NAT Gateway

API Reference

Issue 01

Date 2020-01-02

HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

Trademarks and Permissions


and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.
All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Contents

1 Before You Start 1
1.1 Overview 1
1.2 API Calling 1
1.3 Endpoints 1
1.4 Concepts 1
2 API Overview 3
3 Calling APIs 6
3.1 Making an API Request 6
3.2 Authentication 10
3.3 Response 11
4 API v2.0 14
4.1 NAT Gateway Service 14
4.1.1 Creating a NAT Gateway 14
4.1.2 Querying NAT Gateways 17
4.1.3 Querying Details of a NAT Gateway 20
4.1.4 Updating a NAT Gateway 22
4.1.5 Deleting a NAT Gateway 26
4.2 SNAT Rules 26
4.2.1 Creating an SNAT Rule 27
4.2.2 Querying SNAT Rules 31
4.2.3 Querying Details of an SNAT Rule 34
4.2.4 Deleting an SNAT Rule 36
4.3 DNAT Rules 37
4.3.1 Creating a DNAT Rule 37
4.3.2 Querying DNAT Rules 41
4.3.3 Querying Details of a DNAT Rule 45
4.3.4 Deleting a DNAT Rule 47
5 Private Nat API 49
5.1 Private NAT Gateways 49
5.1.1 Querying Private NAT Gateways 49
5.1.2 Updating a Private NAT Gateway 56
5.1.3 Deleting a Private NAT Gateway 61

5.1.4 Creating a Private NAT Gateway 63
5.1.5 Querying Details About a Specified Private NAT Gateway 69
5.2 DNAT Rules 73
5.2.1 Querying DNAT Rules 73
5.2.2 Updating a DNAT Rule 80
5.2.3 Creating a DNAT Rule 86
5.2.4 Deleting a DNAT Rule 92
5.2.5 Querying Details About a Specified DNAT Rule 93
5.3 SNAT Rules 97
5.3.1 Querying SNAT Rules 97
5.3.2 Querying Details About a Specified SNAT Rule 103
5.3.3 Updating an SNAT Rule 107
5.3.4 Creating an SNAT Rule 111
5.3.5 Deleting an SNAT Rule 116
5.4 Transit IP Addresses 117
5.4.1 Querying Transit IP Addresses 117
5.4.2 Releasing a Transit IP Address 123
5.4.3 Assigning a Transit IP Address 124
5.4.4 Querying Details About a Specified Transit IP Address 129
5.5 Private NAT Gateway Tags 132
5.5.1 Querying Private NAT Gateways 133
5.5.2 Querying Tags of All Private NAT Gateways in a Project 140
5.5.3 Querying Tags of a Private NAT Gateway 142
5.5.4 Adding a Tag to a Private NAT Gateway 145
5.5.5 Batch Adding Tags to or Deleting Tags from a Private NAT Gateway 147
5.5.6 Deleting a Tag from a Private NAT Gateway 151
5.6 Transit IP Address Tags 153
5.6.1 Querying Transit IP Addresses 153
5.6.2 Querying Tags of All Transit IP Addresses in a Specified Project 160
5.6.3 Querying Tags of a Transit IP Address 163
5.6.4 Adding a Tag to a Transit IP Address 166
5.6.5 Batch Adding Tags to or Deleting Tags from a Transit IP Address 168
5.6.6 Deleting Tags from a Transit IP Address 172

6 Common Parameters 175

6.1 Status Codes 175
6.2 Error Code Description v2.0 176
6.3 Error Codes 190
6.4 Obtaining a Project ID 224
6.5 Resource Status Description 225

A Change History 226

1 Before You Start

1.1 Overview

Welcome to *NAT Gateway API Reference*. The NAT Gateway service provides the network address translation (NAT) function for servers, such as Elastic Cloud Servers (ECSs) and Bare Metal Servers (BMSs) in a Virtual Private Cloud (VPC). It also supports this function for servers that connect to a VPC through Direct Connect or Virtual Private Network (VPN) in local data centers. It allows these servers to access the Internet using elastic IP addresses (EIPs) or to provide services for the Internet.

This document describes how to use application programming interfaces (APIs) to perform operations on NAT gateways, such as creating or deleting NAT gateways, or adding SNAT rules. For details about all supported operations, see **API Overview**.

1.2 API Calling

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

1.3 Endpoints

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

1.4 Concepts

- Account

  An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For

security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.

- User

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

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

- Region

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

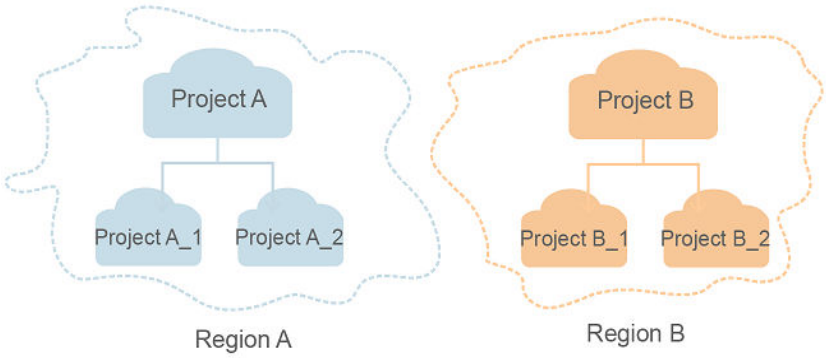
- AZ

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

- Project

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

Figure 1-1 Project isolation model



2 API Overview

NAT Gateway APIs allow you to use all NAT Gateway functions.

Private NAT Gateways

Table 2-1 Private NAT gateway APIs

Type	Description
Private NAT gateways	Create, query, update, and delete private NAT gateways, including creating a private NAT gateway, querying private NAT gateways, updating a private NAT gateway, deleting a private NAT gateway, and querying details of a private NAT gateway.
DNAT rules	Create, query, update, and delete DNAT rules, including creating a DNAT rule, querying DNAT rules, updating a DNAT rule, deleting a DNAT rule, and querying details of a DNAT rule.
SNAT rules	Create, query, update, and delete SNAT rules, including creating an SNAT rule, querying SNAT rules, updating an SNAT rule, deleting an SNAT rule, and querying details of an SNAT rule.
Transit IP addresses	Assign, query, and release transit IP addresses, including assigning a transit IP address, querying transit IP addresses, releasing a transit IP address, and querying details of a transit IP address.
Private NAT gateway tags	Tag private NAT gateways. Tags help you manage private NAT gateways. You can query, add, and delete tags of private NAT gateways.
Transit IP address tags	Tag transit IP addresses. Tags help you manage transit IP addresses. You can query, add, and delete tags of transit IP addresses.

Table 2-2 Descriptions of private NAT gateway APIs

Type	Description
Private NAT gateways	This API is used to query private NAT gateways.
	This API is used to update a private NAT gateway.
	This API is used to delete a private NAT gateway.
	This API is used to create a private NAT gateway.
	This API is used to query details of a private NAT gateway.
DNAT rules	This API is used to query DNAT rules.
	This API is used to update a DNAT rule.
	This API is used to create a DNAT rule.
	This API is used to delete a DNAT rule.
	This API is used to query details of a DNAT rule.
SNAT rules	This API is used to query SNAT rules.
	This API is used to query details of an SNAT rule.
	This API is used to update an SNAT rule.
	This API is used to create an SNAT rule.
	This API is used to delete an SNAT rule.
Transit IP addresses	This API is used to query transit IP addresses.
	This API is used to release a transit IP address.
	This API is used to assign a transit IP address.
	This API is used to query details of a transit IP address.
Private NAT gateway tags	This API is used to query private NAT gateways by tag.
	This API is used to query tags of all private NAT gateways owned by a tenant in a project.
	This API is used to query tags of a private NAT gateway.
	This API is used to add a tag to a private NAT gateway.
	This API is used to add or delete tags to or from a private NAT gateway.
	This API is used to delete a private NAT gateway tag.

Type	Description
Transit IP address tags	This API is used to query transit IP addresses by tag.
	This API is used to query tags of all transit IP addresses owned by a tenant in a project.
	This API is used to query tags of a transit IP address.
	This API is used to add a tag to a transit IP address.
	This API is used to add or delete tags to or from a transit IP address.
	This API is used to delete a tag from a transit IP address.

3 Calling APIs

3.1 Making an API Request

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

Request URI

A request URI is in the following format:

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

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

Table 3-1 URI parameter description

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**.
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 3-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.
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 3-3 Common request header fields

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

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

3.2 Authentication

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

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

Token Authentication

NOTE

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

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

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

```
{
    "auth": {
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",   // IAM user name
```



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

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

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

AK/SK Authentication

NOTE

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

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

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

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

NOTE

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

3.3 Response

Status Code

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

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

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

Response Header

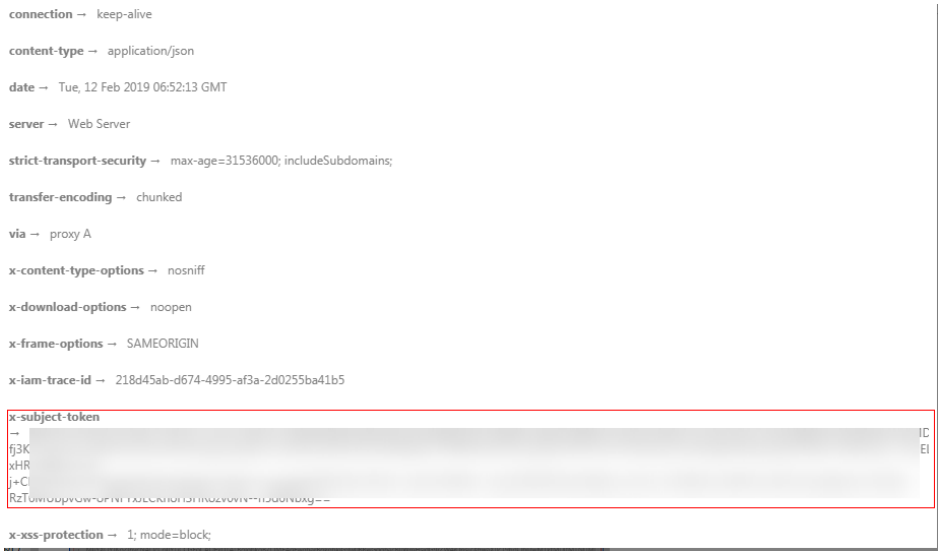
Similar to a request, a response also has a header, for example, **Content-Type**.

Figure 3-1 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 3-1 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.

4 API v2.0

4.1 NAT Gateway Service

4.1.1 Creating a NAT Gateway

Function

This API is used to create a NAT gateway.

URI

POST /v2.0/nat_gateways

Request

Table 4-1 describes the request parameter.

Table 4-1 Request parameter

Parameter	Mandatory	Type	Description
nat_gateway	Yes	Object	Specifies the NAT gateway object. For details, see Table 4-2.

Table 4-2 Description of the **nat_gateway** field

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the project ID.

Parameter	Mandatory	Type	Description
name	Yes	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String(255)	Provides supplementary information about the NAT gateway.
spec	Yes	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	Yes	String	Specifies the VPC ID.
internal_network_id	Yes	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.

Response

Table 4-3 lists response parameters.

Table 4-3 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see Table 4-4.

Table 4-4 Description of the **nat_gateway** field

Parameter	Type	Description
id	String	Specifies the NAT gateway ID.
tenant_id	String	Specifies the project ID.

Parameter	Type	Description
name	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String(255)	Provides supplementary information about the NAT gateway.
spec	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.
status	String	• Specifies the NAT gateway status. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is up or down. • The state can be: – **true**: The NAT gateway is up. – **false**: The NAT gateway is down.
created_at	String	Specifies when the NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request

```
POST https://{Endpoint}/v2.0/nat_gateways
{
    "nat_gateway": {
        "name": "nat_001",
        "description": "my nat gateway 01",
        "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
        "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
        "spec": "1"
```



```
    }
}
```

- Example response

```
{
    "nat_gateway": {
        "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
        "status": "PENDING_CREATE",
        "description": "my nat gateway 01",
        "admin_state_up": true,
        "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
        "created_at": "2017-11-18 07:34:32.203044",
        "spec": "1",
        "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
        "id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "name": "nat_001"
    }
}
```

Status Codes

See **Status Codes**.

4.1.2 Querying NAT Gateways

Function

This API is used to query NAT gateways. Unless otherwise specified, exact match is applied.

URI

GET /v2.0/nat_gateways

NOTE

You can type the question mark (?) and ampersand (&) at the end of the URI to define multiple search criteria. All optional parameters can be filtered. For details, see the example request.

Table 4-5 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the NAT gateway ID.
limit	No	Integer	Specifies the number of records on each page.
tenant_id	No	String	Specifies the project ID.
name	No	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).

Parameter	Mandatory	Type	Description
description	No	String(255)	Provides supplementary information about the NAT gateway.
spec	No	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	No	String	Specifies the router ID.
internal_network_id	No	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.
status	No	String	• Specifies the NAT gateway status. • For details about all its values, see **Table 6-1**.
admin_state_up	No	Boolean	• Specifies whether the NAT gateway is up or down. • The state can be: – **true**: The NAT gateway is up. – **false**: The NAT gateway is down.
created_at	No	String	Specifies when the NAT gateway is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Request

None

Response

Table 4-6 lists response parameters.

Table 4-6 Response parameter

Parameter	Type	Description
nat_gateways	List (NAT gateways)	Specifies the NAT gateway objects. For details, see **Table 4-7**.

Table 4-7 Description of the **nat_gateway** field

Parameter	Type	Description
id	String	Specifies the NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String(255)	Provides supplementary information about the NAT gateway.
spec	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.
status	String	• Specifies the NAT gateway status. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is up or down. • The state can be: – **true**: The NAT gateway is up. – **false**: The NAT gateway is down.

Parameter	Type	Description
created_at	String	Specifies when the NAT gateway is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/nat_gateways?limit=10
  ```
- Example response
  ```
  {
      "nat_gateways": [
          {
              "router_id": "b1d81744-5165-48b8-916e-e56626feb88f",
              "status": "ACTIVE",
              "description": "",
              "admin_state_up": true,
              "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
              "created_at": "2017-11-15 14:50:39.505112",
              "spec": "2",
              "internal_network_id": "5930796a-6026-4d8b-8790-6c6bfc9f87e8",
              "id": "a253be25-ae7c-4013-978b-3c0785eccd63",
              "name": "wj3"
          },
          {
              "router_id": "305dc52f-13dd-429b-a2d4-444a1039ba0b",
              "status": "ACTIVE",
              "description": "",
              "admin_state_up": true,
              "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
              "created_at": "2017-11-17 07:41:07.538062",
              "spec": "2",
              "internal_network_id": "fc09463b-4ef8-4c7a-93c8-92d9ca6daf9d",
              "id": "e824f1b4-4290-4ebc-8322-cfff370dbd1e",
              "name": "lyl001"
          }
      ]
  }
  ```

Status Codes

See **Status Codes**.

4.1.3 Querying Details of a NAT Gateway

Function

This API is used to query details of a NAT gateway.

URI

GET /v2.0/nat_gateways/{nat_gateway_id}

Table 4-8 Parameter description

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the NAT gateway ID.

Request

None

Response

Table 4-9 lists response parameter.

Table 4-9 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see Table 4-10.

Table 4-10 Description of the **nat_gateway** field

Parameter	Type	Description
id	String	Specifies the NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String(255)	Provides supplementary information about the NAT gateway.
spec	String	Specifies the NAT gateway specifications. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.

Parameter	Type	Description
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.
status	String	• Specifies the NAT gateway status. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is up or down. • The value can be: – **true**: The NAT gateway is up. – **false**: The NAT gateway is down.
created_at	String	Specifies when the NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/nat_gateways/a78fb3eb-1654-4710-8742-3fc49d5f04f8
  ```
- Example response
  ```
  {
     "nat_gateway": {
         "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
         "status": "ACTIVE",
         "description": "my nat gateway 01",
         "admin_state_up": true,
         "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
         "created_at": "2017-11-18 07:34:32.203044",
         "spec": "1",
         "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
         "id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
         "name": "nat_001"
     }
  }
  ```

Status Codes

See **Status Codes**.

4.1.4 Updating a NAT Gateway

Function

This API is used to update a NAT gateway.

NOTE

admin_state_up = True & status = "ACTIVE" can be updated. The name, description, and type of a NAT gateway can be updated.

URI

PUT /v2.0/nat_gateways/{nat_gateway_id}

Table 4-11 Parameter description

Parameter	Type	Mandatory	Description
nat_gateway_id	String	Yes	Specifies the NAT gateway ID.

Request

Table 4-12 describes the request parameter.

Table 4-12 Request parameters

Parameter	Mandatory	Type	Description
nat_gateway	Yes	Object	Specifies the NAT gateway object. For details, see Table 4-13. Mandatory field: None. Only the **name**, **description**, and **spec** fields can be updated. At least one attribute must be specified for the NAT gateway to be updated.

Table 4-13 Description of the **nat_gateway** field

Parameter	Mandatory	Type	Description
name	No	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String(255)	Provides supplementary information about the NAT gateway.

Parameter	Mandatory	Type	Description
spec	No	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.

Response

Table 4-14 lists response parameters.

Table 4-14 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see Table 4-15.

Table 4-15 Description of the **nat_gateway** field

Parameter	Type	Description
id	String	Specifies the NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String(64)	Specifies the NAT gateway name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String(255)	Provides supplementary information about the NAT gateway.

Parameter	Type	Description
spec	String	Specifies the NAT gateway type. The type can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of the DVR) of the NAT gateway.
status	String	• Specifies the NAT gateway status. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is up or down. • The state can be: – **true**: The NAT gateway is up. – **false**: The NAT gateway is down.
created_at	String	Specifies when the NAT gateway is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request

```
PUT https://{Endpoint}/v2.0/nat_gateways/a78fb3eb-1654-4710-8742-3fc49d5f04f8
 {
   "nat_gateway": {
      "name": "new_name",
      "description": "new description",
      "spec": "1"
   }
}
```

- Example response

```
{
   "nat_gateway": {
      "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
       "status": "ACTIVE",
       "description": "new description",
       "admin_state_up": true,
       "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
```



```
        "created_at": "2017-11-18 07:34:32.203044",
        "spec": "1",
        "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
        "id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "name": "new_name"
    }
}
```

Status Codes

See **Status Codes**.

4.1.5 Deleting a NAT Gateway

Function

This API is used to delete a NAT gateway.

URI

DELETE /v2.0/nat_gateways/{nat_gateway_id}

Table 4-16 Parameter description

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the NAT gateway ID.

Request

None

Response

None

Examples

- Example request
  ```
  DELETE https://{Endpoint}/v2.0/nat_gateways/a78fb3eb-1654-4710-8742-3fc49d5f04f8
  ```
- Example response
  ```
  None (STATUS CODE 204)
  ```

Status Code

See **Status Codes**.

4.2 SNAT Rules

4.2.1 Creating an SNAT Rule

Function

This API is used to create an SNAT rule.

NOTE

You can create an SNAT rule only when **status** of the NAT gateway is set to **ACTIVE** and **admin_state_up** of the NAT gateway administrator to **True**.

URI

POST /v2.0/snat_rules

Request

Table 4-17 describes the request parameter.

Table 4-17 Request parameter

Parameter	Mandatory	Type	Description
snat_rule	Yes	Object	Specifies the SNAT rule object. For details, see Table 4-18.

Table 4-18 Description of the **snat_rule** field

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the NAT gateway ID.
network_id	No	String	Specifies the network ID used by the SNAT rule. This parameter and **cidr** are alternative.
cidr	No	String	Specifies CIDR, which can be in the format of a network segment or a host IP address. This parameter and **network_id** are alternative. If **source_type** is set to **0**, **cidr** must be a subset of the VPC subnet. If **source_type** is set to **1**, **cidr** must be a CIDR block of your on-premises network connected to the VPC through Direct Connect or Cloud Connect.

Parameter	Mandatory	Type	Description
source_type	No	Integer	**0**: Either **network_id** or **cidr** can be specified in a VPC. **1**: Only **cidr** can be specified over a Direct Connect connection. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	Yes	String	Specifies the EIP ID. Use commas (,) to separate multiple IDs. The maximum length of the ID is 4,096 bytes. Constraints: The number of EIP IDs cannot exceed 20.

Response

Table 4-19 lists response parameters.

Table 4-19 Response parameter

Parameter	Type	Description
snat_rule	Object	Specifies the SNAT rule object. For details, see Table 4-20.

Table 4-20 Description of the **snat_rule** field

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
network_id	String	Specifies the network ID used by the SNAT rule.
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of Direct Connect connection.

Parameter	Type	Description
source_type	Integer	**0**: Either **network_id** or **cidr** can be specified in a VPC. **1**: Only **cidr** can be specified over a Direct Connect connection. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	String(4096)	• Specifies the EIP ID. Use commas (,) to separate multiple IDs. • The maximum length of the ID is 4,096 bytes.
floating_ip_address	String(1024)	• Specifies the EIP. Use commas (,) to separate multiple EIPs. • The maximum length is 1,024 bytes.
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies the unfrozen or frozen state. • Specifies whether the SNAT rule is enabled or disabled. • The state can be: – **true**: The SNAT rule is enabled. – **false**: The SNAT rule is disabled.
created_at	String	Specifies when the SNAT rule is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  a. Configure parameter **network_id** in a VPC.

```
POST https://{Endpoint}/v2.0/snat_rules
{
   "snat_rule": {
      "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
      "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
      "source_type":0,
      "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a"
   }
}
```

  b. Configure parameter **cidr** in a VPC.

```
POST https://{Endpoint}/v2.0/snat_rules
{
   "snat_rule": {
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "cidr": "192.168.1.10/32",
```



```
        "source_type":0,
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a"
    }
}
```

c. Configure parameter **cidr** over a Direct Connect connection.

```
POST https://{Endpoint}/v2.0/snat_rules
{
    "snat_rule": {
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "cidr": "172.30.0.0/24",
        "source_type":1,
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a"
    }
}
```

- Example response

a. Response to the request for specifying the **network_id** for a VPC

```
{
    "snat_rule": {
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
        "status": "PENDING_CREATE",
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "admin_state_up": true,
        "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
        "cidr": null,
        "source_type":0,
        "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
        "created_at": "2017-11-18 07:54:21.665430",
        "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
        "floating_ip_address": "5.21.11.226",
    }
}
```

b. Response to the request for specifying the CIDR block in a VPC

```
{
    "snat_rule": {
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
        "status": "PENDING_CREATE",
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "admin_state_up": true,
        "cidr": "192.168.1.10/32",
        "source_type":0,
        "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
        "created_at": "2017-11-18 07:54:21.665430",
        "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
        "floating_ip_address": "5.21.11.226",
    }
}
```

c. Response to the request for specifying the CIDR block in a VPC

```
{
    "snat_rule": {
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
        "status": "PENDING_CREATE",
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "admin_state_up": true,
        "cidr": "172.30.0.0/24",
        "source_type":1,
        "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
        "created_at": "2017-11-18 07:54:21.665430",
        "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
        "floating_ip_address": "5.21.11.226",
    }
}
```

Status Codes

See **Status Codes**.

4.2.2 Querying SNAT Rules

Function

This API is used to query SNAT rules.

URI

GET /v2.0/snat_rules

NOTE

You can type the question mark (?) and ampersand (&) at the end of the URI to define multiple search criteria. All optional parameters can be filtered. For details, see the example request.

Table 4-21 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the SNAT rule ID.
limit	No	Integer	Specifies the number of records on each page.
tenant_id	No	String	Specifies the project ID.
nat_gateway_id	No	String	Specifies the NAT gateway ID.
network_id	No	String	Specifies the network ID used by the SNAT rule.
cidr	No	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of Direct Connect connection.
source_type	No	Integer	**0**: Either **network_id** or **cidr** can be specified in a VPC. **1**: Only **cidr** can be specified over a Direct Connect connection. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	No	String(4096)	Specifies the EIP ID.
floating_ip_address	No	String(1024)	Specifies the EIP.
status	No	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 6-1**.

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	• Specifies whether the SNAT rule is enabled or disabled. • The state can be: – **true**: The SNAT rule is enabled. – **false**: The SNAT rule is disabled.
created_at	No	String	Specifies when the SNAT rule is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Request

None

Response

Table 4-22 lists response parameters.

Table 4-22 Response parameter

Parameter	Type	Description
snat_rules	List (SNAT rules)	Specifies the SNAT rule objects. For details, see Table 4-23.

Table 4-23 Description of the **snat_rule** field

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
network_id	String	Specifies the network ID used by the SNAT rule.
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of Direct Connect connection.

Parameter	Type	Description
source_type	Integer	**0**: Either **network_id** or **cidr** can be specified in a VPC. **1**: Only **cidr** can be specified over a Direct Connect connection. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	String(4096)	• Specifies the EIP ID. Use commas (,) to separate multiple IDs. • The maximum length of the ID is 4,096 bytes. • Constraints: The number of EIP IDs cannot exceed 20.
floating_ip_address	String(1024)	• Specifies the EIP. Use commas (,) to separate multiple EIPs. • The maximum length is 1,024 bytes.
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the SNAT rule is enabled or disabled. • The state can be: – **true**: The SNAT rule is enabled. – **false**: The SNAT rule is disabled.
created_at	String	Specifies when the SNAT rule is created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/snat_rules?limit=10
  ```
- Example response
  ```
  {
     "snat_rules": [
      {
           "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
           "status": "ACTIVE",
           "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
           "admin_state_up": true,
           "network_id": "9a469561-daac-4c94-88f5-39366e5ea193",
           "cidr": "null",
           "source_type":0,
           "tenant_id": "abc",
           "created_at": "2017-11-15 15:44:42.595173",
  ```



```
            "id": "79195d50-0271-41f1-bded-4c089b2502ff",
            "floating_ip_address": "5.21.11.242",
        },
        {
            "floating_ip_id": "6e496fba-abe9-4f5e-9406-2ad8c809ac8c",
            "status": "ACTIVE",
            "nat_gateway_id": "e824f1b4-4290-4ebc-8322-cfff370dbd1e",
            "admin_state_up": true,
            "network_id": "97e89905-f9c8-4ae3-9856-392b0b2fbe7f",
            "cidr": "null",
            "source_type":0,
            "tenant_id": "abc",
            "created_at": "2017-11-17 07:43:44.830845",
            "id": "4a1a10d7-0d9f-4846-8cda-24cffeffef5c",
            "floating_ip_address": "5.21.11.142",
        }
    ]
}
```


Status Codes

See **Status Codes**.

4.2.3 Querying Details of an SNAT Rule

Function

This API is used to query details of an SNAT rule.

URI

GET /v2.0/snat_rules/{snat_rule_id}

Table 4-24 Parameter description

Parameter	Mandatory	Type	Description
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

Request

None

Response

Table 4-25 lists response parameter.

Table 4-25 Response parameter

Parameter	Type	Description
snat_rule	Object	Specifies the SNAT rule object. For details, see **Table 4-26**.

Table 4-26 Description of the **snat_rule** field

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
network_id	String	Specifies the network ID used by the SNAT rule.
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of a Direct Connect connection.
source_type	Integer	**0**: Either **network_id** or **cidr** can be specified in a VPC. **1**: Only **cidr** can be specified over a Direct Connect connection. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	String(4096)	• Specifies the EIP ID. Use commas (,) to separate IDs. • The maximum length of the ID is 4,096 bytes. • Constraints: The number of EIP IDs cannot exceed 20.
floating_ip_address	String(1024)	• Specifies the EIP. Use commas (,) to separate EIPs. • The maximum length is 1,024 bytes.
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 6-1**.

Parameter	Type	Description
admin_state_up	Boolean	• Specifies whether the SNAT rule is enabled or disabled. • The value can be: – **true**: The SNAT rule is enabled. – **false**: The SNAT rule is disabled.
created_at	String	Specifies when the SNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/snat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338
  ```
- Example response
  ```
  {
     "snat_rule": {
        "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
        "status": "ACTIVE",
        "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        "admin_state_up": true,
        "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
        "cidr": "null",
        "source_type":0,
        "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
        "created_at": "2017-11-18 07:54:21.665430",
        "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
        "floating_ip_address": "5.21.11.226",
     }
  }
  ```

Status Codes

See **Status Codes**.

4.2.4 Deleting an SNAT Rule

Function

This API is used to delete an SNAT rule.

URI

DELETE /v2.0/snat_rules/{snat_rule_id}

Table 4-27 Parameter description

Parameter	Mandatory	Type	Description
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

Request

None

Response

None

Examples

- Example request
  DELETE https://{Endpoint}/v2.0/snat_rules/a78fb3eb-1654-4710-8742-3fc49d5f04f8
- Example response
  None (STATUS CODE 204)

Status Code

See **Status Codes**.

4.3 DNAT Rules

4.3.1 Creating a DNAT Rule

Function

This API is used to create a DNAT rule.

NOTE

You can create a DNAT rule only when **status** of the NAT gateway is set to **ACTIVE** and **admin_state_up** of the NAT gateway administrator to **True**. Specify either **port_id** or **private_ip** at a time. If you are going to create a DNAT rule that allows traffic to and from all ports of a server and an EIP, set **internal_service_port** to **0**, **external_service_port** to **0**, and **protocol** to **any**.

URI

POST /v2.0/dnat_rules

Request

Table 4-28 lists the request parameter.

Table 4-28 Request parameter

Parameter	Mandatory	Type	Description
dnat_rule	Yes	Object	Specifies the DNAT rule object. For details, see **Table 4-29**.

Table 4-29 Description of the **dnat_rule** field

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the NAT gateway ID.
port_id	No	String	Specifies the port ID of the cloud server (ECS or BMS). Either this parameter or **private_ip** must be specified.
private_ip	No	String	Specifies the private IP address, for example, the IP address of an on-premises network connected by a Direct Connect connection. This parameter and **port_id** are alternative.
internal_service_port	Yes	Integer	Specifies the port number used by the cloud server (ECS or BMS) to provide services for external systems. The value ranges from **0** to **65535**.
floating_ip_id	Yes	String	Specifies the EIP ID.
external_service_port	Yes	Integer	Specifies the port for providing services for external systems. The value ranges from **0** to **65535**.
protocol	Yes	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.

Response

Table 4-30 lists response parameter.

Table 4-30 Response parameter

Parameter	Type	Description
dnat_rule	Object	Specifies the DNAT rule object. For details, see **Table 4-31**.

Table 4-31 Description of the **dnat_rule** field

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
port_id	String	Specifies the port ID of the cloud server (ECS or BMS). This parameter is used in the VPC scenario, where this parameter or **private_ip** must be specified.
private_ip	String	Specifies the IP address of an on-premises network connected by a Direct Connect connection. This parameter is used in the Direct Connect scenario. This parameter and **port_id** are alternative.
internal_service_port	Integer	Specifies the port number used by the cloud server (ECS or BMS) to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 6-1**.

Parameter	Type	Description
admin_state_up	Boolean	• Specifies whether the NAT gateway is up or down. • The value can be: – **true**: The DNAT rule is enabled. – **false**: The DNAT rule is disabled.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example requests
  a. Creating a DNAT rule with specified **internal_service_port** and **external_service_port**

```
POST https://{Endpoint}/v2.0/dnat_rules
{
   "dnat_rule": {
      "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
      "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
      "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
      "internal_service_port": 993,
      "protocol": "tcp",
      "external_service_port": 242
   }
}
```

  b. Creating a DNAT rule with both **internal_service_port** and **external_service_port** set to **0**

```
POST https://{Endpoint}/v2.0/dnat_rules
{
   "dnat_rule": {
      "floating_ip_id": "Cf99c679-9f41-4dac-8513-9c9228e713e1",
      "nat_gateway_id": "Dda3a125-2406-456c-a11f-598e10578541",
      "private_ip": "192.168.1.100",
      "internal_service_port": 0,
      "protocol": "any",
      "external_service_port": 0
   }
}
```

- Example responses
  a. Response to the request for creating a DNAT rule with specified **internal_service_port** and **external_service_port**

```
{
   "dnat_rule": {
      "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
      "status": "ACTIVE",
      "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
      "admin_state_up": true,
      "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
      "internal_service_port": 993,
      "protocol": "tcp",
```



```
        "tenant_id": "abc",
        "created_at": "2017-11-15 15:44:42.595173",
        "id": "79195d50-0271-41f1-bded-4c089b2502ff",
        "floating_ip_address": "5.21.11.226",
        "external_service_port": 242,
        "private_ip": ""
    }
}
```


b. Response to the request for creating a DNAT rule with both **internal_service_port** and **external_service_port** set to **0**


```
{
    "dnat_rule": {
        "floating_ip_id": "cf99c679-9f41-4dac-8513-9c9228e713e1",
        "status": "ACTIVE",
        "nat_gateway_id": "dda3a125-2406-456c-a11f-598e10578541",
        "admin_state_up": true,
        "private_ip": "192.168.1.100",
        "internal_service_port": 0,
        "protocol": "any",
        "tenant_id": "abc",
        "created_at": "2017-11-15 15:44:42.595173",
        "id": "79195d50-0271-41f1-bded-4c089b2502ff",
        "floating_ip_address": "5.21.11.227",
        "external_service_port": 0
    }
}
```


Status Codes

See **Status Codes**.

4.3.2 Querying DNAT Rules

Function

This API is used to query DNAT rules.

URI

GET /v2.0/dnat_rules

NOTE

You can type a question mark (?) and an ampersand (&) at the end of the URI to define different search criteria. All optional parameters can be filtered. For details, see the example request.

Table 4-32 Parameter description

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
limit	Integer	Specifies the number of records returned on each page.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.

Parameter	Type	Description
port_id	String	Specifies the port ID of the cloud server (ECS or BMS).
private_ip	String	Specifies the private IP address, for example, the IP address of an on-premises network connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port number used by the cloud server (ECS or BMS) to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Resource Status Description**.
admin_state_up	Boolean	• Specifies whether the DNAT rule is enabled or disabled. • The value can be: – **true**: The DNAT rule is enabled. – **false**: The DNAT rule is disabled.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Request

None

Response

Table 4-33 lists response parameter.

Table 4-33 Response parameter

Parameter	Type	Description
dnat_rules	Array(Object)	Specifies the DNAT rule objects. For details, see **Table 4-34**.

Table 4-34 Description of the **dnat_rule** field

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
port_id	String	Specifies the port ID of the cloud server (ECS or BMS).
private_ip	String	Specifies the private IP address, for example, the IP address of an on-premises network connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port number used by the cloud server (ECS or BMS) to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.

Parameter	Type	Description
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the DNAT rule is enabled or disabled. • The value can be: – **true**: The DNAT rule is enabled. – **false**: The DNAT rule is disabled.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/dnat_rules
  ```
- Example response
  ```
  {
    "dnat_rules": [
      {
        "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
        "status": "ACTIVE",
        "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
        "admin_state_up": true,
        "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
        "internal_service_port": 993,
        "protocol": "tcp",
        "tenant_id": "abc",
        "created_at": "2017-11-15 15:44:42.595173",
        "id": "79195d50-0271-41f1-bded-4c089b2502ff",
        "floating_ip_address": "5.21.11.226",
        "external_service_port": 242,
        "private_ip": ""
      },
      {
        "floating_ip_id": "cf99c679-9f41-4dac-8513-9c9228e713e1",
        "status": "ACTIVE",
        "nat_gateway_id": "dda3a125-2406-456c-a11f-598e10578541",
        "admin_state_up": true,
        "port_id": "",
        "private_ip": "192.168.1.100",
        "internal_service_port": 0,
        "protocol": "any",
        "tenant_id": "abc",
        "created_at": "2017-11-16 15:44:42.595173",
  ```



```
            "id": "89195d50-0271-41f1-bded-4c089b2502ff",
            "floating_ip_address": "5.21.11.227",
            "external_service_port": 0
        }
    ]
}
```

Status Codes

See **Status Codes**.

4.3.3 Querying Details of a DNAT Rule

Function

This API is used to query details of a DNAT rule.

URI

GET /v2.0/dnat_rules/{dnat_rule_id}

Table 4-35 Parameter description

Parameter	Type	Mandatory	Description
dnat_rule_id	String	Yes	Specifies the DNAT rule ID.

Request

None

Response

Table 4-36 lists response parameter.

Table 4-36 Response parameter

Parameter	Type	Description
dnat_rule	Object	Specifies the DNAT rule object. For details, see **Table 4-37**.

Table 4-37 Description of the **dnat_rule** field

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.

Parameter	Type	Description
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the NAT gateway ID.
port_id	String	Specifies the port ID of the cloud server (ECS or BMS).
private_ip	String	Specifies the private IP address, for example, the IP address of an on-premises network connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port number used by the cloud server (ECS or BMS) to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 6-1**.
admin_state_up	Boolean	• Specifies whether the DNAT rule is enabled or disabled. • The value can be: – **true**: The DNAT rule is enabled. – **false**: The DNAT rule is disabled.

Parameter	Type	Description
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/dnat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338
  ```
- Example response
  ```
  {
    "dnat_rule": {
         "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
         "status": "ACTIVE",
         "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
         "admin_state_up": true,
         "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
         "internal_service_port": 993,
         "protocol": "TCP",
         "tenant_id": "abc",
         "created_at": "2017-11-15 15:44:42.595173",
         "id": "79195d50-0271-41f1-bded-4c089b2502ff",
         "floating_ip_address": "5.21.11.226",
         "external_service_port": 242
         "private_ip": ""
    }
  }
  ```

Status Codes

See **Status Codes**.

4.3.4 Deleting a DNAT Rule

Function

This API is used to delete a DNAT rule.

URI

DELETE /v2.0/dnat_rules/{dnat_rule_id}

Table 4-38 Parameter description

Parameter	Mandatory	Type	Description
dnat_rule_id	Yes	String	Specifies the ID of the DNAT rule.

Request

None

Response

None

Examples

- Example request
  DELETE https://{Endpoint}/v2.0/dnat_rules/a78fb3eb-1654-4710-8742-3fc49d5f04f8
- Example response
  None (STATUS CODE 204)

Status Code

See **Status Codes**.

5 Private Nat API

5.1 Private NAT Gateways

5.1.1 Querying Private NAT Gateways

Function

This API is used to query private NAT gateways.

Constraints

You can type the question mark (?) and ampersand (&) at the end of the URI to define multiple search criteria. All optional parameters can be filtered. For details, see the example request.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/gateways

Table 5-1 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Table 5-2 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records displayed on each page. The value ranges from 0 to 2000. Default value: 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. The value is obtained from next_marker or previous_marker in PageInfo queried last time. Minimum: **36** Maximum: **36**
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array	Specifies the private NAT gateway ID. Array Length: **1 - 10**
name	No	Array	Specifies the private NAT gateway name. Array Length: **1 - 10**
description	No	Array	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Array Length: **1 - 10**

Parameter	Mandatory	Type	Description
spec	No	Array	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Array Length: **1 - 10** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**
project_id	No	Array	Specifies the project ID. Array Length: **1 - 10**
status	No	Array	Specifies the private NAT gateway status. The value can be: ACTIVE: The private NAT gateway is running properly. FROZEN: The private NAT gateway is frozen. Array Length: **1 - 10** Enumeration values: • **ACTIVE** • **FROZEN**
vpc_id	No	Array	Specifies the ID of the VPC where the private NAT gateway resides. Array Length: **1 - 10**
virsubnet_id	No	Array	Specifies the ID of the subnet where the private NAT gateway resides. Array Length: **1 - 10**
enterprise_project_id	No	Array	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. Array Length: **1 - 10**

Request Parameters

Table 5-3 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-4 Response body parameters

Parameter	Type	Description
gateways	Array of **PrivateNat** objects	Specifies the response body for querying private NAT gateways. For details, see the PrivateNat description. Array Length: **0 - 2000**
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
page_info	**PageInfo** object	Specifies the pagination information.

Table 5-5 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Parameter	Type	Description
project_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
name	String	Specifies the private NAT gateway name. Minimum: **1** Maximum: **64**
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
spec	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Default: **Small** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: ACTIVE: The private NAT gateway is running properly. FROZEN: The private NAT gateway is frozen. Enumeration values: • **ACTIVE** • **FROZEN**
created_at	String	Specifies when the private NAT gateway was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
updated_at	String	Specifies when the private NAT gateway was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
downlink_vpcs	Array of **DownlinkVpc** objects	Specifies the VPC where the private NAT gateway resides. Array Length: **1 - 10**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**

Parameter	Type	Description
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. Minimum: **1** Maximum: **36**

Table 5-6 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway resides. Minimum: **36** Maximum: **36**
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway resides. Minimum: **36** Maximum: **36**

Table 5-7 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Table 5-8 PageInfo

Parameter	Type	Description
next_marker	String	Specifies the ID of the last record in this query, which can be used in the next query. Minimum: **1** Maximum: **36**

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true, this parameter is used together to query resources on the previous page. Minimum: **1** Maximum: **36**
current_count	Integer	Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page. Minimum: **1** Maximum: **2000**

Example Requests

```
GET https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/gateways
```

Example Responses

Status code: 200

Private NAT gateways queried.

```
{
  "gateways" : [ {
    "id" : "14338426-6afe-4019-996b-3a9525296e11",
    "name" : "private-nat-gateway-name1",
    "description" : "private-nat-gateway-description1",
    "spec" : "Small",
    "project_id" : "70505c941b9b4dfd82fd351932328a2f",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "status" : "ACTIVE",
    "created_at" : "2019-04-22T08:47:13",
    "updated_at" : "2019-04-22T08:47:13",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ],
    "downlink_vpcs" : [ {
      "vpc_id" : "3cb66d44-9f75-4237-bfff-e37b14d23ad2",
      "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
    } ]
  }, {
    "id" : "65995b8e-dcb7-4ab4-9931-bc3c95beec0a",
    "name" : "private-nat-gateway-name2",
    "description" : "private-nat-gateway-description2",
    "spec" : "Small",
    "project_id" : "70505c941b9b4dfd82fd351932328a2f",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "status" : "ACTIVE",
    "created_at" : "2019-04-22T09:06:54",
    "updated_at" : "2019-04-22T09:06:54",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ],
    "downlink_vpcs" : [ {
      "vpc_id" : "3cb66d44-9f75-4237-bfff-e37b14d23ad2",
```



```
    "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
  } ]
 } ],
 "request_id" : "a7b00469-5a31-4274-bb10-59167243383e",
 "page_info" : {
  "previous_marker" : "14338426-6afe-4019-996b-3a9525296e11",
  "current_count" : 2
 }
}
```


Status Codes

Status Code	Description
200	Private NAT gateways queried.

Error Codes

See **Error Codes**.

5.1.2 Updating a Private NAT Gateway

Function

This API is used to update a private NAT gateway.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/private-nat/gateways/{gateway_id}

Table 5-9 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
gateway_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-10 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-11 Request body parameters

Parameter	Mandatory	Type	Description
gateway	Yes	**UpdatePrivateNatOption** object	Specifies the request body for updating the private NAT gateway.

Table 5-12 UpdatePrivateNatOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the private NAT gateway name. Only digits, letters, underscores (_), and hyphens (-) are allowed. Minimum: **1** Maximum: **64**
description	No	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**

Parameter	Mandatory	Type	Description
spec	No	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**

Response Parameters

Status code: 200

Table 5-13 Response body parameters

Parameter	Type	Description
gateway	**PrivateNat** object	Specifies the response body for the private NAT gateway.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-14 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
name	String	Specifies the private NAT gateway name. Minimum: **1** Maximum: **64**

Parameter	Type	Description
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
spec	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Default: **Small** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: ACTIVE: The private NAT gateway is running properly. FROZEN: The private NAT gateway is frozen. Enumeration values: • **ACTIVE** • **FROZEN**
created_at	String	Specifies when the private NAT gateway was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
updated_at	String	Specifies when the private NAT gateway was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
downlink_vpcs	Array of **DownlinkVpc** objects	Specifies the VPC where the private NAT gateway resides. Array Length: **1 - 10**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. Minimum: **1** Maximum: **36**

Table 5-15 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway resides. Minimum: **36** Maximum: **36**
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway resides. Minimum: **36** Maximum: **36**

Table 5-16 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

Updating a private NAT gateway. (Setting **name** to **private-nat-gateway-name**, **description** to **private-nat-gateway-description**, and **spec** to **Medium**)

```
PUT https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/gateways/
14338426-6afe-4019-996b-3a9525296e11

{
  "gateway" : {
    "name" : "private-nat-gateway-name",
    "description" : "private-nat-gateway-description",
    "spec" : "Medium"
  }
}
```

Example Responses

Status code: 200

Private NAT gateway updated.

```
{
  "gateway" : {
    "id" : "14338426-6afe-4019-996b-3a9525296e11",
    "name" : "private-nat-gateway-name",
    "description" : "private-nat-gateway-description",
```



```
  "spec" : "Medium",
  "project_id" : "70505c941b9b4dfd82fd351932328a2f",
  "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
  "status" : "ACTIVE",
  "created_at" : "2019-04-22T08:47:13",
  "updated_at" : "2019-04-22T08:47:13",
  "tags" : [ {
    "key" : "key1",
    "value" : "value1"
  } ],
  "downlink_vpcs" : [ {
    "vpc_id" : "3cb66d44-9f75-4237-bfff-e37b14d23ad2",
    "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
  } ]
 },
 "request_id" : "e7e3323e95b348708d26e68a0ddece71"
}
```


Status Codes

Status Code	Description
200	Private NAT gateway updated.

Error Codes

See **Error Codes**.

5.1.3 Deleting a Private NAT Gateway

Function

This API is used to delete a private NAT gateway.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat/gateways/{gateway_id}

Table 5-17 Path Parameters

Parameter	Mandatory	Type	Description
gateway_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-18 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

None

Example Requests

```
DELETE https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/gateways/14338426-6afe-4019-996b-3a9525296e11
```

Example Responses

None

Status Codes

Status Code	Description
204	Private NAT gateway deleted.

Error Codes

See **Error Codes**.

5.1.4 Creating a Private NAT Gateway

Function

This API is used to create a private NAT gateway.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat/gateways

Table 5-19 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-20 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-21 Request body parameters

Parameter	Mandatory	Type	Description
gateway	Yes	**CreatePrivateNatOption** object	Specifies the request body for creating the private NAT gateway.

Table 5-22 CreatePrivateNatOption

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the private NAT gateway name. Only digits, letters, underscores (_), and hyphens (-) are allowed. Minimum: **1** Maximum: **64**
description	No	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
spec	No	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Default: **Small** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**
downlink_vpcs	Yes	Array of **DownlinkVpcOption** objects	Specifies the VPC where the private NAT gateway resides. Array Length: **1 - 1**
tags	No	Array of **Tag** objects	Specifies the tag list. Array Length: **0 - 10**

Parameter	Mandatory	Type	Description
enterprise_project_id	No	String	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. For more information about enterprise projects and how to obtain enterprise project IDs, see Enterprise Management User Guide. Default: **0** Minimum: **1** Maximum: **36**

Table 5-23 DownlinkVpcOption

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	Specifies the ID of the subnet where the private NAT gateway resides. Minimum: **36** Maximum: **36**

Table 5-24 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 201

Table 5-25 Response body parameters

Parameter	Type	Description
gateway	**PrivateNat** object	Specifies the response body for the private NAT gateway.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-26 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
name	String	Specifies the private NAT gateway name. Minimum: **1** Maximum: **64**
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
spec	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Default: **Small** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**

Parameter	Type	Description
status	String	Specifies the private NAT gateway status. The value can be: ACTIVE: The private NAT gateway is running properly. FROZEN: The private NAT gateway is frozen. Enumeration values: • **ACTIVE** • **FROZEN**
created_at	String	Specifies when the private NAT gateway was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
updated_at	String	Specifies when the private NAT gateway was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
downlink_vpcs	Array of **DownlinkVpc** objects	Specifies the VPC where the private NAT gateway resides. Array Length: **1 - 10**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. Minimum: **1** Maximum: **36**

Table 5-27 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway resides. Minimum: **36** Maximum: **36**
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway resides. Minimum: **36** Maximum: **36**

Table 5-28 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

Creating a private NAT gateway (Setting **name** to **private-nat-gateway-name**, **spec** to **Small**, and **virsubnet_id** to **373979ee-f4f0-46c5-80e3-0fbf72646b70**)

```
POST https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/gateways

{
  "gateway" : {
    "name" : "private-nat-gateway-name",
    "description" : "private-nat-gateway-description",
    "spec" : "Small",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "downlink_vpcs" : [ {
      "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
    } ],
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }
}
```

Example Responses

Status code: 201

Private NAT gateway created.

```
{
  "request_id" : "9882046a9b96f1405472e36d797e33dc",
  "gateway" : {
    "id" : "14338426-6afe-4019-996b-3a9525296e11",
    "name" : "private-nat-gateway-name",
    "description" : "private-nat-gateway-description",
    "spec" : "Small",
    "project_id" : "70505c941b9b4dfd82fd351932328a2f",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "status" : "ACTIVE",
    "created_at" : "2019-04-22T08:47:13",
    "updated_at" : "2019-04-22T08:47:13",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ],
    "downlink_vpcs" : [ {
      "vpc_id" : "3cb66d44-9f75-4237-bfff-e37b14d23ad2",
      "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
    } ]
```



```
  }
}
```

Status Codes

Status Code	Description
201	Private NAT gateway created.

Error Codes

See **Error Codes**.

5.1.5 Querying Details About a Specified Private NAT Gateway

Function

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

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/gateways/{gateway_id}

Table 5-29 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
gateway_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-30 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-31 Response body parameters

Parameter	Type	Description
gateway	**PrivateNat** object	Specifies the response body for the private NAT gateway.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-32 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **32** Maximum: **32**
name	String	Specifies the private NAT gateway name. Minimum: **1** Maximum: **64**

Parameter	Type	Description
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
spec	String	Specifies the private NAT gateway type. The value can be: Small Medium Large Extra-large Default: **Small** Enumeration values: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: ACTIVE: The private NAT gateway is running properly. FROZEN: The private NAT gateway is frozen. Enumeration values: • **ACTIVE** • **FROZEN**
created_at	String	Specifies when the private NAT gateway was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
updated_at	String	Specifies when the private NAT gateway was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format.
downlink_vpcs	Array of **DownlinkVpc** objects	Specifies the VPC where the private NAT gateway resides. Array Length: **1 - 10**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created. Minimum: **1** Maximum: **36**

Table 5-33 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway resides. Minimum: **36** Maximum: **36**
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway resides. Minimum: **36** Maximum: **36**

Table 5-34 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

```
GET https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/gateways/
14338426-6afe-4019-996b-3a9525296e11
```

Example Responses

Status code: 200

Details about the private NAT gateway queried.

```
{
  "gateway" : {
    "id" : "14338426-6afe-4019-996b-3a9525296e11",
    "name" : "private-nat-gateway-name",
    "description" : "private-nat-gateway-description",
    "spec" : "Small",
    "project_id" : "70505c941b9b4dfd82fd351932328a2f",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "status" : "ACTIVE",
    "created_at" : "2019-04-22T08:47:13",
    "updated_at" : "2019-04-22T08:47:13",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ],
    "downlink_vpcs" : [ {
      "vpc_id" : "3cb66d44-9f75-4237-bfff-e37b14d23ad2",
```



```
    "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70"
  } ]
 },
 "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```

Status Codes

Status Code	Description
200	Details about the private NAT gateway queried.

Error Codes

See **Error Codes**.

5.2 DNAT Rules

5.2.1 Querying DNAT Rules

Function

This API is used to query DNAT rules.

Constraints

You can type the question mark (?) and ampersand (&) at the end of the URI to define multiple search criteria. All optional parameters can be filtered. For details, see the example request.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/dnat-rules

Table 5-35 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Table 5-36 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records displayed on each page. The value ranges from 0 to 2000. Default value: 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. The value is obtained from next_marker or previous_marker in PageInfo queried last time. Minimum: **36** Maximum: **36**
page_reverse	No	Boolean	Specifies whether to query the previous page.
id	No	Array	Specifies the DNAT rule ID. Array Length: **1 - 10**
project_id	No	Array	Specifies the project ID. Array Length: **1 - 10**
enterprise_project_id	No	Array	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is being created. Array Length: **1 - 10**
description	No	Array	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Array Length: **1 - 10**
gateway_id	No	Array	Specifies the private NAT gateway ID. Array Length: **1 - 10**

Parameter	Mandatory	Type	Description
transit_ip_id	No	Array	Specifies the ID of the transit IP address. Array Length: **1 - 10**
external_ip_address	No	Array	Specifies the transit IP address. Array Length: **1 - 10**
network_interface_id	No	Array	Specifies the network interface ID. Network interfaces of an Elastic Cloud Server (ECS), load balancer, or virtual IP address are supported. Array Length: **1 - 10**
type	No	Array	Specifies the backend resource type of the DNAT rule. The type can be: COMPUTE: The backend resource is a compute instance. VIP: The backend resource is a virtual IP address. ELB: The backend resource is a shared load balancer. ELBv3: The backend resource is a dedicated load balancer. CUSTOMIZE: The backend resource is a user-defined IP address. Array Length: **1 - 10**
private_ip_address	No	Array	Specifies the private IP address of the backend instance. Array Length: **1 - 10**

Request Parameters

Table 5-37 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-38 Response body parameters

Parameter	Type	Description
dnat_rules	Array of **PrivateDnat** objects	Specifies the response body for querying DNAT rules. Array Length: **0 - 2000**
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
page_info	**PageInfo** object	Specifies the pagination information.

Table 5-39 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**

Parameter	Type	Description
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer, virtual IP address are supported. Minimum: **1** Maximum: **36**
type	String	Specifies the backend resource type of the DNAT rule. The type can be: COMPUTE: The backend resource is a compute instance. VIP: The backend resource is a virtual IP address. ELB: The backend resource is a load balancer. ELBv3: The backend resource is a dedicated load balancer. CUSTOMIZE: The backend resource is a user-defined IP address. Minimum: **1** Maximum: **10**
protocol	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
private_ip_address	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**

Parameter	Type	Description
internal_service_port	String	Specifies the port number of the backend instance. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
transit_service_port	String	Specifies the port number of the transit IP address. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is being created. Minimum: **1** Maximum: **36**
created_at	String	Specifies when the DNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the DNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Table 5-40 PageInfo

Parameter	Type	Description
next_marker	String	Specifies the ID of the last record in this query, which can be used in the next query. Minimum: **1** Maximum: **36**

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true, this parameter is used together to query resources on the previous page. Minimum: **1** Maximum: **36**
current_count	Integer	Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page. Minimum: **1** Maximum: **2000**

Example Requests

```
GET https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/dnat-rules
```

Example Responses

Status code: 200

DNAT rules queried.

```
{
  "dnat_rules" : [ {
    "id" : "24dd6bf5-48f2-4915-ad0b-5bb111d39c83",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "aa",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "network_interface_id" : "dae9393a-b536-491c-a5a2-72edc1104707",
    "type" : "COMPUTE",
    "protocol" : "any",
    "internal_service_port" : "0",
    "transit_service_port" : "0",
    "private_ip_address" : "192.168.1.72",
    "created_at" : "2019-04-29T07:10:01",
    "updated_at" : "2019-04-29T07:10:01"
  }, {
    "id" : "25dcdb21-97de-43cd-b476-31637a47f05d",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "aa",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "15abdf29-4a68-474c-9963-79c4e6d495d7",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "network_interface_id" : "9e2f0dbb-68b2-4c4b-9298-fa4f13187976",
    "type" : "COMPUTE",
    "protocol" : "any",
    "internal_service_port" : "0",
    "transit_service_port" : "0",
    "private_ip_address" : "192.168.1.99",
    "created_at" : "2019-04-29T07:15:41",
    "updated_at" : "2019-04-29T07:15:41"
  } ],
  "request_id" : "a7b00469-5a31-4274-bb10-59167243383e",
  "page_info" : {
    "previous_marker" : "14338426-6afe-4019-996b-018008113013",
```



```
    "current_count" : 2
  }
}
```

Status Codes

Status Code	Description
200	DNAT rules queried.

Error Codes

See **Error Codes**.

5.2.2 Updating a DNAT Rule

Function

This API is used to update a specified DNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}

Table 5-41 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
dnat_rule_id	Yes	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-42 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-43 Request body parameters

Parameter	Mandatory	Type	Description
dnat_rule	No	**UpdatePrivateDnatOption** object	Specifies the request body for updating a DNAT rule.

Table 5-44 UpdatePrivateDnatOption

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
transit_ip_id	No	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Parameter	Mandatory	Type	Description
network_interface_id	No	String	Specifies the network interface ID. Network interfaces of an ECS, load balancer, or virtual IP address are supported. Minimum: **36** Maximum: **36**
private_ip_address	No	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**
protocol	No	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
internal_service_port	No	String	Specifies the port number of the backend instance. Minimum: **1** Maximum: **5**
transit_service_port	No	String	Specifies the port number of the transit IP address. Minimum: **1** Maximum: **10**

Response Parameters

Status code: 200

Table 5-45 Response body parameters

Parameter	Type	Description
dnat_rule	**PrivateDnat** object	Specifies the response body of the DNAT rule.

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-46 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer, virtual IP address are supported. Minimum: **1** Maximum: **36**

Parameter	Type	Description
type	String	Specifies the backend resource type of the DNAT rule. The type can be: COMPUTE: The backend resource is a compute instance. VIP: The backend resource is a virtual IP address. ELB: The backend resource is a load balancer. ELBv3: The backend resource is a dedicated load balancer. CUSTOMIZE: The backend resource is a user-defined IP address. Minimum: **1** Maximum: **10**
protocol	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
private_ip_address	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**
internal_service_port	String	Specifies the port number of the backend instance. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
transit_service_port	String	Specifies the port number of the transit IP address. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is being created. Minimum: **1** Maximum: **36**

Parameter	Type	Description
created_at	String	Specifies when the DNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the DNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Example Requests

Updating a DNAT rule (Updating **description** to **my dnat-rules 03**)

```
PUT https://{Endpoint}/v3/da26182801684918 8f4dcc2ef94d9da9/private-nat/dnat-rules/
24dd6bf5-48f2-4915-ad0b-5bb111d39c83

{
  "dnat_rule" : {
    "description" : "my dnat-rules 03"
  }
}
```

Example Responses

Status code: 200

DNAT rule updated.

```
{
  "dnat_rule" : {
    "id" : "24dd6bf5-48f2-4915-ad0b-5bb111d39c83",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "dnat rule description",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "network_interface_id" : "dae9393a-b536-491c-a5a2-72edc1104707",
    "type" : "COMPUTE",
    "private_ip_address" : "192.168.1.72",
    "created_at" : "2019-04-29T07:10:01",
    "updated_at" : "2019-04-29T07:10:01"
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```

Status Codes

Status Code	Description
200	DNAT rule updated.

Error Codes

See **Error Codes**.

5.2.3 Creating a DNAT Rule

Function

This API is used to create a DNAT rule.

Constraints

When you are creating a DNAT rule, status of the NAT gateway must be set to ACTIVE.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat/dnat-rules

Table 5-47 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-48 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-49 Request body parameters

Parameter	Mandatory	Type	Description
dnat_rule	Yes	CreatePrivateDnatOption object	Specifies the request body for creating a DNAT rule.

Table 5-50 CreatePrivateDnatOption

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
transit_ip_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
network_interface_id	No	String	Specifies the network interface ID. Network interfaces of an ECS, load balancer, or virtual IP address are supported. Minimum: **36** Maximum: **36**
gateway_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Parameter	Mandatory	Type	Description
protocol	No	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
private_ip_address	No	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**
internal_service_port	No	String	Specifies the port number of the backend instance. Minimum: **1** Maximum: **5**
transit_service_port	No	String	Specifies the port number of the transit IP address. Minimum: **1** Maximum: **5**

Response Parameters

Status code: 201

Table 5-51 Response body parameters

Parameter	Type	Description
dnat_rule	**PrivateDnat** object	Specifies the response body of the DNAT rule.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-52 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer, virtual IP address are supported. Minimum: **1** Maximum: **36**
type	String	Specifies the backend resource type of the DNAT rule. The type can be: COMPUTE: The backend resource is a compute instance. VIP: The backend resource is a virtual IP address. ELB: The backend resource is a load balancer. ELBv3: The backend resource is a dedicated load balancer. CUSTOMIZE: The backend resource is a user-defined IP address. Minimum: **1** Maximum: **10**

Parameter	Type	Description
protocol	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
private_ip_address	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**
internal_service_port	String	Specifies the port number of the backend instance. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
transit_service_port	String	Specifies the port number of the transit IP address. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is being created. Minimum: **1** Maximum: **36**
created_at	String	Specifies when the DNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Parameter	Type	Description
updated_at	String	Specifies when the DNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Example Requests

Creating a DNAT rule (Setting**transit_ip_id** to **3faa719d-6d18-4ccb-a5c7-33e65a09663e** and **gateway_id** to **0adefb29-a6c2-48a5-8637-2be67fa03fec**)

```
POST https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/dnat-rules

{
  "dnat_rule" : {
    "description" : "aa",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "network_interface_id" : "dae9393a-b536-491c-a5a2-72edc1104707"
  }
}
```

Example Responses

Status code: 201

DNAT rule created.

```
{
  "dnat_rule" : {
    "id" : "24dd6bf5-48f2-4915-ad0b-5bb111d39c83",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "aa",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "network_interface_id" : "dae9393a-b536-491c-a5a2-72edc1104707",
    "type" : "COMPUTE",
    "protocol" : "any",
    "internal_service_port" : "0",
    "transit_service_port" : "0",
    "private_ip_address" : "192.168.1.72",
    "created_at" : "2019-04-29T07:10:01",
    "updated_at" : "2019-04-29T07:10:01"
  },
  "request_id" : "70505c941b9b4dfd82fd351932328a2f"
}
```

Status Codes

Status Code	Description
201	DNAT rule created.

Error Codes

See **Error Codes**.

5.2.4 Deleting a DNAT Rule

Function

This API is used to delete a specified DNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}

Table 5-53 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
dnat_rule_id	Yes	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-54 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

None

Example Requests

```
DELETE https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/dnat-rules/
24dd6bf5-48f2-4915-ad0b-5bb111d39c83
```

Example Responses

None

Status Codes

Status Code	Description
204	DNAT rule deleted.

Error Codes

See **Error Codes**.

5.2.5 Querying Details About a Specified DNAT Rule

Function

This API is used to query details about a specified DNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}

Table 5-55 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
dnat_rule_id	Yes	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-56 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-57 Response body parameters

Parameter	Type	Description
dnat_rule	**PrivateDnat** object	Specifies the response body of the DNAT rule.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-58 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**

Parameter	Type	Description
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer, virtual IP address are supported. Minimum: **1** Maximum: **36**
type	String	Specifies the backend resource type of the DNAT rule. The type can be: COMPUTE: The backend resource is a compute instance. VIP: The backend resource is a virtual IP address. ELB: The backend resource is a load balancer. ELBv3: The backend resource is a dedicated load balancer. CUSTOMIZE: The backend resource is a user-defined IP address. Minimum: **1** Maximum: **10**
protocol	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively. Minimum: **1** Maximum: **3** Enumeration values: • **tcp** • **udp** • **any**
private_ip_address	String	Specifies the private IP address of the backend instance. Minimum: **7** Maximum: **15**

Parameter	Type	Description
internal_service_port	String	Specifies the port number of the backend instance. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
transit_service_port	String	Specifies the port number of the transit IP address. Minimum: **0** Maximum: **65535** Minimum: **1** Maximum: **5**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is being created. Minimum: **1** Maximum: **36**
created_at	String	Specifies when the DNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the DNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Example Requests

```
GET https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/dnat-rules/
24dd6bf5-48f2-4915-ad0b-5bb111d39c83
```

Example Responses

Status code: 200

DNAT rule details queried.

```
{
  "dnat_rule" : {
    "id" : "24dd6bf5-48f2-4915-ad0b-5bb111d39c83",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "aa",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
```



```
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "network_interface_id" : "dae9393a-b536-491c-a5a2-72edc1104707",
    "type" : "COMPUTE",
    "protocol" : "any",
    "internal_service_port" : "0",
    "transit_service_port" : "0",
    "private_ip_address" : "192.168.1.72",
    "created_at" : "2019-04-29T07:10:01",
    "updated_at" : "2019-04-29T07:10:01"
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```


Status Codes

Status Code	Description
200	DNAT rule details queried.

Error Codes

See **Error Codes**.

5.3 SNAT Rules

5.3.1 Querying SNAT Rules

Function

This API is used to query SNAT rules.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/snat-rules

Table 5-59 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Table 5-60 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records displayed on each page. The value ranges from 0 to 2000. Default value: 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. The value is obtained from next_marker or previous_marker in PageInfo queried last time. Minimum: **36** Maximum: **36**
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array	Specifies the SNAT rule ID. Array Length: **1 - 10**
project_id	No	Array	Specifies the project ID. Array Length: **1 - 10**
description	No	Array	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Array Length: **1 - 10**
gateway_id	No	Array	Specifies the private NAT gateway ID. Array Length: **1 - 10**
cidr	No	Array	Specifies the CIDR block that matches the SNAT rule. Array Length: **1 - 10**
virsubnet_id	No	Array	Specifies the ID of the subnet that matches the SNAT rule. Array Length: **1 - 10**

Parameter	Mandatory	Type	Description
transit_ip_id	No	Array	Specifies the ID of the transit IP address. Array Length: **1 - 10**
transit_ip_address	No	Array	Specifies the transit IP address. Array Length: **1 - 10**
enterprise_project_id	No	Array	Specifies the ID of the enterprise project that is associated with the SNAT rule when the SNAT rule is being created. Array Length: **1 - 10**

Request Parameters

Table 5-61 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-62 Response body parameters

Parameter	Type	Description
snat_rules	Array of **PrivateSnat** objects	Specifies the response body for querying SNAT rules. Array Length: **0 - 2000**
page_info	**PageInfo** object	Specifies the pagination information.

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-63 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
cidr	String	Specifies the CIDR block that matches the SNAT rule. Constraints: • Either this parameter or virsubnet_id must be specified. • The CIDR block cannot be the same as that of an existing SNAT rule. Minimum: **9** Maximum: **18**
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_associations	Array of **AssociatedTransitIp** objects	Specifies the list of details of associated transit IP addresses. Array Length: **1 - 1**

Parameter	Type	Description
created_at	String	Specifies when the SNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the SNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
enterprise_project_id	String	Specifies the enterprise project ID. Minimum: **1** Maximum: **36**

Table 5-64 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
transit_ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**

Table 5-65 PageInfo

Parameter	Type	Description
next_marker	String	Specifies the ID of the last record in this query, which can be used in the next query. Minimum: **1** Maximum: **36**
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true, this parameter is used together to query resources on the previous page. Minimum: **1** Maximum: **36**

Parameter	Type	Description
current_count	Integer	Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page. Minimum: **1** Maximum: **2000**

Example Requests

```
GET https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat/snat-rules
```

Example Responses

Status code: 200

SNAT rules queried.


```
{
  "snat_rules" : [ {
    "id" : "8a522ff9-8158-494b-83cd-533b045700e6",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "snat rule description",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "cidr" : "",
    "virsubnet_id" : "95df1b88-d9bc-4edd-a808-a771dd4ded32",
    "transit_ip_associations" : [ {
      "transit_ip_id" : "bbe7c2e7-3bad-445b-a067-b30acce66053",
      "transit_ip_address" : "172.20.1.98"
    } ],
    "created_at" : "2019-10-22T03:33:07",
    "updated_at" : "2019-10-22T03:33:07"
  }, {
    "id" : "af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "snat rule description",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "cidr" : "",
    "virsubnet_id" : "5b9ea497-727d-4ad0-a99e-3984b3f5aaed",
    "transit_ip_associations" : [ {
      "transit_ip_id" : "36a3049a-1682-48b3-b1cf-cb986a3350ef",
      "transit_ip_address" : "172.20.1.10"
    } ],
    "created_at" : "2019-10-22T03:31:19",
    "updated_at" : "2019-10-22T03:31:19"
  } ],
  "page_info" : {
    "next_marker" : "af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81",
    "previous_marker" : "8a522ff9-8158-494b-83cd-533b045700e6",
    "current_count" : 2
  },
  "request_id" : "69806207-62e3-4950-b463-ff5c1779b714"
}
```


Status Codes

Status Code	Description
200	SNAT rules queried.

Error Codes

See **Error Codes**.

5.3.2 Querying Details About a Specified SNAT Rule

Function

This API is used to query details about a specified SNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}

Table 5-66 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
snat_rule_id	Yes	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-67 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-68 Response body parameters

Parameter	Type	Description
snat_rule	**PrivateSnat** object	Specifies the response body of the SNAT rule.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-69 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Parameter	Type	Description
cidr	String	Specifies the CIDR block that matches the SNAT rule. Constraints: • Either this parameter or virsubnet_id must be specified. • The CIDR block cannot be the same as that of an existing SNAT rule. Minimum: **9** Maximum: **18**
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_associations	Array of **AssociatedTransitIp** objects	Specifies the list of details of associated transit IP addresses. Array Length: **1 - 1**
created_at	String	Specifies when the SNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the SNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
enterprise_project_id	String	Specifies the enterprise project ID. Minimum: **1** Maximum: **36**

Table 5-70 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
transit_ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**

Example Requests

```
GET https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat/snat-rules/
8a522ff9-8158-494b-83cd-533b045700e6
```

Example Responses

Status code: 200

SNAT rule details queried.

```
{
  "snat_rule" : {
    "id" : "8a522ff9-8158-494b-83cd-533b045700e6",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "my_snat_rule02",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "cidr" : "",
    "virsubnet_id" : "95df1b88-d9bc-4edd-a808-a771dd4ded32",
    "transit_ip_associations" : [ {
      "transit_ip_id" : "bbe7c2e7-3bad-445b-a067-b30acce66053",
      "transit_ip_address" : "172.20.1.98"
    } ],
    "created_at" : "2019-10-22T03:33:07",
    "updated_at" : "2019-10-22T03:33:07"
  },
  "request_id" : "c8b21002-a594-414d-9585-2cc5963d4c3e"
}
```

Status Codes

Status Code	Description
200	SNAT rule details queried.

Error Codes

See **Error Codes**.

5.3.3 Updating an SNAT Rule

Function

This API is used to update a specified SNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}

Table 5-71 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
snat_rule_id	Yes	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-72 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-73 Request body parameters

Parameter	Mandatory	Type	Description
snat_rule	Yes	**UpdatePrivateSnatOption** object	Specifies the request body for updating an SNAT rule.

Table 5-74 UpdatePrivateSnatOption

Parameter	Mandatory	Type	Description
transit_ip_ids	No	Array of strings	Specifies the ID list of transit IP addresses. Minimum: **36** Maximum: **36** Array Length: **1 - 1**
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**

Response Parameters

Status code: 200

Table 5-75 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **36** Maximum: **36**
snat_rule	**PrivateSnat** object	Specifies the response body of the SNAT rule.

Table 5-76 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
cidr	String	Specifies the CIDR block that matches the SNAT rule. Constraints: • Either this parameter or virsubnet_id must be specified. • The CIDR block cannot be the same as that of an existing SNAT rule. Minimum: **9** Maximum: **18**
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_associations	Array of **AssociatedTransitIp** objects	Specifies the list of details of associated transit IP addresses. Array Length: **1 - 1**
created_at	String	Specifies when the SNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Parameter	Type	Description
updated_at	String	Specifies when the SNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
enterprise_project_id	String	Specifies the enterprise project ID. Minimum: **1** Maximum: **36**

Table 5-77 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
transit_ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**

Example Requests

Updating an SNAT rule (Setting **transit_ip_ids** to **bbe7c2e7-3bad-445b-a067-b30acce66053** and **description** to **my_snat_rule_update**)

```
PUT https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat/snat-rules/
af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81

{
  "snat_rule" : {
    "description" : "my_snat_rule_update",
    "transit_ip_ids" : [ "bbe7c2e7-3bad-445b-a067-b30acce66053" ]
  }
}
```

Example Responses

Status code: 200

SNAT rule updated.

```
{
  "request_id" : "15bd32b2-1464-4817-b559-444d22499f6c",
  "snat_rule" : {
    "id" : "af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "my_snat_rule_update",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "cidr" : "10.1.1.64/30",
```



```
  "virsubnet_id" : "",
  "transit_ip_associations" : [ {
    "transit_ip_id" : "bbe7c2e7-3bad-445b-a067-b30acce66053",
    "transit_ip_address" : "172.20.1.98"
  } ],
  "created_at" : "2019-10-22T03:31:19",
  "updated_at" : "2019-10-22T03:39:52"
 }
}
```

Status Codes

Status Code	Description
200	SNAT rule updated.

Error Codes

See **Error Codes**.

5.3.4 Creating an SNAT Rule

Function

This API is used to create an SNAT rule.

Constraints

When you are creating an SNAT rule, status of the NAT gateway must be set to ACTIVE.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat/snat-rules

Table 5-78 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-79 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Table 5-80 Request body parameters

Parameter	Mandatory	Type	Description
snat_rule	Yes	**CreatePrivateSnatOption** object	Specifies the request body for creating an SNAT rule.

Table 5-81 CreatePrivateSnatOption

Parameter	Mandatory	Type	Description
gateway_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
cidr	No	String	Specifies the CIDR block that matches the SNAT rule. Constraint: Either this parameter or virsubnet_id must be specified. Minimum: **9** Maximum: **18**

Parameter	Mandatory	Type	Description
virsubnet_id	No	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified. Minimum: **36** Maximum: **36**
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **0** Maximum: **255**
transit_ip_ids	Yes	Array of strings	Specifies the ID list of transit IP addresses. Minimum: **36** Maximum: **36** Array Length: **1 - 1**

Response Parameters

Status code: 201

Table 5-82 Response body parameters

Parameter	Type	Description
snat_rule	**PrivateSnat** object	Specifies the response body of the SNAT rule.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-83 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **36** Maximum: **36**
gateway_id	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**
cidr	String	Specifies the CIDR block that matches the SNAT rule. Constraints: • Either this parameter or virsubnet_id must be specified. • The CIDR block cannot be the same as that of an existing SNAT rule. Minimum: **9** Maximum: **18**
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified. Minimum: **36** Maximum: **36**
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>). Minimum: **1** Maximum: **36**
transit_ip_associations	Array of **AssociatedTransitIp** objects	Specifies the list of details of associated transit IP addresses. Array Length: **1 - 1**
created_at	String	Specifies when the SNAT rule was created. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Parameter	Type	Description
updated_at	String	Specifies when the SNAT rule was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
enterprise_project_id	String	Specifies the enterprise project ID. Minimum: **1** Maximum: **36**

Table 5-84 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
transit_ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**

Example Requests

Creating an SNAT rule (Setting **description** to **my_snat_rule01**, **gateway_id** to **80da6f26-94eb-4537-97f0-5a56f4d04cfb**, and **virsubnet_id** to **5b9ea497-727d-4ad0-a99e-3984b3f5aaed**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat/snat-rules

{
  "snat_rule" : {
    "description" : "my_snat_rule01",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "virsubnet_id" : "5b9ea497-727d-4ad0-a99e-3984b3f5aaed",
    "transit_ip_ids" : [ "36a3049a-1682-48b3-b1cf-cb986a3350ef" ]
  }
}
```

Example Responses

Status code: 201

SNAT rule created.

```
{
  "snat_rule" : {
    "id" : "af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "snat rule description",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
```



```
  "cidr" : "",
  "virsubnet_id" : "5b9ea497-727d-4ad0-a99e-3984b3f5aaed",
  "transit_ip_associations" : [ {
    "transit_ip_id" : "36a3049a-1682-48b3-b1cf-cb986a3350ef",
    "transit_ip_address" : "172.20.1.10"
  } ],
  "created_at" : "2019-10-22T03:31:19",
  "updated_at" : "2019-10-22T03:31:19"
 },
 "request_id" : "2937502e-73f9-4ba5-ae75-2293a0b35fb8"
}
```


Status Codes

Status Code	Description
201	SNAT rule created.

Error Codes

See **Error Codes**.

5.3.5 Deleting an SNAT Rule

Function

This API is used to delete a specified SNAT rule.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}

Table 5-85 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
snat_rule_id	Yes	String	Specifies the SNAT rule ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-86 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

None

Example Requests

```
DELETE https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat/snat-rules/8a522ff9-8158-494b-83cd-533b045700e6
```

Example Responses

None

Status Codes

Status Code	Description
204	SNAT rule deleted.

Error Codes

See **Error Codes**.

5.4 Transit IP Addresses

5.4.1 Querying Transit IP Addresses

Function

This API is to query transit IP addresses.

Constraints

You can type the question mark (?) and ampersand (&) at the end of the URI to define multiple search criteria. All optional parameters can be filtered. For details, see the example request.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/transit-ips

Table 5-87 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Table 5-88 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records displayed on each page. The value ranges from 0 to 2000. Default value: 2000 Minimum: **1** Maximum: **2000** Default: **2000**
marker	No	String	Specifies the start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. The value is obtained from next_marker or previous_marker in PageInfo queried last time. Minimum: **36** Maximum: **36**
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.

Parameter	Mandatory	Type	Description
id	No	Array	Specifies the ID of the transit IP address. Array Length: **1 - 10**
project_id	No	Array	Specifies the project ID. Array Length: **1 - 10**
network_interface_id	No	Array	Specifies the network interface ID of the transit IP address. Array Length: **1 - 10**
ip_address	No	Array	Specifies the transit IP address. Array Length: **1 - 10**
gateway_id	No	Array	Specifies the ID of the private NAT gateway associated with the transit IP address. Array Length: **1 - 10**
enterprise_project_id	No	Array	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is being assigned. Array Length: **1 - 10**
virsubnet_id	No	Array	Specifies the subnet ID of the current tenant. Array Length: **1 - 10**

Request Parameters

Table 5-89 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-90 Response body parameters

Parameter	Type	Description
transit_ips	Array of **TransitIp** objects	Specifies the response body for querying transit IP addresses. Array Length: **0 - 2000**
page_info	**PageInfo** object	Specifies the pagination information.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-91 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID of the transit IP address. Minimum: **36** Maximum: **36**
ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**
created_at	String	Specifies when the transit IP address was assigned. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**

Parameter	Type	Description
updated_at	String	Specifies when the transit IP address was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
virsubnet_id	String	Specifies the subnet ID of the current tenant. Minimum: **0** Maximum: **36**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address. Minimum: **36** Maximum: **36**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is being assigned. Minimum: **1** Maximum: **36**

Table 5-92 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Table 5-93 PageInfo

Parameter	Type	Description
next_marker	String	Specifies the ID of the last record in this query, which can be used in the next query. Minimum: **1** Maximum: **36**

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true, this parameter is used together to query resources on the previous page. Minimum: **1** Maximum: **36**
current_count	Integer	Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page. Minimum: **1** Maximum: **2000**

Example Requests

```
GET https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/transit-ips
```

Example Responses

Status code: 200

Transit IP addresses queried.

```
{
  "transit_ips" : [ {
    "id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "network_interface_id" : "c91c43fb-8d66-48df-bfa9-b89053ac3737",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "gateway_id" : "521bb3d9-8bed-4c6c-9ee8-669bd0620f76",
    "ip_address" : "192.168.1.68",
    "created_at" : "2019-04-29T03:41:59",
    "updated_at" : "2019-04-29T03:41:59",
    "virsubnet_id" : "49ee5fb5-75bf-4320-946e-b21ef4c9c9c1",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }, {
    "id" : "a2845109-3b2f-4627-b08f-09a726c0a6e7",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "network_interface_id" : "adebbdca-8c26-4c14-b34f-3f53cd2c42f2",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "gateway_id" : "521bb3d9-8bed-4c6c-9ee8-669bd0620f76",
    "ip_address" : "192.168.1.68",
    "created_at" : "2019-04-29T02:16:09",
    "updated_at" : "2019-04-29T02:16:09",
    "virsubnet_id" : "333e5fb5-75bf-4320-946e-b21ef4c9c2g5",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  } ],
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```


Status Codes

Status Code	Description
200	Transit IP addresses queried.

Error Codes

See **Error Codes**.

5.4.2 Releasing a Transit IP Address

Function

This API is used to release a transit IP address.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat/transit-ips/{transit_ip_id}

Table 5-94 Path Parameters

Parameter	Mandatory	Type	Description
transit_ip_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **1** Maximum: **36**
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-95 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **512**

Response Parameters

None

Example Requests

```
DELETE https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/transit-ips/a2845109-3b2f-4627-b08f-09a726c0a6e7
```

Example Responses

None

Status Codes

Status Code	Description
204	Transit IP address released.

Error Codes

See **Error Codes**.

5.4.3 Assigning a Transit IP Address

Function

This API is used to assign a transit IP address.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat/transit-ips

Table 5-96 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Request Parameters

Table 5-97 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **512**

Table 5-98 Request body parameters

Parameter	Mandatory	Type	Description
transit_ip	Yes	**CreatTransitIpOption** object	Specifies the request body for assigning a transit IP address.

Table 5-99 CreatTransitIpOption

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	Specifies the subnet ID of the current project. Minimum: **1** Maximum: **36**

Parameter	Mandatory	Type	Description
ip_address	No	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**
enterprise_project_id	No	String	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is being assigned. Default: **0** Minimum: **1** Maximum: **36**
tags	No	Array of **Tag** objects	Specifies the tag of the transit IP address. Array Length: **0 - 2000**

Table 5-100 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 201

Table 5-101 Response body parameters

Parameter	Type	Description
transit_ip	**TransitIp** object	Specifies the response body of the transit IP address.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-102 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **1** Maximum: **36**
network_interface_id	String	Specifies the network interface ID of the transit IP address. Minimum: **36** Maximum: **36**
ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**
created_at	String	Specifies when the transit IP address was assigned. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the transit IP address was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
virsubnet_id	String	Specifies the subnet ID of the current tenant. Minimum: **0** Maximum: **36**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address. Minimum: **36** Maximum: **36**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is being assigned. Minimum: **1** Maximum: **36**

Table 5-103 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

Assigning a transit IP address (Setting **virsubnet_id** to **2759da7b-8015-404c-ae0a-a389007b0e2a**, **ip_address** to **192.168.1.68**, and **enterprise_project_id** to **2759da7b-8015-404c-ae0a-a389007b0e2a**)

```
POST https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/transit-ips

{
  "transit_ip" : {
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "ip_address" : "192.168.1.68",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }
}
```

Example Responses

Status code: 201

Transit IP address assigned.

```
{
  "transit_ip" : {
    "id" : "a2845109-3b2f-4627-b08f-09a726c0a6e7",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "network_interface_id" : "adebbdca-8c26-4c14-b34f-3f53cd2c42f2",
    "ip_address" : "192.168.1.68",
    "gateway_id" : "521bb3d9-8bed-4c6c-9ee8-669bd0620f76",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "created_at" : "2019-04-29T02:16:09",
    "updated_at" : "2019-04-29T02:16:09",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```


Status Codes

Status Code	Description
201	Transit IP address assigned.

Error Codes

See **Error Codes**.

5.4.4 Querying Details About a Specified Transit IP Address.

Function

This API is used to query details about a specified transit IP address.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/transit-ips/{transit_ip_id}

Table 5-104 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **36**
transit_ip_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-105 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token value. Minimum: **1** Maximum: **512**

Response Parameters

Status code: 200

Table 5-106 Response body parameters

Parameter	Type	Description
transit_ip	**TransitIp** object	Specifies the response body of the transit IP address.
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**

Table 5-107 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**
project_id	String	Specifies the project ID. Minimum: **1** Maximum: **36**

Parameter	Type	Description
network_interface_id	String	Specifies the network interface ID of the transit IP address. Minimum: **36** Maximum: **36**
ip_address	String	Specifies the transit IP address. Minimum: **7** Maximum: **35**
created_at	String	Specifies when the transit IP address was assigned. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
updated_at	String	Specifies when the transit IP address was updated. It is a UTC time in the yyyy-mm-ddThh:mm:ssZ format. Minimum: **1** Maximum: **36**
virsubnet_id	String	Specifies the subnet ID of the current tenant. Minimum: **0** Maximum: **36**
tags	Array of **Tag** objects	Specifies the list of tags. Array Length: **1 - 10**
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address. Minimum: **36** Maximum: **36**
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is being assigned. Minimum: **1** Maximum: **36**

Table 5-108 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**

Parameter	Type	Description
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

```
GET https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/private-nat/transit-ips/
a2845109-3b2f-4627-b08f-09a726c0a6e7
```

Example Responses

Status code: 200

Details about a specified transit IP address queried.

```
{
  "transit_ip" : {
    "id" : "a2845109-3b2f-4627-b08f-09a726c0a6e7",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "network_interface_id" : "adebbdca-8c26-4c14-b34f-3f53cd2c42f2",
    "ip_address" : "192.168.1.68",
    "gateway_id" : "521bb3d9-8bed-4c6c-9ee8-669bd0620f76",
    "enterprise_project_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "created_at" : "2019-04-29T02:16:09",
    "updated_at" : "2019-04-29T02:16:09",
    "virsubnet_id" : "49ee5fb5-75bf-4320-946e-b21ef4c9c9c1",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```

Status Codes

Status Code	Description
200	Details about a specified transit IP address queried.

Error Codes

See **Error Codes**.

5.5 Private NAT Gateway Tags

5.5.1 Querying Private NAT Gateways

Function

- This API is used to query private NAT gateways by tag.
- TMS uses this API to query and list private NAT gateways by tag.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat-gateways/resource_instances/action

Table 5-109 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**

Request Parameters

Table 5-110 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-111 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 positive number, and the default value is **0**. Minimum: **0** Maximum: **65535**
limit	No	String	Tags Minimum: **1** Maximum: **1000**
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. Enumeration values: • **filter** • **count**
matches	No	Array of **Match** objects	Tags
not_tags	No	Array of **Tags** objects	Specifies details of a resource. This parameter is used for extension and is left blank by default. Array Length: **1 - 10**

Parameter	Mandatory	Type	Description
tags	No	Array of **Tags** objects	Specifies the tag key. Array Length: **1 - 10**
tags_any	No	Array of **Tags** objects	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Array Length: **1 - 10**
not_tags_any	No	Array of **Tags** objects	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Array Length: **1 - 10**

Table 5-112 Match

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key used to search resources. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the tag value used to search resources. Minimum: **0** Maximum: **255**

Table 5-113 Tags

Parameter	Mandatory	Type	Description
key	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. Minimum: **1** Maximum: **128**
values	Yes	Array of strings	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 200

Table 5-114 Response body parameters

Parameter	Type	Description
resources	Array of **Resource** objects	Specifies the resource list. Array Length: **1 - 2000**
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
total_count	Integer	Specifies the total number of records.

Table 5-115 Resource

Parameter	Type	Description
resource_detail	Object	Specifies details of a resource. This parameter is used for extension and is left blank by default.
resource_id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name. Minimum: **0** Maximum: **36**
resource_tag	Array of **ResourceTag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned. Array Length: **1 - 10**

Table 5-116 ResourceTag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

- Querying public NAT gateways by tag (Setting **action** to **filter** and **limit** to **10**)

```
POST  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/
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 private NAT gateways by tag (Setting **action** to **count** and adding tags)

```
POST  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/
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" ]
 } ],
 "matches" : [ {
   "key" : "resource_name",
   "value" : "resource1"
 } ]
}
```

Example Responses

Status code: 200

- Query operation succeeded.
- Example 1: the response body when action is set to count
- Example 2: the response body when action is set to filter
- Example 1

```
{
  "request_id" : "a67262f6b7242d63d4ae95e41abf2790",
  "total_count" : 100
}
```

- Example 2

```
{
  "resources" : [ {
    "resource_detail" : null,
    "resource_id" : "e5ad289f-9c56-4daf-b08b-2e53a983473a",
    "resource_name" : "nat_gateways",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    }, {
      "key" : "key2",
      "value" : "value1"
    } ]
  } ],
  "request_id" : "a67262f6b7242d63d4ae95e41abf2790",
  "total_count" : 1
}
```

Status Codes

Status Code	Description
200	• Query operation succeeded. • Example 1: the response body when action is set to count • Example 2: the response body when action is set to filter

Error Codes

See **Error Codes**.

5.5.2 Querying Tags of All Private NAT Gateways in a Project

Function

- This API is used to query tags of all private NAT gateways owned by a tenant in a specified project.
- TMS uses this API to list tags of all private NAT gateways owned by a tenant, and provide tag association when you tag or filter private NAT gateways.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat-gateways/tags

Table 5-117 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**

Request Parameters

Table 5-118 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-119 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
tags	Array of **Tags** objects	Tags Array Length: **1 - 10**

Table 5-120 Tags

Parameter	Type	Description
key	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. Minimum: **1** Maximum: **128**
values	Array of strings	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **0** Maximum: **255**

Example Requests

```
GET https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/tags
```

Example Responses

Status code: 200

Query operation succeeded.

```
{
  "request_id" : "c285190c-b9e9-4f38-a69a-6745f22d8dca",
  "tags" : [ {
    "key" : "keys",
```



```
    "values" : [ "value" ]
  }, {
    "key" : "key3",
    "values" : [ "value3", "value33" ]
  }, {
    "key" : "key1",
    "values" : [ "value1" ]
  }, {
    "key" : "key2",
    "values" : [ "value2", "value22" ]
  } ]
}
```

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

5.5.3 Querying Tags of a Private NAT Gateway

Function

- This API is used to query tags of a specified private NAT gateway.
- TMS uses this API to query all tags of a specified private NAT gateway.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat-gateways/{resource_id}/tags

Table 5-121 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-122 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-123 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
tags	Array of **Tag** objects	Tags Array Length: **1 - 10**

Table 5-124 Tag

Parameter	Type	Description
key	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**
value	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Example Requests

```
GET  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/b0399473-c352-4d0c-8ff4-cfde719cfde9/tags
```

Example Responses

Status code: 200

Query operation succeeded.

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

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

5.5.4 Adding a Tag to a Private NAT Gateway

Function

- A private NAT gateway can have up to 10 tags.
- This API is idempotent.
- If a tag to be created 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}/private-nat-gateways/{resource_id}/tags

Table 5-125 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-126 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-127 Request body parameters

Parameter	Mandatory	Type	Description
tag	Yes	**Tag** object	Specifies tags.

Table 5-128 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Response Parameters

None

Example Requests

Adding a tag to a private NAT gateway (Setting **key** to **key1** and **value** to **value1**)

```
POST  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags

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

Example Responses

None

Status Codes

Status Code	Description
204	Tag added.

Error Codes

See **Error Codes**.

5.5.5 Batch Adding Tags to or Deleting Tags from a Private NAT Gateway

Function

- This API is used to batch add tags to or delete tags from a private NAT gateway.
- TMS uses this API to batch manage tags of a private NAT gateway.
- A private NAT gateway can have up to 10 tags.

Constraints

This API is idempotent.

- If the request body contains duplicate keys, an error is reported.
- During tag creation, duplicate keys are not allowed. If a key already exists in the database, its value will be overwritten by the new duplicate key.
- During tag deletion, if some tags to be deleted do not exist, the operation is considered to be successful by default. The character set of the tags will not be verified.
- The tags structure cannot be missing during deletion. The key cannot be left blank or be an empty string.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/private-nat-gateways/{resource_id}/tags/action

Table 5-129 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the private NAT gateway ID. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-130 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-131 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the operation to perform. The value can be: create delete Enumeration values: • **create** • **delete**
tags	Yes	Array of **Tag** objects	Specifies the tags. Array Length: **1 - 10**

Table 5-132 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Response Parameters

None

Example Requests

- Adding tags to a private NAT gateway (Setting **action** to **create** and adding the following two tags: **key1**, **value1** and **key2**, **value2**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/action

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

- Deleting tags of a private NAT gateway (Setting **action** to **delete** and deleting the following two tags: **key1**, **value1** and **key2**, **value2**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/action
```



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

Example Responses

None

Status Codes

Status Code	Description
204	Tags added or deleted.

Error Codes

See **Error Codes**.

5.5.6 Deleting a Tag from a Private NAT Gateway

Function

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

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat-gateways/{resource_id}/tags/{key}

Table 5-133 Path Parameters

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Minimum: **1** Maximum: **128**

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the ID of the private NAT gateway. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-134 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain a user token. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

None

Example Requests

Deleting a tag from a private NAT gateway

```
DELETE https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/3320166e-b937-40cc-a35c-02cd3f2b3ee2/tags/key1
```

Example Responses

None

Status Codes

Status Code	Description
204	Tag deleted.

Error Codes

See **Error Codes**.

5.6 Transit IP Address Tags

5.6.1 Querying Transit IP Addresses

Function

- This API is used to query transit IP addresses by tag.
- TMS uses this API to query and list transit IP addresses by tag.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/transit-ips/resource_instances/action

Table 5-135 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**

Request Parameters

Table 5-136 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-137 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 positive number, and the default value is **0**. Minimum: **0** Maximum: **65535**
limit	No	String	Tags Minimum: **1** Maximum: **1000**

Parameter	Mandatory	Type	Description
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. Enumeration values: • **filter** • **count**
matches	No	Array of **Match** objects	Tags
not_tags	No	Array of **Tags** objects	Specifies details of a resource. This parameter is used for extension and is left blank by default. Array Length: **1 - 10**
tags	No	Array of **Tags** objects	Specifies the tag key. Array Length: **1 - 10**
tags_any	No	Array of **Tags** objects	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Array Length: **1 - 10**

Parameter	Mandatory	Type	Description
not_tags_any	No	Array of **Tags** objects	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Array Length: **1 - 10**

Table 5-138 Match

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key used to search resources. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the tag value used to search resources. Minimum: **0** Maximum: **255**

Table 5-139 Tags

Parameter	Mandatory	Type	Description
key	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. Minimum: **1** Maximum: **128**
values	Yes	Array of strings	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **0** Maximum: **255**

Response Parameters

Status code: 200

Table 5-140 Response body parameters

Parameter	Type	Description
resources	Array of **Resource** objects	Specifies the resource list. Array Length: **1 - 2000**

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
total_count	Integer	Specifies the total number of records.

Table 5-141 Resource

Parameter	Type	Description
resource_detail	Object	Specifies details of a resource. This parameter is used for extension and is left blank by default.
resource_id	String	Specifies the resource ID. Minimum: **36** Maximum: **36**
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name. Minimum: **0** Maximum: **36**
resource_tag	Array of **ResourceTag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned. Array Length: **1 - 10**

Table 5-142 ResourceTag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: **1** Maximum: **128**
value	String	Specifies the tag value. Minimum: **0** Maximum: **255**

Example Requests

- Querying transit IP addresses by tag (Setting **action** to **filter** and **limit** to **10**)

  ```
  POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/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 transit IP addresses by tag (Setting **action** to **count** and adding tags)

```
POST  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/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" ]
  } ],
  "matches" : [ {
    "key" : "resource_name",
    "value" : "resource1"
  } ]
}
```

Example Responses

Status code: 200

- Query operation succeeded.
- Example 1: the response body when action is set to count
- Example 2: the response body when action is set to filter

- Example 1

```
{
  "request_id" : "d70aabc854d3d301f9bb106e6b70ac99",
  "total_count" : 100
}
```

- Example 2

```
{
  "resources" : [ {
    "resource_detail" : null,
    "resource_id" : "ae33be9b-d2c0-441b-a8d0-f6dafedf1778",
    "resource_name" : "transit_ips",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    }, {
      "key" : "key2",
      "value" : "value1"
    } ]
  } ],
  "request_id" : "9e47d9476cfd346f864cb77acb274185",
  "total_count" : 1
}
```

Status Codes

Status Code	Description
200	• Query operation succeeded. • Example 1: the response body when action is set to count • Example 2: the response body when action is set to filter

Error Codes

See **Error Codes**.

5.6.2 Querying Tags of All Transit IP Addresses in a Specified Project

Function

- This API is used to query tags of all transit IP addresses owned by a tenant in a specified project.
- TMS uses this API to list tags of all transit IP addresses owned by a tenant, and provide tag association when you tag or filter transit IP addresses.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/transit-ips/tags

Table 5-143 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**

Request Parameters

Table 5-144 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-145 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
tags	Array of **Tags** objects	Tags Array Length: **1 - 10**

Table 5-146 Tags

Parameter	Type	Description
key	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. Minimum: **1** Maximum: **128**
values	Array of strings	Specifies any tag that is included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **0** Maximum: **255**

Example Requests

```
GET  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/tags
```

Example Responses

Status code: 200

Query operation succeeded.

```
{
  "request_id" : "36479272a29de0be0a8a8b294c02ab7a",
  "tags" : [ {
    "key" : "keys",
    "values" : [ "value" ]
  }, {
    "key" : "key3",
    "values" : [ "value3", "value33" ]
  }, {
    "key" : "key1",
    "values" : [ "value1" ]
  }, {
    "key" : "key2",
    "values" : [ "value2", "value22" ]
  } ]
}
```


Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

5.6.3 Querying Tags of a Transit IP Address

Function

- This API is used to query tags of a specified transit IP address.
- TMS uses this API to query all tags of a specified transit IP address.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/transit-ips/{resource_id}/tags

Table 5-147 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-148 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

Status code: 200

Table 5-149 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Minimum: **1** Maximum: **36**
tags	Array of **Tag** objects	Tags Array Length: **1 - 10**

Table 5-150 Tag

Parameter	Type	Description
key	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**
value	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Example Requests

```
GET  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/b0399473-c352-4d0c-8ff4-cfde719cfde9/tags
```

Example Responses

Status code: 200

Query operation succeeded.

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

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

5.6.4 Adding a Tag to a Transit IP Address

Function

- A transit IP address can have up to 10 tags.
- This API is idempotent.
- If a tag to be created 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}/transit-ips/{resource_id}/tags

Table 5-151 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-152 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-153 Request body parameters

Parameter	Mandatory	Type	Description
tag	Yes	**Tag** object	Specifies tags.

Table 5-154 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Response Parameters

None

Example Requests

Adding a tag to a transit IP address (Setting **key** to **key1** and **value** to **value1**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/56121618-fb0a-4a51-aff0-e2eb9cba4c73/tags

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

Example Responses

None

Status Codes

Status Code	Description
204	Tag added.

Error Codes

See **Error Codes**.

5.6.5 Batch Adding Tags to or Deleting Tags from a Transit IP Address

Function

- This API is used to batch add tags to or delete tags from a specified transit IP address.
- TMS needs to use this API to batch manage tags of a specified transit IP address.
- A transit IP address can have up to 10 tags.

Constraints

This API is idempotent.

- If the request body contains duplicate keys, an error is reported.
- During tag creation, duplicate keys are not allowed. If a key already exists in the database, its value will be overwritten by the new duplicate key.
- During tag deletion, if some tags to be deleted do not exist, the operation is considered to be successful by default. The character set of the tags will not be verified.
- The tags structure cannot be missing during deletion. The key cannot be left blank or be an empty string.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/transit-ips/{resource_id}/tags/action

Table 5-155 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-156 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Table 5-157 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the operation to perform. The value can be: create delete Enumeration values: • **create** • **delete**
tags	Yes	Array of **Tag** objects	Specifies the tags. Array Length: **1 - 10**

Table 5-158 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies any tag that is not included. Each tag can contain a maximum of 10 keys, and each key can contain 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. Minimum: **1** Maximum: **128**
value	Yes	String	Specifies the request ID. Minimum: **0** Maximum: **255**

Response Parameters

None

Example Requests

- Adding tags to a transit IP address (Setting **action** to **create** and adding the following two tags: **key1**, **value1** and **key2**, **value2**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/56121618-fb0a-4a51-aff0-e2eb9cba4c73/tags/action

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

- Deleting tags of a transit IP address (Setting **action** to **delete** and deleting the following two tags: **key1**, **value1** and **key2**, **value2**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/56121618-fb0a-4a51-aff0-e2eb9cba4c73/tags/action
```



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

Example Responses

None

Status Codes

Status Code	Description
204	Tags added or deleted.

Error Codes

See **Error Codes**.

5.6.6 Deleting Tags from a Transit IP Address

Function

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

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/transit-ips/{resource_id}/tags/{key}

Table 5-159 Path Parameters

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Minimum: **1** Maximum: **128**

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. Minimum: **1** Maximum: **32**
resource_id	Yes	String	Specifies the ID of the transit IP address. Minimum: **36** Maximum: **36**

Request Parameters

Table 5-160 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token of a user. It is a response to the API used to obtain the token of a user. This API is the only one that does not require authentication. The value of X-Subject-Token in the response header is the token. Minimum: **1** Maximum: **10240**

Response Parameters

None

Example Requests

This API is used to delete tags from a transit IP address.

```
DELETE https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/56121618-fb0a-4a51-aff0-e2eb9cba4c73/tags/key1
```

Example Responses

None

Status Codes

Status Code	Description
204	Tags deleted.

Error Codes

See **Error Codes**.

6 Common Parameters

6.1 Status Codes

Normal Response Code	Type	Description
200	OK	Specifies the normal response code for the GET and PUT operations.
201	Created	Specifies the normal response code for the POST operation.
204	No Content	Specifies the normal response for the DELETE operation.

Error Response Code	Description
400 Bad Request	The server failed to process the request.
401 Unauthorized	You must enter a 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 cannot be accepted by the client.

Error Response Code	Description
407 Proxy Authentication Required	You must use the proxy server for authentication so that the request can be processed.
408 Request Timeout	The request timed out.
409 Conflict	The request cannot be processed due to a conflict.
500 Internal Server Error	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the server has received an invalid response.
503 Service Unavailable	Failed to complete the request because the system is currently unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

6.2 Error Code Description v2.0

Background Information

- An error code returned by an API does not correspond to one error message. The following table lists only common error messages.
- Most NAT Gateway APIs are asynchronous. Some error codes are displayed in the returned messages for task viewing requests. HTTP status codes may not be accurate.
- The NAT Gateway service is strongly dependent on other services, such as network and storage. When error messages are provided for the NAT Gateway-depended services, contact technical support for troubleshooting.

Error Codes

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
Public	400	VPC.0002	The AZ is left blank.	Available zone Name is null.	Verify whether the **availability_zone** field in the request body for creating a subnet is empty.
	404	VPC.0003	The VPC does not exist.	VPC does not exit.	Check whether the VPC ID is correct or whether the VPC exists under the tenant.
	400	VPC.0004	The status of the VPC is abnormal.	VPC is not active, please try later.	Try again later or contact technical support.
	400	VPC.0007	Inconsistent tenant IDs.	urlTenantId is not equal tokenTenantId	The tenant ID in the URL is different from that parsed in the token.
	401	VPC.0008	Invalid token.	Invalid token in the header.	Check whether the token in the request header is valid.
	401	VPC.0009	Real-name authentication fails.	real-name authentication fail.	Contact technical support.
	403	VPC.2701	You do not have permission to perform this operation, or your account balance is insufficient.	Token not allowed to do this action.	Check whether the account balance is insufficient or whether your account has been frozen.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	403	VPC.0010	Insufficient permissions to make calls to the underlying system.	Rules on xx by ** disallowed by policy	Obtain the required permissions.
	403	VPC.2201	Insufficient fine-grained permissions.	Policy doesn't allow <x:x:x> to be performed	Obtain the required permissions.
	400	VPC.0014	The enterprise project is unavailable.	This enterpriseProject status is disable.	Use the ID of another available enterprise project.
	400	VPC.0011	Invalid enterprise project ID.	EnterpriseProjectId is invalid	Enter a valid enterprise project ID.
	400	VPC.2048	Invalid timestamp.	Invalid value for created_at %(timestamp)s.	Enter the time in the correct format.
	400	VPC.2002	Invalid request parameters.	Invalid parameters.	Enter the correct parameter.
	400	VPC.2010	The default route already exists.	The router %(router_id)s has default route.	The router has a default route. Delete the default route and then create a NAT gateway.
	400	VPC.2011	The router does not exist.	The router %(router_id)s does not exist.	Check whether the entered router ID is correct.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2009	The network does not exist.	Network %(network_id)s does not exist.	Enter a valid network ID.
	400	VPC.2016	The rule has not been deleted.	Rule has not been deleted.	Contact technical support.
	400	VPC.2049	The database is abnormal.	DB Error	Contact technical support.
	400	VPC.2013	The subnet is not connected to the virtual router.	Router %(router)s has no port for subnet %(subnet)s.	Add the subnet to the router port.
	400	VPC.2019	The resource is in use.	Resource %(res_type)s %(res)s is used by %(user_type)s %(user)s	Contact technical support.
	400	VPC.2008	The network does not have any subnet.	Network %(network)s does not contain any IPv4 subnet	Contact technical support.
	400	VPC.2012	The VPC already has a NAT gateway.	The router %(router_id)s already has nat gateway.	Select another VPC.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure

NAT Gateway	400	VPC.2000	NAT gateway request error.	Lack of user authority.
				//request is null.
				//endpoint is empty.
				// resource type is invalid. //create natgateway request is null. //update natgateway request is null
					Contact technical support.

	400	VPC.2030	The system is busy. Please try again later.	The system is busy. Please try again later.	Try again later.

	400	VPC.2001	Incorrect NAT gateway parameter.	Request is invalid. // NatGateway id invalid.
				// the enterprise project id is unsupported.
				// the enterprise project id in request is invalid. // parameter is null.
				// tags is invalid.
				// get natgateways error limit is invalid.
				//get natgateways error marker is invalid.
				//Only admin user can do this action. //Parameters are invalid, check them and try.
					Enter the correct parameter or contact technical support.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2004	The NAT gateway is not activated.	NatGateway %(nat_gateway_id)s is not ACTIVE.	Check the gateway status. If the gateway is not in the running state for a long time, contact technical support.
	400	VPC.2005	The NAT gateway is not in the UP state.	NatGateway %(nat_gateway_id)s is not UP.	The gateway may be frozen due to arrears.
	400	VPC.2006	The NAT gateway is frozen.	NatGateway %(nat_gateway_id)s is frozen.can not update	The gateway may be frozen due to arrears and cannot be updated.
	400	VPC.2007	The NAT gateway does not exist.	NatGateway %(nat_gateway_id)s does not exist.	The NAT gateway does not exist.
	400	VPC.2050	Concurrent operation conflicts.	Concurrent conflict requests found	Contact technical support.
	400	VPC.2051	Failed to create the internal port of the NAT gateway.	Create NG Port failed.	Internal error. Contact technical support.
	400	VPC.2052	Failed to bind the internal port to the NAT gateway.	NG Port %(port)s is unbound.	Internal error. Contact technical support.
	400	VPC.2053	The NAT gateway does not support IPv6.	NatGateway does not support IPv6.	The NAT gateway cannot be bound to an IPv6 EIP.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2045	An error occurred when selecting the gateway node.	Get Nat gateway host failed	Contact technical support.
	400	VPC.2046	Failed to obtain the IP address of the gateway node.	Get Nat gateway agent local_ip failed	Contact technical support.
	400	VPC.2047	Failed to obtain the VPC route table.	Get RouteTable %(router_id)s failed.	Contact technical support.
	400	VPC.2012	The router already has a NAT gateway.	The router %(router_id)s already has nat gateway.	Select a router that has not been bound to a NAT gateway.

SNAT Rule	400	VPC.2014	Incorrect SNAT rule parameter.	Endpoint is null or empty. //Endpoint is Invalid.
				//Request is null. // natGatewayId is invalid. //SnatRule id invalid. // NatGatewayId is invalid.
				//Invalid value for public ip id.
				//Endpoint is null.
				//request is null.
				//Query SnatRules list error marker is invalid.
					Enter the correct parameter or contact technical support.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2031	The CIDR of the SNAT rule conflicts with the network.	Either network_id or cidr must be specified.Both can not be specified at the same time	Do not specify the **Cidr** and **Network_id** fields at the same time when configuring an SNAT rule.
	400	VPC.2032	Invalid CIDR block.	cidr is invalid, make sure it's format is correct.	Enter a valid CIDR block, for example, 192.168.0.0/24.
	400	VPC.2033	Invalid rule type.	source_type and network_id is incompatible.	If the SNAT rule is configured for servers in a VPC, **source_type** is optional or must be set to **0**. If an SNAT rule is configured for an on-premises network connects to the VPC through Direct Connect or CC, **source_type** must be set to **1**.
	400	VPC.2034	The CIDR block must be a subset of the VPC subnet CIDR block.	cidr must be a subset of subnet's cidr.	If an SNAT rule is configured for a VPC, the CIDR block must be the VPC subnet CIDR block. For example, if the subnet is 192.168.0.0/24, the CIDR block can be 192.168.0.0/25.
	400	VPC.2035	The CIDR block conflicts with the subnet CIDR block.	cidr conflicts with subnet's cidr.	If an SNAT rule is configured for a Direct Connect connection, the CIDR block cannot conflict with the VPC subnet CIDR block.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2036	The CIDR block conflicts with the existing one.	cidr in the request conflicts with cidrs of existing rules.	Enter a CIDR block that does not conflict with existing ones.
	400	VPC.2018	The rule already exists.	Snat rule for network % (network)s exists.	Select a subnet that has no SNAT rules configured.
	400	VPC.2042	The EIP has been used by the SNAT rule.	There is a duplicate EIP %(fips)s in SNAT rule.	Select another EIP.
	400	VPC.2044	The public IP address UUID of the SNAT rule is invalid.	Invalid input for floating_ip_id. Reason: \'%(fip)s\' is not a valid UUID.	Enter a valid UUID.
	400	VPC.2040	The public IP address ID of an SNAT rule cannot be a null string.	Invalid value for public ip id.	Enter a valid UUID.
	400	VPC.2039	The number of EIPs associated with the SNAT rule exceeds the upper limit.	%(limit)s EIP has been associated to this SNAT rules' EIP pool, no more is allowed.	The number of EIPs associated with the SNAT rule exceeds the upper limit. For details, see the *NAT Gateway API Reference*.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure

DNAT Rule	400	VPC.2020	Incorrect DNAT rule parameter.	get dnatRules error limit is invalid.
				//get dnatrules error marker is invalid.
				//endpoint is empty.
				//DnatRule id invalid.
				//VPC ID is invalid.
				//Request is null.
				//DnatRule id invalid.
				//DnatRule natGatewayId id invalid.
					Enter the correct parameter or contact technical support.

	400	VPC.2054	Invalid DNAT rule protocol.	Dnat rule protocol %(protocol)s not supported.Only protocol values %(values)s and integer representations [6, 17, 0] are supported.	Configure a valid protocol. The number can be **6**, **17**, or **0**, corresponding to protocols **TCP**, **UDP**, and **ANY**, respectively.
	400	VPC.2069	Invalid DNAT rule port.	Invalid value for port %(port)s	Configure a valid internal port and external port. Supported range: 0 to 65535
	400	VPC.2023	The internal network information of the DNAT rule conflicts with the existing one.	The port_id, private_ip, internal port and protocol specified have been occupied.	Enter the VM port ID, private IP address, or internal port that does not conflict with the existing one.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2024	The external network information of the DNAT rule conflicts with the existing one.	The floating ip, external port and protocol specified have been occupied.	Enter the floating IP address ID, external port, or protocol that does not conflict with the existing one.
	400	VPC.2070	The request information of the DNAT rule is incorrect when **Port Type** is set to **All ports**.	The external port equals 0 and internal port equals 0 and protocol equals any must satisfied at the same time.	Set both the internal port and the external port to **0** and the protocol is **ANY**.
	400	VPC.2027	The port ID of the DNAT rule conflicts with that of an existing DNAT rule.	The port_id already existing dnat allport rules or dnat_rules, can no longer create dnat rules or dnat allport rules.	Change the VM port ID to create or modify the DNAT rule.
	400	VPC.2028	The private IP address of the DNAT rule conflicts with that of an existing DNAT rule.	The private_ip already existing dnat allport rules or dnat rules, can no longer create dnat rules or dnat allport rules.	The private IP address conflicts with the existing DNAT rule. Change the private IP address or modify the DNAT rule.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2029	The DNAT rule has been frozen and cannot be modified.	DNAT rule is frozen, can no longer update.	Check whether the floating IP address bound to the DNAT rule is in arrears or whether the user account is in arrears.
	400	VPC.2038	The maximum number of DNAT rules allowed to be bound has been reached.	%(limit)s DNAT rules has been associated to this NAT Gateway, no more is allowed	The maximum number of DNAT rules allowed to be associated with the NAT gateway has been reached.
	400	VPC.2055	The DNAT rule contains mutually exclusive parameters.	The port_id and private_ip exist at the same time and value is not empty, but at least one value is empty.	The VM port ID and private IP address cannot be configured at the same time.
	400	VPC.2056	The parameters required by the DNAT rule are missing.	The port_id and private_ip values are both empty, at least one value is not empty.	Configure the VM port ID and private IP address.
	400	VPC.2071	Invalid private IP address of the DNAT rule.	The private ip address is not legal.	Configure a valid private IP address.
	400	VPC.2037	This virtual IP address is not supported.	The virtual IP address is not supported.	Configure a valid private IP address.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2026	The maximum number of DNAT rules allowed to be bound has been reached.	%(limit)s DNAT rules has been associated to this Floating IP, no more is allowed	The maximum number of DNAT rules allowed to be associated with a floating IP address has been reached.
	400	VPC.2057	The maximum number of DNAT rules allowed to be created in batches exceeds the upper limit.	batch create dnat rules max limit: %(limit)s	The maximum number of DNAT rules allowed to be created in batches exceeds the upper limit.
	400	VPC.2022	Invalid VM port ID of the DNAT rule.	Port %(port)s is not a valid port.	Configure a valid VM port ID.
	400	VPC.2058	**VtepIp** must be specified.	Vtep_ip is Null.	Contact technical support.
	400	VPC.2075	The description contains more than 255 characters.	Enter a maximum of 255 characters.	Enter a maximum of 255 characters.
EIP	400	VPC.2059	The EIP is frozen.	Floating Ip %(fip)s is frozen.	Select an EIP that has not been frozen.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2060	The EIP has been associated with a port.	Floating Ip %(fip)s has associated with port %(port)s.	Select an EIP that has not been bound to any other object. For example, if an EIP has been bound to an ECS, it cannot be bound to a NAT gateway.
	400	VPC.2061	The EIP has been associated with a NAT gateway.	Floating Ip %(fip)s has used by nat gateway %(nat_gateway)s.	The EIP has been bound to a NAT gateway. Select another one.
	400	VPC.2062	The EIP is in use.	Floating Ip %(fip)s has been occupied.	The EIP has been bound to a NAT gateway. Select another one.
	400	VPC.2074	An EIP cannot be associated with an SNAT rule and a DNAT rule with **Port Type** set to **All ports** at the same time.	Floating Ip %(fip)s can not be associated with both SNAT rule and DNAT all port rule.	Do not associate an EIP with an SNAT rule and a DNAT rule with **Port Type** set to **All ports** at the same time.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.2073	An EIP cannot be associated with a DNAT rule and a DNAT rule with **Port Type** set to **All ports** at the same time.	Floating Ip %(fip)s can not be associated with both DNAT rule and DNAT all port rule.	Do not associate an EIP with a DNAT rule and a DNAT rule with **Port Type** set to **All ports** at the same time.
	400	VPC.2043	The EIP has been associated with a rule.	Floating Ip %(fip)s is used by other rules	Select an EIP that is not in use.

6.3 Error Codes

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0001	Invalid value for created_at %(timestamp)s.	Invalid timestamp.	Make sure that you enter the time in the correct format.
400	NAT.0002	Invalid parameters.	Invalid request parameter.	Check whether the input parameter is correct.
400	NAT.0006	Rule has not been deleted.	NAT gateway deletion failed because its rule has not been deleted.	Check whether there are SNAT or DNAT rules using this NAT gateway.
400	NAT.0007	DB Error	The database is abnormal.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0008	Router %(router)s has no port for subnet %(subnet)s.	The subnet is not connected to the virtual router.	Add the subnet to the router port.
400	NAT.0009	Resource %(res_type)s %(res)s is used by %(user_type)s %(user)s	The resource is in use.	Check whether the resource is in use.
400	NAT.0010	Network %(network)s does not contain any IPv4 subnet	No subnets added in this VPC.	Check whether a subnet is added in this VPC. If no, add one.
400	NAT.0012	The network %(network)s already has nat gateway.	A NAT gateway has been created for this subnet.	Select a subnet for which no NAT gateway has been created.
400	NAT.0014	Invalid input for description.+exceeds maximum length of 255.	description contains more than 255 characters.	Enter a maximum of 255 characters.
400	NAT.0015	Invalid input for name.+exceeds maximum length of 255.	name contains more than 255 characters.	Enter a maximum of 255 characters.
400	NAT.0016	Invalid input for spec. Reason: '*' is not in ['1', '2', '3', '4'].	The value of spec is not 1, 2, 3, or 4.	Set spec to 1, 2, 3, or 4.
400	NAT.0017	Invalid input for router_id. Reason: '********-****-****-****-************' is not a valid UUID.	router_id is an invalid UUID.	Enter a valid router_id.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0018	Invalid input for internal_network_id. Reason: '********-****-****-****-************' is not a valid UUID.	internal_network_id is an invalid UUID.	Enter a valid internal_network_id.
400	NAT.0022	Either network_id or cidr must be specified. Both can not be specified at the same time	The subnet for which the SNAT rule is configured conflicts with the VPC subnet.	Specify either network_id or cidr.
400	NAT.0026	Floating IP ********-****-****-****-************ could not be found.	The ID of the floating IP address is not found.	Check whether the floating IP address ID is correct.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0101	Lack of user authority. // request is null. // endpoint is empty. // resource type is invalid. // create natgateway requset is null. //update natgateway request is null // NatGateway id is invalid. //the enterprise project id is unsupported. //the enterprise project id in request is invalid. // request parameter is null. //tags is invalid. //get natgateways error limit is invalid. //get natgateways error marker is invalid. // Only admin user can do this action. // Parameters are invalid, check them and try.	NAT gateway request error.	Troubleshoot the fault as prompted or contact technical support.
400	NAT.0102	The system is busy. Please try again later.	The system is busy. Please try again later.	Try again later.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0103	NatGateway %(nat_gateway_id)s is not ACTIVE.	The NAT gateway is not activated.	If the NAT gateway is not in the running state for a long time, contact technical support.
400	NAT.0104	NatGateway %(nat_gateway_id)s is not UP. // NatGateway %(nat_gateway_id)s is frozen.can not update.	The NAT gateway is frozen.	Check the NAT gateway status. The gateway may be frozen due to arrears and cannot be updated.
400	NAT.0106	Concurrent conflict requests found	Concurrent operations on the NAT gateway conflict.	Contact technical support.
400	NAT.0107	Create NG Port failed.	Failed to create the internal port of the NAT gateway.	Contact technical support.
400	NAT.0108	NG Port %(port)s is unbound.	Failed to bind the internal port to the NAT gateway.	Contact technical support.
400	NAT.0109	NatGateway does not support IPv6.	NAT Gateway does not support IPv6 EIPs.	Bind an IPv4 EIP.
400	NAT.0110	Get Nat gateway host failed	Failed to select the gateway node.	Contact technical support.
400	NAT.0111	Get Nat gateway agent local_ip failed	Failed to obtain the gateway node IP address.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0112	Get RouteTable %(router_id)s failed.	Failed to obtain the Virtual Private Cloud (VPC) route table.	Contact technical support.
400	NAT.0113	%(limit)s NAT gateways has been created to this VPC, no more is allowed	The maximum number of NAT gateways has been reached.	Create a NAT gateway in another VPC or delete existing NAT gateways in this VPC.
400	NAT.0201	Endpoint is null or empty. // Endpoint is Invalid. // Request is null. // natGatewayId is invalid. // SnatRule id invalid. // NatGatewayId is invalid. // Invalid value for public ip id. //Endpoint is null. // request is null. //Query SnatRules list error marker is invalid.	Incorrect SNAT rule parameter.	Check whether the SNAT rule is correctly configured or contact technical support.
400	NAT.0202	Either network_id or cidr must be specified.Both can not be specified at the same time	The subnet for which the SNAT rule is configured conflicts with the VPC subnet.	Do not configure both Cidr and Network_id when you are configuring an SNAT rule.
400	NAT.0203	cidr is invalid, make sure it's format is correct.	Invalid CIDR block.	Enter a valid CIDR block, for example, 192.168.0.0/24.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0204	source_type and network_id is incompatible.	Invalid SNAT rule type.	If the SNAT rule is configured for servers in a VPC, Source_Type is optional or must be set to 0.
400	NAT.0205	cidr must be a subset of subnet's cidr.	The CIDR block is not a subset of the VPC subnet.	Enter a subset of the subnet CIDR block. For example, if the subnet is 192.168.0.0/24, cidr can be 192.168.0.0/25.
400	NAT.0206	cidr conflicts with subnet's cidr.	The CIDR block of the SNAT rule conflicts with the subnet CIDR block.	If the SNAT rule is configured for subnets connected to a VPC through Direct Connect or Cloud Connect, the CIDR block cannot conflict with the VPC subnet CIDR block.
400	NAT.0207	cidr in the request conflicts with cidrs of existing rules.	The CIDR block conflicts with the existing one.	Enter a CIDR block that does not conflict with existing ones.
400	NAT.0208	Snat rule for network %(network)s exists.	The rule already exists.	Select a subnet that has no SNAT rules configured.
400	NAT.0210	Invalid input for floating_ip_id. Reason: \'%(fip)s\' is not a valid UUID. // Invalid value for public ip id.	The public IP address UUID of the SNAT rule is invalid.	Enter a valid UUID.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0211	%(limit)s EIP has been associated to this SNAT rules's EIP pool, no more is allowed.	The maximum number of EIPs that can be bound to the SNAT rule has been reached.	Ensure that the number of EIPs does not exceed the maximum number allowed.
400	NAT.0212	SNAT Rule %(rule)s Associated or disassociate EIP %(fip)s Failed."	Failed to bind the EIP to or unbind the EIP from the SNAT rule.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0301	get dnatRules error limit is invalid. //get dnatrules error marker is invalid. // endpoint is empty. // DnatRule id invalid. //VPC ID is invalid. // Request is null. // DnatRule id invalid. // internal_service_port_range' out of range(1-65535). // internal_service_port_range': invalid format. // internal_service_port_range': param is null. //'internal_service_port_range' and 'external_service_port_range' must be equal. //for non-all port rule,the protocol can not be any. // param xxx is null in request body.	Incorrect DNAT rule parameter.	Check whether the DNAT rule is correctly configured or contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0302	Dnat rule protocol % (protocol)s not supported.Only protocol values % (values)s and integer representations [6, 17, 0] are supported.	Invalid DNAT rule protocol.	Configure a valid protocol. The number can be 6, 17, or 0, corresponding to protocols TCP, UDP, and ANY, respectively.
400	NAT.0303	Invalid value for port % (port)s	Invalid port in the DNAT rule.	Configure a valid internal port and external port. Supported range: 0 to 65535
400	NAT.0304	The port_id, private_ip, internal port and protocol specified have been occupied.	The internal network information in this DNAT rule conflicts with that in existing DNAT rules.	Enter a VM port ID, or private IP address and internal port, that does not conflict with existing DNAT rules.
400	NAT.0305	The floating ip, external port and protocol specified have been occupied.	The external network information in this DNAT rule conflicts with that in existing DNAT rules.	Enter a floating IP address ID, external port number, and protocol that do not conflict with those in existing DNAT rules.
400	NAT.0306	The external port equals 0 and internal port equals 0 and protocol equals any must satisfied at the same time.	Incorrect request for the DNAT rule.	Set both the internal port and external port to 0 and protocol to ANY to make the configurations take effect.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0307	The port_id already existing dnat allport rules or dnat_rules, can no longer create dnat rules or dnat allport rules.	The port ID in this DNAT rule conflicts with that in an existing DNAT rule.	Change the VM port ID to create a new DNAT rule or modify this DNAT rule.
400	NAT.0308	The private_ip already existing dnat allport rules or dnat rules, can no longer create dnat rules or dnat allport rules.	The private IP address configured in the DNAT rule conflicts with that in an existing DNAT rule.	Change the private IP address or modify this DNAT rule.
400	NAT.0309	%(limit)s DNAT rules has been associated to this NAT Gateway, no more is allowed	The maximum number of DNAT rules has been reached.	Ensure that the number of DNAT rules added to the NAT gateway is within the upper limit.
400	NAT.0310	The port_id and private_ip values are both empty, at least one value is not empty.	Some parameters of this DNAT rule are not configured.	Check whether port_id and private_ip are configured. If no, configure at least one of them.
400	NAT.0311	The private ip address is not legal.	Invalid private IP address in the DNAT rule.	Configure a valid private IP address.
400	NAT.0312	The virtual IP address is not supported.	Virtual IP addresses are not supported.	Configure a valid private IP address.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0313	%(limit)s DNAT rules has been associated to this Floating IP, no more is allowed	The maximum number of DNAT rules has been reached.	The maximum number of DNAT rules that are allowed to have the same floating IP address bound has been reached.
400	NAT.0314	batch create dnat rules max limit: %(limit)s	The maximum number of DNAT rules that can be added in batches has been reached.	Reduce the number of DNAT rules and then add them in batches.
400	NAT.0315	Port %(port)s is not a valid port.	Invalid VM port ID in the DNAT rule.	Configure a valid VM port ID.
400	NAT.0316	Vtep_ip is Null.	VtepIp must be specified.	Delete this DNAT rule and create a new one, or contact technical support.
400	NAT.0317	The port_id and private_ip exist at the same time and value is not empty, but at least one value is empty.	The DNAT rule contains mutually exclusive parameters.	Configure either port_id or private_ip.
400	NAT.0318	DNAT rule is frozen, can no longer update.	The DNAT rule has been frozen and cannot be updated.	Check whether the floating IP address bound to the DNAT rule is in arrears or whether the user account is in arrears.
400	NAT.0401	Floating Ip %(fip)s is freezed.	The EIP is frozen.	Select an EIP that is not frozen.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0402	Floating Ip %(fip)s has associated with port %(port)s.	The EIP has been bound to a port.	Select an EIP that has not been bound to any resource. For example, if an EIP has been bound to an ECS, it cannot be bound to a NAT gateway.
400	NAT.0403	There is a duplicate EIP %(fips)s in SNAT rule.	The EIP has been used by an SNAT rule.	Select another EIP.
400	NAT.0404	Floating Ip %(fip)s has used by nat gateway %(nat_gateway)s.	The EIP has been bound to a NAT gateway.	Select another EIP.
400	NAT.0405	Floating Ip %(fip)s has been occupied.	The EIP is in use.	Select another EIP.
400	NAT.0407	Floating Ip %(fip)s is used by other rules	The EIP has been bound to a rule.	Select an EIP that is not in use.
400	NAT.0408	Floating Ip %(fip)s can not be associated with both DNAT rule and DNAT all port rule.	A DNAT rule cannot share an EIP with another DNAT rule in which mapping to a specific port is not set.	Select another EIP.
400	NAT.0409	Floating Ip %(fip)s can not be associated with both SNAT rule and DNAT all port rule.	An SNAT rule cannot share an EIP with a DNAT rule in which mapping to a specific port is not set.	Select another EIP.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.0410	Invalid value of the FloatIP.	Invalid floating IP address.	Enter a valid floating IP address.
400	VPC.0002	Available zone Name is null.	The AZ is left blank.	Check whether availability_zone in the request body for creating a subnet is left blank.
400	VPC.0004	VPC does not active, please try later.	The VPC status is abnormal.	Try again later or contact technical support.
400	VPC.0007	urlTenantId is not equal tokenTenantId	The tenant ID in the URL is different from that parsed in the token.	Contact technical support.
400	VPC.0011	EnterpriseProjectId is invalid	Invalid enterprise project ID.	Enter a valid enterprise project ID.
400	VPC.0014	This enterpriseProject status is disable.	Unavailable enterprise project.	Use the ID of an available enterprise project.
400	VPC.2000	Lack of user authority. // request is null. // endpoint is empty. // resource type is invalid. // create natgateway requset is null. //update natgateway request is null.	NAT gateway request error.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2001	NatGateway id is invalid. //the enterprise project id in request is invalid. // request parameter is null. //tags is invalid. //get natgateways error limit is invalid. //get natgateways error marker is invalid. // Only admin user can do this action. // Parameters are invalid, check them and try.	Incorrect NAT gateway parameter.	Check whether the NAT gateway is correctly configured or contact technical support.
400	VPC.2002	Invalid parameters.	Invalid request parameter.	Check whether the input parameter is correct.
400	VPC.2004	NatGateway %(nat_gateway_id)s is not ACTIVE.	The NAT gateway is not activated.	If the NAT gateway is not in the running state for a long time, contact technical support.
400	VPC.2005	NatGateway %(nat_gateway_id)s is not UP.	The NAT gateway is not in the UP state.	Check whether the gateway has been frozen due to arrears or other reasons.
400	VPC.2006	NatGateway %(nat_gateway_id)s is frozen.can not update	The NAT gateway is frozen.	Check whether the gateway is frozen due to arrears. If yes, it cannot be updated.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2007	NatGateway %(nat_gateway_id)s does not exist.	The NAT gateway is not found.	Check whether the NAT gateway ID is correct.
400	VPC.2008	Network %(network)s does not contain any IPv4 subnet	No subnets added in this VPC.	Contact technical support.
400	VPC.2009	Network %(network_id)s does not exist.	The subnet is not found.	Enter a valid subnet.
400	VPC.2010	The router %(router_id)s has default route.	The default route already exists.	Delete the default route and then create a NAT gateway.
400	VPC.2011	The router %(router_id)s does not exist.	The router is not found.	Check whether the entered router ID is correct.
400	VPC.2012	The router %(router_id)s already has nat gateway.	The VPC already has a NAT gateway.	Select another VPC.
400	VPC.2013	Router %(router)s has no port for subnet %(subnet)s.	The subnet is not connected to the virtual router.	Add the subnet to the router port.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2014	Endpoint is null or empty. // Endpoint is Invalid. // Request is null. // natGatewayId is invalid. // SnatRule id invalid. // NatGatewayId is invalid. // Invalid value for public ip id. //Endpoint is null. // request is null. //Query SnatRules list error marker is invalid.	Incorrect SNAT rule parameter.	Check whether the SNAT rule is correctly configured or contact technical support.
400	VPC.2016	Rule has not been deleted.	NAT gateway deletion failed because its rule has not been deleted.	Contact technical support.
400	VPC.2018	Snat rule for network %(network)s exists.	The rule already exists.	Select a subnet that has no SNAT rules configured.
400	VPC.2019	Resource %(res_type)s %(res)s is used by %(user_type)s %(user)s	The resource is in use.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2020	get dnatRules error limit is invalid. //get dnatrules error marker is invalid. // endpoint is empty. // DnatRule id invalid. // Request is null. // DnatRule id invalid. // DnatRule natGatewayId id invalid.	Incorrect DNAT rule parameter.	Check whether the DNAT rule is correctly configured or contact technical support.
400	VPC.2022	Port %(port)s is not a valid port.	Invalid VM port ID in the DNAT rule.	Configure a valid VM port ID.
400	VPC.2023	The port_id, private_ip, internal port and protocol specified have been occupied.	The internal network information in this DNAT rule conflicts with that in existing DNAT rules.	Enter a VM port ID, or private IP address and internal port, that does not conflict with existing DNAT rules.
400	VPC.2024	The floating ip, external port and protocol specified have been occupied.	The external network information in this DNAT rule conflicts with that in existing DNAT rules.	Enter a floating IP address ID, external port number, and protocol that do not conflict with those in existing DNAT rules.
400	VPC.2026	%(limit)s DNAT rules has been associated to this Floating IP, no more is allowed	The maximum number of DNAT rules that are allowed to have the same floating IP address bound has been reached.	Reduce the number of DNAT rules.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2027	The port_id already existing dnat allport rules or dnat_rules, can no longer create dnat rules or dnat allport rules.	The port ID in this DNAT rule conflicts with that in an existing DNAT rule.	Change the VM port ID to create a new DNAT rule or modify this DNAT rule.
400	VPC.2028	The private_ip already existing dnat allport rules or dnat rules, can no longer create dnat rules or dnat allport rules.	The private IP address configured in the DNAT rule conflicts with that in an existing DNAT rule.	Change the private IP address or modify this DNAT rule.
400	VPC.2029	DNAT rule is frozen, can no longer update.	The DNAT rule has been frozen and cannot be updated.	Check whether the floating IP address bound to the DNAT rule is in arrears or whether the user account is in arrears.
400	VPC.2030	The system is busy. Please try again later.	The system is busy. Please try again later.	Try again later.
400	VPC.2031	Either network_id or cidr must be specified.Both can not be specified at the same time	The subnet for which the SNAT rule is configured conflicts with the VPC subnet.	Do not configure both Cidr and Network_id when you are configuring an SNAT rule.
400	VPC.2032	cidr is invalid, make sure it's format is correct.	Invalid CIDR block.	Enter a valid CIDR block, for example, 192.168.0.0/24.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2033	source_type and network_id is incompatible.	Invalid SNAT rule type.	If the SNAT rule is configured for servers in a VPC, Source_Type is optional or must be set to 0. If the SNAT rule is configured for servers in your on-premises data centers that are connected to a VPC through Direct Connect or your servers in another VPC, Source_Type must be set to 1.
400	VPC.2034	cidr must be a subset of subnet's cidr.	The CIDR block is not a subset of the VPC subnet.	Enter a subset of the subnet CIDR block. For example, if the subnet is 192.168.0.0/24, cidr can be 192.168.0.0/25.
400	VPC.2035	cidr conflicts with subnet's cidr.	The CIDR block of the SNAT rule conflicts with the subnet CIDR block.	If the SNAT rule is configured for subnets connected to a VPC through Direct Connect or Cloud Connect, the CIDR block cannot conflict with the VPC subnet CIDR block.
400	VPC.2036	cidr in the request conflicts with cidrs of existing rules.	The CIDR block conflicts with the existing one.	Enter a CIDR block that does not conflict with existing ones.
400	VPC.2037	The virtual IP address is not supported.	Virtual IP addresses are not supported.	Configure a valid private IP address.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2038	%(limit)s DNAT rules has been associated to this NAT Gateway, no more is allowed	The maximum number of DNAT rules has been reached.	Delete some DNAT rules.
400	VPC.2039	%(limit)s EIP has been associated to this SNAT rules's EIP pool, no more is allowed.	The maximum number of EIPs bound to the SNAT rule has been reached.	Reduce the number of EIPs.
400	VPC.2040	Invalid value for public ip id.	The public IP address ID of an SNAT rule cannot be left blank.	Enter a valid UUID.
400	VPC.2042	There is a duplicate EIP %(fips)s in SNAT rule.	The EIP has been used by an SNAT rule.	Select another EIP.
400	VPC.2043	Floating Ip %(fip)s is used by other rules	The EIP has been bound to a rule.	Select another EIP.
400	VPC.2044	Invalid input for floating_ip_id. Reason: \'%(fip)s\' is not a valid UUID.	The public IP address UUID of the SNAT rule is invalid.	Enter a valid UUID.
400	VPC.2045	Get Nat gateway host failed	Failed to select the gateway node.	Contact technical support.
400	VPC.2046	Get Nat gateway agent local_ip failed	Failed to obtain the gateway node IP address.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2047	Get RouteTable %(router_id)s failed.	Failed to obtain the VPC route table.	Contact technical support.
400	VPC.2048	Invalid value for created_at %(timestamp)s.	Invalid timestamp.	Make sure that you enter the time in the correct format.
400	VPC.2049	DB Error	The database is abnormal.	Contact technical support.
400	VPC.2050	Concurrent conflict requests found	Concurrent operations on the NAT gateway conflict.	Contact technical support.
400	VPC.2051	Create NG Port failed.	Failed to create the internal port of the NAT gateway.	Contact technical support.
400	VPC.2052	NG Port %(port)s is unbound.	Failed to bind the internal port to the NAT gateway.	Contact technical support.
400	VPC.2053	NatGateway does not support IPv6.	NAT Gateway does not support IPv6 EIPs.	Bind an IPv4 EIP.
400	VPC.2054	Dnat rule protocol %(protocol)s not supported.Only protocol values %(values)s and integer representations [6, 17, 0] are supported.	Invalid DNAT rule protocol.	Configure a valid protocol. The number can be 6, 17, or 0, corresponding to protocols TCP, UDP, and ANY, respectively.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2055	The port_id and private_ip exist at the same time and value is not empty, but at least one value is empty.	The DNAT rule contains mutually exclusive parameters.	Configure either port_id or private_ip.
400	VPC.2056	The port_id and private_ip values are both empty, at least one value is not empty.	Some parameters of this DNAT rule are not configured.	Check whether port_id and private_ip are configured. If no, configure at least one of them.
400	VPC.2057	batch create dnat rules max limit: %(limit)s	The maximum number of DNAT rules allowed to be added in batches has been exceeded.	Reduce the number of DNAT rules for batch addition.
400	VPC.2058	Vtep_ip is Null.	VtepIp must be specified.	Contact technical support.
400	VPC.2059	Floating Ip %(fip)s is freezed.	The EIP is frozen.	Select an EIP that is not frozen.
400	VPC.2060	Floating Ip %(fip)s has associated with port %(port)s.	The EIP has been bound to a port.	Select an EIP that has not been bound to any resource. For example, if an EIP has been bound to an ECS, it cannot be bound to a NAT gateway.
400	VPC.2061	Floating Ip %(fip)s has used by nat gateway %(nat_gateway)s.	The EIP has been bound to a NAT gateway.	Select another EIP.

Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2062	Floating Ip % (fip)s has been occupied.	The EIP is in use.	Select another EIP.
400	VPC.2069	Invalid value for port % (port)s	Invalid port in the DNAT rule.	Configure a valid internal port and external port. Supported range: 0 to 65535
400	VPC.2070	The external port equals 0 and internal port equals 0 and protocol equals any must satisfied at the same time.	Incorrect request for the DNAT rule.	Set the private port number and public port number to 0 and Protocol to Any.
400	VPC.2071	The private ip address is not legal.	Invalid private IP address in the DNAT rule.	Configure a valid private IP address.
400	VPC.2073	Floating Ip % (fip)s can not be associated with both DNAT rule and DNAT all port rule.	A DNAT rule cannot share an EIP with another DNAT rule in which mapping to a specific port is not set.	Select another EIP.
400	VPC.2074	Floating Ip % (fip)s can not be associated with both SNAT rule and DNAT all port rule.	An SNAT rule cannot share an EIP with another DNAT rule in which mapping to a specific port is not set.	Select another EIP.
400	VPC.2075	Enter a maximum of 255 characters.	The description contains more than 255 characters.	Enter a maximum of 255 characters.

Status Code	Error Codes	Error Message	Description	Solution
400/404	NAT.0105	NatGateway % (nat_gateway _id)s does not exist.	The NAT gateway is not found. (HTTP status code 400 indicates that the gateway to be deleted is not found. HTTP status code 404 indicates that the gateway that you created or queried is not found.)	Check whether the NAT gateway ID is available.
401	NAT.0025	Token is expired.	Token expired.	Check whether the token is within the validity period.
401	VPC.0008	Invalid token in the header.	Invalid token.	Check whether the token in the request header is valid.
401	VPC.0009	real-name authenticatio n fail.	Real-name authenticatio n failed.	Contact technical support.
403	VPC.0010	Rules on xx by ** disallowed by policy	Insufficient permissions to call the underlying system.	Obtain required permissions.
403	VPC.2201	Policy doesn't allow <x:x:x> to be performed	Insufficient fine-grained permissions.	Obtain required permissions.

Status Code	Error Codes	Error Message	Description	Solution
403	VPC.2701	Token not allowed to do this action.	You do not have permissions to perform this operation, or your account balance is insufficient.	Check whether your account balance is insufficient or whether your account has been frozen.
404	NAT.0004	The router %(router_id)s does not exist.	The router is not found.	Check whether the entered router ID is correct.
404	NAT.0005	Network %(network_id)s does not exist.	The subnet is not found.	Enter a valid subnet.
404	NAT.0013	Router %(router)s for the specified NAT gateway could not be found.	The route for the specified NAT gateway is not found.	Create a route for the specified NAT gateway.
404	NAT.0019	Network ********-****-****-****-************ could not be found.	The subnet ID is not found.	Check whether the subnet ID is available.
404	NAT.0020	Specifying 'tenant_id' other than authenticated tenant in request requires admin privileges	tenant_id is left blank or not found.	Check whether the tenant ID is available.

Status Code	Error Codes	Error Message	Description	Solution
404	NAT.0021	Invalid input for nat_gateway_id. Reason: '********-****-****-****-************'is not a valid UUID.	Nat_gateway_id is left blank or not found.	Check whether the NAT gateway ID is available.
404	NAT.0023	Port '********-****-****-****-************' could not be found.	The port ID is not found.	Check whether the port ID is available.
404	NAT.0024	Invalid input for floating_ip_id. Reason: '********-****-****-****-************'is not a valid UUID.	Floating_ip_id is left blank, not found, or is invalid.	Check whether the floating IP address ID is correct.
404	NAT.0209	No Snat Rule exist with id %(id)s	The SNAT rule is not found.	Check whether the SNAT rule ID is available.
404	NAT.0319	No Dnat Rule exist with id %(id)s	The DNAT rule is not found.	Contact technical support.
404	VPC.0003	VPC does not exit.	The VPC is not found.	Check whether the VPC ID is valid or whether the VPC is available.
400	NAT.1010	Request parameter Json parsing failed %s.	Parsing JSON request failed.	Check whether the request parameters are in the correct format.
400	NAT.1015	Tags parameter is illegal.	Invalid tag.	Enter a valid tag value.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1016	The number of tags exceeds the limit %s.	The maximum number of tags has been reached.	Add up to %s tags.
400	NAT.1022	Account is restricted, operation is forbidden.	The private NAT gateway cannot be created because your account has been suspended.	Check whether your account is suspended and contact technical support.
400	NAT.1023	Account is suspended, operation is forbidden.	The private NAT gateway cannot be created because your account has been frozen.	Check whether your account is frozen and contact technical support.
400	NAT.1101	Transit subnet can not be create with this network %s. //External subnet can not be create with this network %s.	The subnet where the transit IP address is located is unavailable.	Contact technical support.
400	NAT.1201	%s downlink vpc has been associated to this private nat gateway, no more is allowed.	Only one downlink_vpc can be entered.	Enter only one downlink_vpc.
400	NAT.1202	There are one or more rules still in use on the gateway %s, can not be deleted.	The private NAT gateway cannot be deleted because it has rules.	Delete a private NAT gateway after deleting all its rules.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1204	This vpc at most have %s private nat gateway.	The maximum number of private NAT gateways in the VPC has been reached.	Use another VPC or delete other private NAT gateways in this VPC.
400	NAT.1206	Update (%s) spec to (%s) are the same as the original.	The private NAT gateway can be updated only to different specifications.	Update the private NAT gateway to different specifications.
400	NAT.1207	Gateway %s already has %d rules, the maximum number of rule for spec %s is %d. Downgrade is forbidden. //Add this gateway rule over rule max %d.	The maximum number of rules that can be added on the private NAT gateway of the new specifications has been exceeded, so the gateway specifications cannot be updated. The maximum number of NAT gateway rules has been reached. No more rules can be created.	Ensure that the number of rules added on the private NAT gateway does not exceed the maximum number of rules after the update. Delete some rules or update the private NAT gateway to more robust specifications.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1208	Gateway %s is frozen, create operation is forbidden. // Gateway %s is frozen, delete operation is forbidden. // Gateway %s is frozen, update operation is forbidden.	Operation not allowed. The private NAT gateway has been frozen.	Check whether your private NAT gateway is frozen and contact technical support.
400	NAT.1306	dnat Parameters entered are illegal, protocol:any should be entered with internal_service_port:0 and transit_service_port:0 together. // dnat Parameters entered are illegal, protocol:any should be entered with internal_service_port:0 and external_service_port:0 together.	Invalid parameters in the request body of the DNAT rule.	Set protocol to any, internal_service_port to 0, and transit_service_port to 0.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1311	The networkInterfaceId(port_id) and private_ip_address(fixed_ip_address) exist at the same time or both are empty, but at least one value is empty.	Either network_interface_id or private_ip_address must be specified.	Specify network_interface_id or private_ip_address.
400	NAT.1404	No more IP addresses available on subnet %s.	There are no available IP addresses in the subnet.	Contact technical support.
400	NAT.1405	IP address %s is not a valid IP for the subnet.	Invalid IP address in the subnet.	Contact technical support.
400	NAT.1501	Either virSubnet(network) or cidr must be specified." + "Both can not be specified at the same time.	Either virsubnet_id or cidr must be specified.	Specify virsubnet_id or cidr.
400	NAT.1502	Cidr is invalid, make sure it's format is correct.	Invalid cidr.	Enter a valid CIDR block, for example, 192.168.0.0/24.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1506	%s transit ip has been associated to this SNAT rules's transit ip pool, no more is allowed. //%s external ip has been associated to this SNAT rules's external ip pool, no more is allowed.	The maximum number of transit IP addresses that can be selected for the SNAT rule has been exceeded.	Enter only one transit IP address.
400	NAT.1507	'transit_ip_id' attribute value should be 'uuid' type! //'external_ip_id' attribute value should be 'uuid' type!	Invalid transit_ip_id.	Enter the transit_ip_id value in UUID format.
404	NAT.1002	%s %s could not be found.	The resource is not found.	Check whether the resource is available or contact technical support.
404	NAT.1003	VirSubnet %s could not be found in vpc for gateway %s.	The subnet for which the SNAT rule is configured is not in the VPC of the private NAT gateway.	Ensure that the subnet for which the SNAT rule is configured is in the VPC of the private NAT gateway.
404	NAT.1009	Port %s information is missing.	Port information is missing.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
409	NAT.1303	Transit ip %s is in this vpc, not support to specified. // External ip %s is in this vpc, not support to specified.	The VPC of the transit IP address must be different from that of the private NAT gateway.	Use a transit IP address that is in a different VPC of the private NAT gateway.
409	NAT.1304	Port %s is not in this vpc, not support to specified.	The port for which the DNAT rule is configured is not in the VPC of the private NAT gateway.	Ensure that the port for which the DNAT rule is configured is in the VPC of the private NAT gateway.
409	NAT.1305	Transit ip %s is used by exist dnat rule. // External ip %s is used by exist dnat rule.	The transit IP address is already used by a DNAT rule.	Use a transit IP address that is not used by any DNAT rule.
409	NAT.1307	Internal parameters entered conflict with exist dnat rules. // PrivateIp(FixedIp) %s is used by exist dnat rule.	The internal network information in this DNAT rule conflicts with that in existing DNAT rules.	Use a port, private IP address, backend port, and protocol that do not conflict with those of existing DNAT rules.
409	NAT.1308	Transit ip %s is used by exist snat rule. // External ip %s is used by exist snat rule.	The transit IP address is already used by an SNAT rule.	Use a transit IP address that is not used by any SNAT rule.

Status Code	Error Codes	Error Message	Description	Solution
409	NAT.1309	Port %s is used by exist dnat rule.	The port is being used by a DNAT rule of another protocol type.	Use a port that is not used by DNAT rules of another protocol type.
409	NAT.1310	Transit parameters entered conflict with exist dnat rules. // External parameters entered conflict with exist dnat rules.	The external network information in this DNAT rule conflicts with the existing one.	Use a transit IP address, port number, and protocol that do not conflict with those in existing DNAT rules.
409	NAT.1403	Unable to complete operation for subnet %s. The IP address %s is in use.	This IP address is already in use.	Contact technical support.
409	NAT.1406	Transit ip %s has used by private nat gateway %s. //External ip %s has used by private nat gateway %s.	The transit IP address has been used by another private NAT gateway.	Use a transit IP address that is not used by other private NAT gateways.
409	NAT.1409	Transit ip %s is used by rules. // External ip %s is used by rules.	The transit IP address is used by a rule.	Ensure that the transit IP address is not used by other rules before deleting it.

Status Code	Error Codes	Error Message	Description	Solution
409	NAT.1410	Transit ip %s is used by dnat rules of other protocols. // External ip %s is used by dnat rules of other protocols.	The transit IP address is being used by a DNAT rule of another protocol type.	Use a transit IP address that is not used by DNAT rules of another protocol type.
409	NAT.1503	Snat rule for network %s exists.	An SNAT rule has been configured for this subnet.	Select a subnet that has no SNAT rules configured.
409	NAT.1505	Snat rule for cidr %s exists.	An SNAT rule has been configured for this CIDR block.	Enter a CIDR block that does not conflict with existing ones.
500	NAT.1001	Internal Server Error.	Internal service error.	Contact technical support.
500	NAT.1004	Create Port Failed with subnet %s.	Failed to create the port in the subnet.	Contact technical support.
500	NAT.1005	Delete Port %s Failed.	Port deletion failed.	Contact technical support.

6.4 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": ""
      },
      ...
  ]
}
```

6.5 Resource Status Description

Table 6-1 Resource status description

Status	Description
ACTIVE	The resource status is normal.
PENDING_CREATE	The resource is being created.
PENDING_UPDATE	The resource is being updated.
PENDING_DELETE	The resource is being deleted.
EIP_FREEZED	The EIP of the resource is frozen.
INACTIVE	The resource status is abnormal.

A Change History

Released On	What's New
2020-01-02	This issue is the first official release.

