Status code: 200

OK

```
{
  "resources" : [ ],
  "total_count" : 0,
  "request_id" : "9a4f4dfc4fb2fc101e65bba07d908535"
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.5 Quota Management

4.5.1 Querying Resource Quotas

Function

This API is used to query the usage of resources, for example, how many connections and virtual interfaces have been created.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/quotas

Table 4-126 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-127 Query Parameters

Parameter	Mandatory	Type	Description
type	No	Array	Specifies the resource quotas. • **physicalConnect**: quota and usage of the connection • **virtualInterface**: quota and usage of the virtual interface

Request Parameters

None

Response Parameters

Status code: 201

Table 4-128 Response body parameters

Parameter	Type	Description
quotas	**quotas** object	Provides used quota details.

Table 4-129 quotas

Parameter	Type	Description
resources	Array of **Info** objects	Lists the used quotas of resources.

Table 4-130 Info

Parameter	Type	Description
type	String	Specifies the quota type.
quota	Long	Specifies the available quota. The value **-1** indicates that there is no quota limit.
used	Long	Specifies the used quotas.
unit	String	Specifies the measurement unit of resource usage.

Example Requests

Querying quotas

```
GET https://{dc_endpoint}/v3/08d5a9564a704afda6039ae2babbef3c/dcaas/quotas
```

Example Responses

Status code: 201

Quotas are queried.

```
{
  "quotas" : {
    "resources" : [ {
      "type" : "direct_connnect",
      "quota" : 1,
```



```
    "used" : 0,
    "unit" : "count"
  } ]
 }
}
```

Status Codes

Status Code	Description
201	Quotas are queried.

Error Codes

See **Error Codes**.

4.6 LAGs

4.6.1 Querying Details About a LAG

Function

This API is used to query the details about a LAG.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}

Table 4-131 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
dc_lag_id	Yes	String	Specifies the LAG ID.

Table 4-132 Query Parameters

Parameter	Mandatory	Type	Description
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**

Request Parameters

Table 4-133 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-134 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
link_aggregation_group	**LinkAggregationGroup** object	LAG

Table 4-135 LinkAggregationGroup

Parameter	Type	Description
id	String	Specifies the LAG ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the LAG name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**

Parameter	Type	Description
work_mode	String	Specifies the negotiation mode of the LAG: static or LACP. Enumeration values: • **Manual** • **Static**
min_up_num	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**
device_id	String	Specifies the ID of the device on which the LAG is used.
status	String	Specifies the LAG status.
admin_state_up	Boolean	Specifies the administrative status of the LAG.
enterprise_project_id	String	Specifies the ID of the enterprise project that the LAG belongs to.
apply_time	String	Specifies the time when the LAG was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies the time when the LAG was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
delete_time	String	Specifies the time when the LAG was deleted.
public_border_group	String	Specifies the public border group corresponding to the AZ where the LAG is used.

Example Requests

Querying details about a LAG

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/link-aggregation-groups/a7c5ce8a-62a8-433e-94af-d1894effce59
```

Example Responses

Status code: 200

OK

```
{
  "request_id" : "9a4f4dfc4fb2fc101e65bba07d908535",
```



```
 "link_aggregation_group" : {
   "id" : "a7c5ce8a-62a8-433e-94af-d1894effce59",
   "name" : "Lag01-02",
   "description" : "to idc1",
   "tenant_id" : "ed28c294165741faaeccab26913122a1",
   "min_up_num" : 1,
   "enterprise_project_id" : 0,
   "work_mode" : "Static",
   "device_id" : "26.151.63.100",
   "status" : "DOWN",
   "admin_state_up" : null,
   "public_border_group" : null,
   "apply_time" : "2023-06-14T07:29:25.000Z",
   "create_time" : "2023-06-14T07:29:25.000Z"
 }
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.6.2 Updating a LAG

Function

This API is used to update a LAG, including the name and description.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}

Table 4-136 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
dc_lag_id	Yes	String	Specifies the LAG ID.

Request Parameters

Table 4-137 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-138 Request body parameters

Parameter	Mandatory	Type	Description
link_aggregation_group	No	**UpdateLinkAggregationGroup** object	Specifies the LAG.

Table 4-139 UpdateLinkAggregationGroup

Parameter	Mandatory	Type	Description
name	No	String	Specifies the LAG name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**
min_up_num	No	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**

Parameter	Mandatory	Type	Description
associate_dc	No	Array of strings	Lists the IDs of connections to be added to the LAG.
disassociate_dc	No	Array of strings	Lists the IDs of connections to be deleted from the LAG.

Response Parameters

Status code: 200

Table 4-140 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
link_aggregation_group	**LinkAggregationGroup** object	LAG

Table 4-141 LinkAggregationGroup

Parameter	Type	Description
id	String	Specifies the LAG ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the LAG name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**
work_mode	String	Specifies the negotiation mode of the LAG: static or LACP. Enumeration values: • **Manual** • **Static**

Parameter	Type	Description
min_up_num	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**
device_id	String	Specifies the ID of the device on which the LAG is used.
status	String	Specifies the LAG status.
admin_state_up	Boolean	Specifies the administrative status of the LAG.
enterprise_project_id	String	Specifies the ID of the enterprise project that the LAG belongs to.
apply_time	String	Specifies the time when the LAG was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies the time when the LAG was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
delete_time	String	Specifies the time when the LAG was deleted.
public_border_group	String	Specifies the public border group corresponding to the AZ where the LAG is used.

Example Requests

Updating the name and description of a LAG

```
PUT https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/link-aggregation-groups/
a7c5ce8a-62a8-433e-94af-d1894effce59

{
  "link_aggregation_group" : {
    "name" : "Lag01-02",
    "description" : "to idc1"
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "request_id" : "9a4f4dfc4fb2fc101e65bba07d908535",
  "link_aggregation_group" : {
```



```
    "id" : "a7c5ce8a-62a8-433e-94af-d1894effce59",
    "name" : "Lag02-02",
    "description" : "to bj1",
    "tenant_id" : "ed28c294165741faaeccab26913122a1",
    "min_up_num" : 1,
    "enterprise_project_id" : 0,
    "work_mode" : "Static",
    "device_id" : "26.151.63.100",
    "status" : "DOWN",
    "admin_state_up" : null,
    "public_border_group" : null,
    "apply_time" : "2023-06-14T07:29:25.000Z",
    "create_time" : "2023-06-14T07:29:25.000Z"
  }
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.6.3 Deleting a LAG

Function

This API is used to delete a LAG.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}

Table 4-142 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
dc_lag_id	Yes	String	Specifies the LAG ID.

Request Parameters

Table 4-143 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a LAG

```
DELETE https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/link-aggregation-groups/a7c5ce8a-62a8-433e-94af-d1894effce59
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See **Error Codes**.

4.6.4 Querying the LAG List

Function

This API is used to query the LAG list.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/dcaas/link-aggregation-groups

Table 4-144 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-145 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1 to 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the ID of the last resource record on the previous page. If this parameter is left blank, the first page is queried. This parameter must be used together with **limit**. Minimum: **0** Maximum: **36**
fields	No	Array	Specifies the list of fields to be displayed. Array Length: **1 - 5**
sort_dir	No	Array	Specifies the sorting order of returned results, which can be **asc** (ascending order) or **desc** (descending order). The default value is **asc**.
sort_key	No	String	Specifies the sorting field. Default: **id** Minimum: **0** Maximum: **36**

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	Filters resource instances by enterprise project ID. Array Length: **1 - 10**
id	No	Array	Specifies the resource ID by which instances are filtered. Array Length: **1 - 5**

Request Parameters

Table 4-146 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Response Parameters

Status code: 200

Table 4-147 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
link_aggregation_groups	Array of **LinkAggregationGroup** objects	LAG
page_info	**PageInfo** object	Specifies the pagination query information.

Table 4-148 LinkAggregationGroup

Parameter	Type	Description
id	String	Specifies the LAG ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the LAG name. Minimum: **0** Maximum: **64**
description	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**
work_mode	String	Specifies the negotiation mode of the LAG: static or LACP. Enumeration values: • **Manual** • **Static**
min_up_num	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**
device_id	String	Specifies the ID of the device on which the LAG is used.
status	String	Specifies the LAG status.
admin_state_up	Boolean	Specifies the administrative status of the LAG.
enterprise_project_id	String	Specifies the ID of the enterprise project that the LAG belongs to.
apply_time	String	Specifies the time when the LAG was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies the time when the LAG was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
delete_time	String	Specifies the time when the LAG was deleted.
public_border_group	String	Specifies the public border group corresponding to the AZ where the LAG is used.

Table 4-149 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the marker of the previous page. The value is the resource UUID. Minimum: **0** Maximum: **36**
current_count	Integer	Specifies the number of resources in the current list. Minimum: **0** Maximum: **2000**
next_marker	String	Specifies the marker of the next page. The value is the resource UUID. If the value is empty, the resource is on the last page. Minimum: **0** Maximum: **36**

Example Requests

Querying the LAG list

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/link-aggregation-groups
```

Example Responses

Status code: 200

OK

```
{
  "request_id" : "9a4f4dfc4fb2fc101e65bba07d908535",
  "link_aggregation_groups" : [ {
    "id" : "a7c5ce8a-62a8-433e-94af-d1894effce59",
    "name" : "Lag01-02",
    "description" : "to idc1",
    "tenant_id" : "ed28c294165741faaeccab26913122a1",
    "min_up_num" : 1,
    "enterprise_project_id" : 0,
    "work_mode" : "Static",
    "device_id" : "26.151.63.100",
    "status" : "DOWN",
    "admin_state_up" : null,
    "public_border_group" : null,
    "apply_time" : "2023-06-14T07:29:25.000Z",
    "create_time" : "2023-06-14T07:29:25.000Z"
  } ]
}
```


Status Codes

Status Code	Description
200	OK

Error Codes

See **Error Codes**.

4.6.5 Creating a LAG

Function

This API is used to create a LAG. Before creating a LAG, you need to request connections.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/dcaas/link-aggregation-groups

Table 4-150 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-151 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. To obtain the token, see section "Obtaining the User Token" in the *Identity and Access Management API Reference*. The token is the value of **X-Subject-Token** in the response header. Minimum: **0** Maximum: **10240**

Table 4-152 Request body parameters

Parameter	Mandatory	Type	Description
link_aggregation_group	No	**CreateLinkAggregationGroup** object	Specifies the LAG.

Table 4-153 CreateLinkAggregationGroup

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the project ID.
name	No	String	Specifies the LAG name. Minimum: **0** Maximum: **64**
description	No	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**
region_id	No	String	Specifies the ID of the region where the LAG is created.
work_mode	Yes	String	Specifies the negotiation mode of the LAG. If this parameter is set to **Manual**, you need to manually specify the load configuration. If this parameter is set to **Static**, the two ends negotiate with each other through LACP. Enumeration values: • **Manual** • **Static**
min_up_num	No	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the LAG.
direct_connect_ids	Yes	Array of strings	Lists the IDs of connections added to the LAG.
ies_id	No	String	Specifies the ID of the IES edge site where the LAG is used. If there is no IES edge site ID, the value is left blank.
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the LAG belongs to.
tags	No	Array of **Tag** objects	Lists the tags.

Table 4-154 Tag

Parameter	Mandatory	Type	Description

Response Parameters

Status code: 201

Table 4-155 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
link_aggregation_group	**LinkAggregationGroup** object	LAG

Table 4-156 LinkAggregationGroup

Parameter	Type	Description
id	String	Specifies the LAG ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the LAG name. Minimum: **0** Maximum: **64**

Parameter	Type	Description
description	String	Provides supplementary information about the LAG. Minimum: **0** Maximum: **128**
work_mode	String	Specifies the negotiation mode of the LAG: static or LACP. Enumeration values: • **Manual** • **Static**
min_up_num	Integer	Specifies the lower threshold of active links in a LAG. When the number of active links is smaller than the lower threshold, the LAG status changes to **Down**. Minimum: **1** Maximum: **16**
device_id	String	Specifies the ID of the device on which the LAG is used.
status	String	Specifies the LAG status.
admin_state_up	Boolean	Specifies the administrative status of the LAG.
enterprise_project_id	String	Specifies the ID of the enterprise project that the LAG belongs to.
apply_time	String	Specifies the time when the LAG was requested. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
create_time	String	Specifies the time when the LAG was created. The UTC time format **yyyy-MM-ddTHH:mm:ss.SSSZ** is used.
delete_time	String	Specifies the time when the LAG was deleted.
public_border_group	String	Specifies the public border group corresponding to the AZ where the LAG is used.

Example Requests

Creating a LAG with the lower threshold of active links set to 1 and the negotiation mode to Static

```
GET https://{dc_endpoint}/v3/6fbe9263116a4b68818cf1edce16bc4f/dcaas/link-aggregation-groups

{
```



```
 "link_aggregation_group" : {
   "name" : "Lag01-02",
   "description" : "to idc1",
   "min_up_num" : 1,
   "work_mode" : "Static",
   "direct_connect_ids" : [ "6ecd9cf3-ca64-46c7-863f-f2eb1b9e838a" ]
 }
}
```

Example Responses

Status code: 201

Created

```
{
 "request_id" : "9a4f4dfc4fb2fc101e65bba07d908535",
 "link_aggregation_group" : {
   "id" : "a7c5ce8a-62a8-433e-94af-d1894effce59",
   "name" : "Lag01-02",
   "description" : "to idc1",
   "tenant_id" : "ed28c294165741faaeccab26913122a1",
   "min_up_num" : 1,
   "enterprise_project_id" : 0,
   "work_mode" : "Static",
   "device_id" : "26.151.63.100",
   "status" : "DOWN",
   "admin_state_up" : null,
   "public_border_group" : null,
   "apply_time" : "2023-06-14T07:29:25.000Z",
   "create_time" : "2023-06-14T07:29:25.000Z"
 }
}
```

Status Codes

Status Code	Description
201	Created

Error Codes

See **Error Codes**.

5 Permissions Policies and Supported Actions

5.1 Introduction

This topic describes fine-grained permissions management for Direct Connect. If your cloud account does not need individual Identity and Access Management (IAM) users, you can skip over this chapter.

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

You can grant users permissions by using roles and policies. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

Policy-based authorization is useful if you want to allow or deny the access to an API.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user wants to query the connections using an API, the user must have been granted permissions that allow the **dcaas:directConnect:list** action.

Supported Actions

IAM provides system-defined policies that can be directly used. You can also create custom policies to work with system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: Statements in a policy that allow or deny certain operations.
- APIs: REST APIs that can be called by a user who has been granted specific permissions.
- Actions: Specific operations that are allowed or denied.
- IAM or enterprise projects: Type of projects for which an action will take effect. 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 projects and enterprise projects, see "What Are the Differences Between IAM and Enterprise Management?" in the *Identity and Access Management User Guide*.

  NOTE

  The check mark (√) and cross symbol (x) indicate that an action takes effect or does not take effect for the corresponding type of projects.

Direct Connect supports the following actions that can be defined in custom policies:

- **Connections**: contains actions supported by the APIs of Direct Connect connections, for example, creating a connection.
- **Virtual Gateways**: contains actions supported by the APIs of Direct Connect virtual gateway, such as creating a virtual gateway.
- **Virtual Interfaces**: contains actions supported by the APIs of Direct Connect virtual interfaces, for example, creating a virtual interface.
- **Tags**: contains actions supported by the APIs of Direct Connect tags, for example, adding a tag to a resource.
- **LAGs**: contains actions supported by the APIs of Direct Connect LAGs, for example, querying a LAG.

5.2 Connections

Table 5-1 Actions allowed for connections

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Creating a hosted connection	POST /v3/{project_id}/dcaas/hosted-connects	dcaas:directConnect:create	vpc:vpcs:get vpc:vpcs:list	√	×
Querying the connection list	GET /v3/{project_id}/dcaas/direct-connects	dcaas:directConnect:list	-	√	×

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Querying details of a connection	GET /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}	dcaas:directConnect:get	-	√	×
Querying the hosted connection list	GET /v3/{project_id}/dcaas/hosted-connects	dcaas:directConnect:list	-	√	×
Querying details of a hosted connection	GET /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}	dcaas:directConnect:get	-	√	×
Updating a Connection	PUT /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}	dcaas:directConnect:update	-	√	×
Updating a hosted connection	PUT /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}	dcaas:directConnect:update	-	√	×
Deleting a connection	DELETE /v3/{project_id}/dcaas/direct-connects/{direct_connect_id}	dcaas:directConnect:delete	-	√	×
Deleting a hosted connection	DELETE /v3/{project_id}/dcaas/hosted-connects/{hosted_connect_id}	dcaas:directConnect:delete	-	√	×

5.3 Virtual Gateways

Table 5-2 Actions allowed for virtual gateways

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Creating a virtual gateway	POST /v3/{project_id}/dcaas/virtual-gateways	dcaas:vgw:create	vpc:vpcs:get vpc:vpcs:list vpc:subnets:get	√	×
Querying the virtual gateway list	GET /v3/{project_id}/dcaas/virtual-gateways	dcaas:vgw:list	-	√	×
Querying a virtual gateway	GET /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}	dcaas:vgw:get	-	√	×
Updating a virtual gateway	PUT /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}	dcaas:vgw:update	-	√	×
Deleting a virtual gateway	DELETE /v3/{project_id}/dcaas/virtual-gateways/{virtual_gateway_id}	dcaas:vgw:delete	-	√	×

5.4 Virtual Interfaces

Table 5-3 Actions allowed for virtual interfaces

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Creating a virtual interface	POST /v3/{project_id}/dcaas/virtual-interfaces	dcaas:vif:create	vpc:vpcs:get vpc:vpcs:list vpc:subnets:get	√	×
Querying the virtual interface list	GET /v3/{project_id}/dcaas/virtual-interfaces	dcaas:vif:list	-	√	×
Querying a virtual interface	GET /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}	dcaas:vif:get	-	√	×
Updating a virtual interface	PUT /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}	dcaas:vif:update	-	√	×
Deleting a virtual interface	DELETE /v3/{project_id}/dcaas/virtual-interfaces/{virtual_interface_id}	dcaas:vif:delete	-	√	×

5.5 Tags

Table 5-4 Actions allowed for tags

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Adding a resource tag	POST /v3/{project_id}/{resource_type}/{resource_id}/tags	dcaas:resources:tag	-	√	×
Adding or deleting resource tags	POST /v3/{project_id}/{resource_type}/{resource_id}/tags/action	dcaas:resources:batchTagUntag	-	√	×
Querying resources by tag	POST /v3/{project_id}/{resource_type}/resource-instances/action	dcaas:resources:listByTag	-	√	×
Querying tags by resource type	GET /v3/{project_id}/{resource_type}/tags	dcaas:resources:listTag	-	√	×
Querying resource tags	GET /v3/{project_id}/{resource_type}/{resource_id}/tags	dcaas:resources:listResourceTag	-	√	×
Deleting a resource tag	DELETE /v3/{project_id}/{resource_type}/{resource_id}/tags/{key}	dcaas:resources:unTag	-	√	×

5.6 LAGs

Table 5-5 Actions allowed for LAGs

Permission	API	Action	Related Action	IAM Project	Enterprise Project
Creating a LAG	POST /v3/{project_id}/dcaas/link-aggregation-groups	dcaas:lag:create	vpc:vpcs:get vpc:vpcs:list	√	×
Querying the LAG list	GET /v3/{project_id}/dcaas/link-aggregation-groups	dcaas:lag:list	-	√	×
Querying details of a LAG	GET /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}	dcaas:lag:get	-	√	×
Updating a LAG	PUT /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}	dcaas:lag:update	-	√	×
Deleting a LAG	DELETE /v3/{project_id}/dcaas/link-aggregation-groups/{dc_lag_id}	dcaas:lag:delete	-	√	×

6 Public Parameters

6.1 Common Status Codes

Successful Response	Message	Description
200	OK	Normal response code for GET and PUT operations
201	Created	Normal response code for POST operations
204	No Content	Normal response code for DELETE operations

Error Response	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 requested page.
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 could not be received by the client.
407 Proxy Authentication Required	You must use the proxy server for authentication so that the request can be processed.

Error Response	Description
408 Request Timeout	The request timed out.
409 Conflict	The request could not 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 server receives an invalid response from an upstream server.
503 Service Unavailable	The request is not completed because the system is out of service temporarily.
504 Gateway Timeout	A gateway timed out.

6.2 Error Codes

Status Code	Error Code	Description	Solution
400	DC.0000	The request body is abnormal.	Correct the parameter settings and send the request again.
400	DC.0001	Request parameter error.	Correct the parameter settings and send the request again.
400	DC.0002	The resource does not exist.	Correct the parameter settings and send the request again.
400	DC.0003	System error.	Correct the parameter settings and send the request again.
400	DC.0004	Invalid IP address.	Correct the parameter settings and send the request again.
400	DC.0005	Failed to call the VPC API.	Correct the parameter settings and send the request again.

Status Code	Error Code	Description	Solution
400	DC.0006	Failed to call the MO API.	Correct the parameter settings and send the request again.
400	DC.0007	The VPC does not exist.	Correct the parameter settings and send the request again.
400	DC.0008	The BGP ASN is out of range.	Correct the parameter settings and send the request again.
400	DC.0009	Invalid policy.	Contact technical support.
400	DC.0010	The VPC_VNI does not exist.	Contact technical support.
400	DC.0011	The AGENT is abnormal.	Correct the parameter settings and send the request again.
400	DC.0012	Failed to call the CBC API.	Contact technical support.
400	DC.0013	You have no permission to operate the field.	Contact technical support.
400	DC.1000	Insufficient connection bandwidth.	Contact technical support.
400	DC.1005	The connection is abnormal.	Contact technical support.
400	DC.1006	The device and type cannot be modified when the connection is in use.	Contact technical support.
400	DC.1007	The connection is in use.	Contact technical support.
400	DC.1010	Connection bandwidth is decreased.	Contact technical support.
400	DC.1011	Connection bandwidth cannot be changed.	Contact technical support.
400	DC.1012	The connection does not exist.	Contact technical support.
400	DC.1014	A redundant connection is set for a non-standard connection.	Contact technical support.

Status Code	Error Code	Description	Solution
400	DC.1015	The connection or LAG does not exist.	Contact technical support.
400	DC.1019	The connection quota has been used up.	Contact technical support.
400	DC.1100	The local endpoint group ID of the virtual gateway is invalid.	Contact technical support.
400	DC.1101	The number of local subnets exceeds the limit.	Contact technical support.
400	DC.1102	The standby device is specified when the active device is not specified.	Contact technical support.
400	DC.1103	The active and standby devices are the same.	Contact technical support.
400	DC.1104	The device information cannot be updated for the virtual gateway.	Contact technical support.
400	DC.1105	The local CIDR block overlap with the remote CIDR block.	Contact technical support.
400	DC.1106	The virtual gateway is in use.	Contact technical support.
400	DC.1107	Virtual gateway VLANs are exhausted.	Contact technical support.
400	DC.1108	Virtual gateway VNIs are exhausted.	Contact technical support.
400	DC.1109	Virtual gateway VRFs are exhausted.	Contact technical support.
400	DC.1110	A virtual gateway has been associated with the VPC.	Contact technical support.
400	DC.1111	The virtual gateway does not exist.	Contact technical support.
400	DC.1112	The devices used by the virtual gateway are not in active/standby mode.	Contact technical support.
400	DC.1113	The virtual gateway is in the cutover state.	Contact technical support.

Status Code	Error Code	Description	Solution
400	DC.1114	**traffic_mode** cannot be updated for VLANs or virtual gateways with a single VTEP device.	Contact technical support.
400	DC.1115	The VNI of the virtual gateway does not exist.	Contact technical support.
400	DC.1116	Failed to update the route gateway.	Contact technical support.
400	DC.1117	The virtual gateway has been associated with two connections and cannot be associated with more connections.	Contact technical support.
400	DC.1118	The virtual gateway is being operated (locked).	Contact technical support.
400	DC.1119	Failed to create the route gateway device group.	Contact technical support.
400	DC.1120	The **main_az_list** configuration item is incorrect.	Contact technical support.
400	DC.1200	No LAG or connection is specified for the virtual interface.	Contact technical support.
400	DC.1201	The connection does not match the virtual gateway type.	Contact technical support.
400	DC.1202	Virtual interfaces of the **double ipsec** type cannot be created.	Contact technical support.
400	DC.1203	No ASN is specified for the BGP virtual interface.	Contact technical support.
400	DC.1205	The status of the resource associated with the virtual interface is abnormal.	Contact technical support.
400	DC.1207	The VLAN of the virtual interface is inconsistent with that of the hosted connection.	Contact technical support.
400	DC.1209	Virtual interface VLANs conflict.	Contact technical support.

Status Code	Error Code	Description	Solution
400	DC.1210	The virtual interface status cannot be changed.	Contact technical support.
400	DC.1211	The virtual interface does not exist.	Contact technical support.
400	DC.1212	The virtual gateway is in a different group from the connection.	Contact technical support.
400	DC.1213	The virtual interface does not match the tenant.	Contact technical support.
400	DC.1214	The virtual interface has been used.	Contact technical support.
400	DC.1215	The virtual interface type does not match.	Contact technical support.
400	DC.1216	The local gateway is invalid.	Contact technical support.
400	DC.1218	The local gateway does not match.	Contact technical support.
400	DC.1219	A virtual interface with VLAN 0 is created.	Contact technical support.
400	DC.1220	The **vif email** field on the public network is empty.	Contact technical support.
400	DC.1221	The selected virtual gateway device does not support access from Direct Connect locations.	Contact technical support.
400	DC.1222	Insufficient POP VNIs.	Contact technical support.
400	DC.1223	The local BGP ASN is the same as the remote BGP ASN.	Contact technical support.
400	DC.1224	The virtual interface of the connection terminated at a Direct Connect location does not support VLAN 0.	Contact technical support.
400	DC.1225	The number of virtual interfaces for which traffic statistics collection is enabled reaches the limit.	Contact technical support.

Status Code	Error Code	Description	Solution
400	DC.1226	Traffic statistics collection cannot be enabled on Layer 2 remote interfaces that have no sub-interfaces.	Contact technical support.
400	DC.1227	Traffic statistics cannot be updated because the virtual interface is abnormal.	Contact technical support.
400	DC.1400	The number of endpoint groups reaches the limit.	Contact technical support.
400	DC.1401	Duplicate CIDR blocks.	Contact technical support.
400	DC.1402	The endpoint group is in use.	Contact technical support.
400	DC.1403	The endpoint group does not exist.	Contact technical support.

A Appendixes

A.1 Obtaining a Project ID

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. The steps are as follows:

1. Obtain the token.

   For details, see **Token Authentication**.

2. Obtain a project ID.

   The API for obtaining the project ID is **GET https://iam.eu-west-0.myhuaweicloud.com/v3/projects**.

   Add **X-Auth-Token** to the request header and set its value to the token obtained in the preceding step.

   The following is an example response. The value of **id** is the project ID to be obtained.

```
{
    "links": {},
    "projects": [
        {
            "is_domain": ,
            "description": "",
            "links": {},
            "enabled": true,
            "id": "",    // Project ID
            "parent_id": "",
            "domain_id": "",
            "name": ""
        },
        ...
    ]
}
```


B Change History

Released On	Description
2023-11-30	This issue is the first official release.

