

NAT Gateway

API Reference

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Contents

1	1
2 API Overview	4
3 Calling APIs	8
3.1 Making an API Request	8
3.2 Authentication	12
3.3 Response	13
4 APIs of Public NAT Gateways	16
4.1 Public NAT Gateways	16
4.1.1 Querying Public NAT Gateways	16
4.1.2 Creating a Public NAT Gateway	24
4.1.3 Deleting a Public NAT Gateway	31
4.1.4 Updating a Public NAT Gateway	32
4.1.5 Querying Details of a Public NAT Gateway	38
4.2 DNAT Rules	43
4.2.1 Querying DNAT Rules	43
4.2.2 Creating a DNAT Rule	50
4.2.3 Deleting a DNAT Rule	56
4.2.4 Updating a DNAT Rule	57
4.2.5 Querying Details of a DNAT Rule	64
4.2.6 Creating DNAT Rules in Batches	68
4.3 SNAT Rules	74
4.3.1 Querying SNAT Rules	74
4.3.2 Creating an SNAT Rule	81
4.3.3 Updating an SNAT Rule	85
4.3.4 Querying Details of an SNAT Rule	89
4.3.5 Deleting an SNAT Rule	93
5 APIs for Private NAT Gateways	95
5.1 Private NAT Gateways	95
5.1.1 Querying Private NAT Gateways	95
5.1.2 Updating a Private NAT Gateway	101
5.1.3 Deleting a Private NAT Gateway	106
5.1.4 Creating a Private NAT Gateway	107

5.1.5 Querying Details About a Specified Private NAT Gateway.....	113
5.2 DNAT Rules.....	117
5.2.1 Querying DNAT Rules.....	117
5.2.2 Updating a DNAT Rule.....	123
5.2.3 Creating a DNAT Rule.....	128
5.2.4 Deleting a DNAT Rule.....	133
5.2.5 Querying Details About a Specified DNAT Rule.....	134
5.3 SNAT Rules.....	138
5.3.1 Querying SNAT Rules.....	138
5.3.2 Querying Details About a Specified SNAT Rule.....	143
5.3.3 Updating an SNAT Rule.....	146
5.3.4 Creating an SNAT Rule.....	149
5.3.5 Deleting an SNAT Rule.....	154
5.4 Transit IP Addresses.....	155
5.4.1 Querying Transit IP Addresses.....	155
5.4.2 Releasing a Transit IP Address.....	160
5.4.3 Assigning a Transit IP Address.....	161
5.4.4 Querying Details About a Specified Transit IP Address.....	165
5.5 Private NAT Gateway Tags.....	168
5.5.1 Querying Private NAT Gateways.....	168
5.5.2 Querying Tags of All Private NAT Gateways in a Project.....	176
5.5.3 Querying Tags of a Private NAT Gateway.....	178
5.5.4 Adding a Tag to a Private NAT Gateway.....	180
5.5.5 Batch Adding or Deleting Tags to or from a Private NAT Gateway.....	182
5.5.6 Deleting a Tag from a Private NAT Gateway.....	185
5.6 Transit IP Address Tags.....	186
5.6.1 Querying Transit IP Addresses by Tag.....	186
5.6.2 Querying Tags of All Transit IP Addresses in a Specified Project.....	194
5.6.3 Querying Tags of a Transit IP Address.....	196
5.6.4 Adding a Tag to a Transit IP Address.....	198
5.6.5 Batch Adding or Deleting Tags to or from a Transit IP Address.....	200
5.6.6 Deleting a Tag from a Transit IP Address.....	203
6 Permissions Policies and Supported Actions.....	205
6.1 Introduction.....	205
6.2 Public NAT Gateways.....	206
6.3 SNAT Rules of Public NAT Gateways.....	207
6.4 DNAT Rules of Public NAT Gateways.....	207
7 Appendixes.....	209
7.1 Error Codes.....	209
7.2 Status Codes.....	242
7.3 Obtaining a Project ID.....	244

7.4 Resource Status Description..... 245

1

Welcome to *NAT Gateway API Reference*. The NAT Gateway service provides the network address translation (NAT) function for Elastic Cloud Servers (ECSs) and Bare Metal Servers (BMSs) in a Virtual Private Cloud (VPC). It also supports this function for your on-premises servers that connect to a VPC through Direct Connect or Virtual Private Network (VPN). It allows these servers to access the Internet using Elastic IPs (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](#).

API Calling

Welcome to *NAT Gateway API Reference*. The NAT Gateway service provides the network address translation (NAT) function for Elastic Cloud Servers (ECSs) and Bare Metal Servers (BMSs) in a Virtual Private Cloud (VPC). It also supports this function for your on-premises servers that connect to a VPC through Direct Connect or Virtual Private Network (VPN). It allows these servers to access the Internet using Elastic IPs (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](#).

If you plan to access NAT gateways through an API, ensure that you are familiar with NAT gateway concepts. For details, see [Service Overview](#).

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".

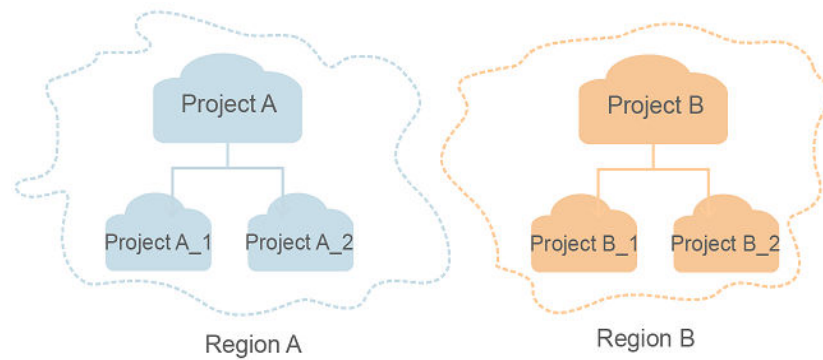
Notes and Constraints

- For details about the constraints on using NAT gateways, see [Notes and Constraints](#).

- For more details, see the constraints described in each API.

Concepts

- **Account**
An account is created upon successful signing up. 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 using an account to use cloud services. Each IAM user has its own identity credentials (password and access keys).
API authentication requires information such as the , username, and password.
- **Region**
Regions are defined based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared in the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.
- **AZ**
An AZ comprises of one or more physical data centers equipped with independent air-conditioning, fire protection, water supply, and electricity facilities. Compute, 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 a group and have physically isolated resources (including compute, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources in the region under their accounts. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolation model

- Enterprise project

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

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

2 API Overview

You can use all NAT Gateway functions through NAT Gateway APIs.

Public NAT Gateways

Table 2-1 Public NAT gateway APIs

Type	Allow You to
Public NAT gateways	Create, query, update, and delete public NAT gateways, including creating a public NAT gateway, querying public NAT gateways, querying details of a public NAT gateway, updating a public NAT gateway, and deleting a public NAT gateway.
SNAT rules	Create, query, update, and delete SNAT rules, including creating an SNAT rule, querying SNAT rules, querying details of an SNAT rule, updating an SNAT rule, and deleting an SNAT rule.
DNAT rules	Create, query, update, and delete DNAT rules, including creating a DNAT rule, creating DNAT rules in batches, querying DNAT rules, querying details of a DNAT rule, updating a DNAT rule, and deleting a DNAT rule.

Table 2-2 Public NAT gateway APIs

Type	API	Allow You to
Public NAT gateways	Creating a Public NAT Gateway	Create a public NAT gateway.
	Querying Public NAT Gateways	Query public NAT gateways.
	Querying Details of a Public NAT Gateway	Query details of a public NAT gateway.

Type	API	Allow You to
	Updating a Public NAT Gateway	Update a public NAT gateway.
	Deleting a Public NAT Gateway	Delete a public NAT gateway.
DNAT rules	Creating a DNAT Rule	Create a DNAT rule.
	Creating DNAT Rules in Batches	Create DNAT rules in batches.
	Querying DNAT Rules	Query DNAT rules.
	Querying Details of a DNAT Rule	Query details of a DNAT rule.
	Updating a DNAT Rule	Update a DNAT rule.
	Deleting a DNAT Rule	Delete a DNAT rule.
SNAT rules	Creating an SNAT Rule	Create an SNAT rule.
	Querying SNAT Rules	Query SNAT rules.
	Querying Details of an SNAT Rule	Query details of an SNAT rule.
	Updating an SNAT Rule	Update an SNAT rule.
	Deleting an SNAT Rule	Delete an SNAT rule.

Private NAT Gateways

Table 2-3 Private NAT gateway APIs

Type	Allow You to
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.

Type	Allow You to
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 2-4 Private NAT gateway APIs

Type	API	Allow You to
Private NAT gateways	Querying Private NAT Gateways	Query private NAT gateways.
	Updating a Private NAT Gateway	Update a private NAT gateway.
	Deleting a Private NAT Gateway	Delete a private NAT gateway.
	Creating a Private NAT Gateway	Create a private NAT gateway.
	Querying Details of a Private NAT Gateway	Query details of a private NAT gateway.
DNAT rules	Querying DNAT Rules	Query DNAT rules.
	Updating a DNAT Rule	Update a DNAT rule.
	Creating a DNAT Rule	Create a DNAT rule.
	Deleting a DNAT Rule	Delete a DNAT rule.
	Querying Details of a DNAT Rule	Query details of a DNAT rule.
SNAT rules	Querying SNAT Rules	Query SNAT rules.
	Querying Details of an SNAT Rule	Query details of an SNAT rule.
	Updating an SNAT Rule	Update an SNAT rule.
	Creating an SNAT Rule	Create an SNAT rule.
	Deleting an SNAT Rule	Delete an SNAT rule.

Type	API	Allow You to
Transit IP addresses	Querying Transit IP Addresses	Query transit IP addresses.
	Releasing a Transit IP Address	Release a transit IP address.
	Assigning a Transit IP Address	Assign a transit IP address.
	Querying Details of a Transit IP Address	Query details of a transit IP address.
Private NAT gateway tags	Querying Private NAT Gateways by Tag	Query private NAT gateways by tag.
	Querying Tags of All Private NAT Gateways in a Project	Query tags of all private NAT gateways owned by a tenant in a project.
	Querying Tags of a Private NAT Gateway	Query tags of a private NAT gateway.
	Adding a Tag to a Private NAT Gateway	Add a tag to a private NAT gateway.
	Batch Adding or Deleting Tags to or from a Private NAT Gateway	Batch add or delete tags to or from a private NAT gateway.
	Deleting a Tag from a Private NAT Gateway	Delete a tag from a private NAT gateway.
Transit IP address tags	Querying Transit IP Addresses by Tag	Query transit IP addresses by tag.
	Querying Tags of All Transit IP Addresses in a Project	Query tags of all transit IP addresses owned by a tenant in a project.
	Querying Tags of a Transit IP Address	Query tags of a transit IP address.
	Adding a Tag to a Transit IP Address	Add a tag to a transit IP address.
	Batch Adding or Deleting Tags to or from a Transit IP Address	Batch add or delete tags to or from a transit IP address.
	Deleting a Tag from a Transit IP Address	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 [creating an IAM user](#) as an example to demonstrate how to call an API.

Request URI

A request URI is in the following format:

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

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

Table 3-1 URI parameter description

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

IAM is a global service. You can create an IAM user using the endpoint of IAM in any region. For example, to create an IAM user in the **EU-Dublin** region, obtain the endpoint of IAM (**iam.myhuaweicloud.eu**) for this region and the **resource-path** (**/v3.0/OS-USER/users**) in the URI of the API for [creating an IAM user](#). Then construct the URI as follows:

```
https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
```

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 for [creating an IAM user](#), the request method is **POST**. An example request is as follows:

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
```

Request Header

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

Common request header fields are as follows.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of <i>Hostname:Port number</i> . If the port number is not specified, the default port is used. The default port number for https is 443 .	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value application/json is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495
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: MIIPAgYJKoZlhvcNAQcCo...ggg1BBIINPXsidG9rZ

NOTE

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

For more details, see "Authentication Using AK/SK" in [Authentication](#).

The following shows an example request of the API for **creating an IAM user** when AK/SK authentication is used:

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,
Signature=*****
```

(Optional) Request Body

This part is optional. A request body is generally sent in a structured format (for example, JSON or XML), which is specified by **Content-Type** in the request header. It is used to transfer content other than the request header. If the request body contains full-width characters, these characters must be coded in UTF-8.

The request body varies depending on APIs. Certain APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

The following shows an example request (a request body included) of the API for **creating an IAM user**. You can learn about request parameters and related description from this example. The bold parameters need to be replaced for a real request.

- **accountid**: account ID of an IAM user
- **username**: name of an IAM user
- **email**: email of an IAM user
- **password**: login password of an IAM user

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
Content-Type: application/json
```

```
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,
Signature=*****

{
  "user": {
    "domain_id": "accountid",
    "name": "username",
    "password": "*****",
    "email": "email",
    "description": "IAM User Description"
  }
}
```

If all data required for the API request is available, you can send the request to call the API through [curl](#), [Postman](#), or coding.

3.2 Authentication

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

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

AK/SK Authentication

NOTE

- AK/SK authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token authentication is recommended.
- The AK/SK can either be permanent or temporary. If it is temporary, the **X-Security-Token** field must be included in the request header. The value is the security token of the temporary AK/SK.

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

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

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

NOTE

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

Token Authentication

NOTE

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

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

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

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username", // IAM user name
          "password": SADMIN_PASS, //IAM user password. You are advised to store it in ciphertext in
the configuration file or an environment variable and decrypt it when needed to ensure security.
          "domain": {
            "name": "domainname" // Name of the account that the IAM user belongs to
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxx" // 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 **ABCDEFGH....**, **X-Auth-Token: ABCDEFGH....** can be added to a request as follows:

```
GET https://iam.myhuaweicloud.eu/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFGH....
```

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 [create an IAM user](#), 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 **create an IAM user**. 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 creating an IAM user

```
"X-Frame-Options": "SAMEORIGIN",
"X-IAM-ETag-id": "2562365939-d8f6f12921974cb097338ac11fceac8a",
"Transfer-Encoding": "chunked",
"Strict-Transport-Security": "max-age=31536000; includeSubdomains;",
"Server": "api-gateway",
"X-Request-Id": "af2953f2bcc67a42325a69a19e6c32a2",
"X-Content-Type-Options": "nosniff",
"Connection": "keep-alive",
"X-Download-Options": "noopen",
"X-XSS-Protection": "1; mode=block;",
"X-IAM-Trace-Id": "token_ null_af2953f2bcc67a42325a69a19e6c32a2",
"Date": "Tue, 21 May 2024 09:03:40 GMT",
"Content-Type": "application/json; charset=utf8"
```

(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 shows part of the response body for the API used to **create an IAM user**.

```
{
  "user": {
    "id": "c131886aec...",
    "name": "IAMUser",
    "description": "IAM User Description",
    "areacode": "",
    "phone": "",
    "email": "***@***.com",
    "status": null,
    "enabled": true,
    "pwd_status": false,
    "access_mode": "default",
    "is_domain_owner": false,
    "xuser_id": "",
    "xuser_type": "",
    "password_expires_at": null,
    "create_time": "2024-05-21T09:03:41.000000",
    "domain_id": "d78cbac1.....",
    "xdomain_id": "30086000.....",
    "xdomain_type": "",
    "default_project_id": null
  }
}
```

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 APIs of Public NAT Gateways

4.1 Public NAT Gateways

4.1.1 Querying Public NAT Gateways

Function

This API is used to query public 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 /v2/{project_id}/nat_gateways

Table 4-1 Path Parameters

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

Table 4-2 Query Parameters

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the project ID.
id	No	String	Specifies the public NAT gateway ID.
enterprise_project_id	No	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created.
description	No	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
created_at	No	String	Specifies when the public NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
name	No	String	Specifies the public NAT gateway name. You can enter up to 64 characters. Only digits, letters, underscores (_), and hyphens (-) are allowed.
status	No	Array of strings	Specifies the public NAT gateway status. The value can be: ● ACTIVE: The public NAT gateway is available. ● PENDING_CREATE: The public NAT gateway is being created. ● PENDING_UPDATE: The public NAT gateway is being updated. ● PENDING_DELETE: The public NAT gateway is being deleted. ● INACTIVE: The public NAT gateway is unavailable.

Parameter	Mandatory	Type	Description
spec	No	Array of strings	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
admin_state_up	No	Boolean	Specifies whether the public NAT gateway is frozen. The value can be: • true: The public NAT gateway is unfrozen. • false: The public NAT gateway is frozen.
internal_network_id	No	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.
router_id	No	String	Specifies the VPC ID.
limit	No	Integer	Specifies the number of records displayed on each page. Value range: 1 to 2000 Default value: 2000

Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. • If parameters marker and limit are not specified, all resource records (2,000 by default) on the first page will be returned. • If marker is not specified and limit is set to 10, the first to tenth resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is set to 10, the 11th to 20th resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is not specified, the 11th and subsequent resource records (2,000 by default) will be returned.
sort_key	No	String	Specifies the key used during sorting.
sort_dir	No	String	Specifies the sorting order of returned results, which can be asc (ascending order) or desc (descending order).

Request Parameters

Table 4-3 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-4 Response body parameters

Parameter	Type	Description
nat_gateways	Array of NatGatewayResponseBody objects	Specifies the response body for querying public NAT gateways. For details, see the NatGateway description.

Table 4-5 NatGatewayResponseBody

Parameter	Type	Description
id	String	Specifies the public NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the public NAT gateway name. You can enter up to 64 characters.
description	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
spec	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
status	String	Specifies the public NAT gateway status. The value can be: • ACTIVE: The public NAT gateway is available. • PENDING_CREATE: The public NAT gateway is being created. • PENDING_UPDATE: The public NAT gateway is being updated. • PENDING_DELETE: The public NAT gateway is being deleted. • INACTIVE: The public NAT gateway is unavailable.
admin_state_up	Boolean	Specifies whether the public NAT gateway is frozen. The value can be: • true: The public NAT gateway is unfrozen. • false: The public NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
router_id	String	Specifies the VPC ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.

Parameter	Type	Description
enterprise_project_id	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created.
session_conf	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
ngport_ip_address	String	Specifies the private IP address of the public NAT gateway, which is assigned by the VPC subnet.
billing_info	String	Specifies the order information. This parameter is available only when you buy a yearly/monthly resource. This parameter is left blank when you buy a pay-per-use resource.
dnat_rules_limit	Long	Specifies the maximum number of DNAT rules on a public NAT gateway. The default value is 200.
snat_rule_public_ip_limit	Integer	Specifies the maximum number of EIPs in an SNAT rule on a public NAT gateway. The default value is 20.
pps_max	Integer	Specifies the maximum number of data packets that can be received or sent by a NAT gateway per second, indicating its traffic handling capacity.
bps_max	Integer	Specifies the maximum amount of data that can be transmitted over the public NAT gateway per second. Unit: Mbit/s

Table 4-6 SessionConfiguration

Parameter	Type	Description
tcp_session_expire_time	Integer	Specifies the TCP session duration. Unit: second
udp_session_expire_time	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	Integer	Specifies the ICMP session duration. Unit: second
tcp_time_wait_time	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Example Requests

```
GET https://{NAT_endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/nat_gateways?status=ACTIVE
```

Example Responses

Status code: 200

Query operation succeeded.

```
{
  "nat_gateways": [ {
    "id": "a253be25-ae7c-4013-978b-3c0785eccd63",
    "router_id": "b1d81744-5165-48b8-916e-e56626feb88f",
    "status": "ACTIVE",
    "description": "nat01",
    "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",
    "name": "wj3",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "billing_info": null,
    "dnat_rules_limit": 200,
    "snat_rule_public_ip_limit": 20,
    "ngport_ip_address": "192.168.0.138",
    "session_conf": {
      "tcp_session_expire_time": 900,
      "udp_session_expire_time": 300,
      "icmp_session_expire_time": 10,
      "tcp_time_wait_time": 5
    }
  }, {
    "id": "e824f1b4-4290-4ebc-8322-cfff370dbd1e",
    "router_id": "305dc52f-13dd-429b-a2d4-444a1039ba0b",
    "status": "ACTIVE",
    "description": "1234",
    "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",
    "name": "lyl001",
    "enterprise_project_id": "0",
    "billing_info": null,
    "dnat_rules_limit": 200,
    "snat_rule_public_ip_limit": 20,
    "ngport_ip_address": "192.168.5.210",
    "session_conf": {
      "tcp_session_expire_time": 900,
      "udp_session_expire_time": 300,
      "icmp_session_expire_time": 10,
      "tcp_time_wait_time": 5
    }
  }
]
```

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See [Error Codes](#).

4.1.2 Creating a Public NAT Gateway

Function

This API is used to create a public NAT gateway.

Calling Method

For details, see [Calling APIs](#).

URI

POST /v2/{project_id}/nat_gateways

Table 4-7 Path Parameters

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

Request Parameters

Table 4-8 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-9 Request body parameters

Parameter	Mandatory	Type	Description
nat_gateway	Yes	CreateNatGatewayOption object	Specifies the request body for creating the public NAT gateway.

Table 4-10 CreateNatGatewayOption

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the public NAT gateway name. You can enter up to 64 characters. Only digits, letters, underscores (_), and hyphens (-) are allowed.
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 DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.
ngport_ip_address	No	String	Specifies the IP address associated with the port when creating a public NAT gateway.
description	No	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
tags	No	Array of strings	Specifies the tags, which are used to identify resources.

Parameter	Mandatory	Type	Description
spec	Yes	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
enterprise_project_id	No	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created. For more information about enterprise projects and how to obtain enterprise project IDs, see <i>Enterprise Management User Guide</i> .
session_conf	No	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
prepaid_options	No	PrepaidOptions object	Specifies the payment attributes.

Table 4-11 SessionConfiguration

Parameter	Mandatory	Type	Description
tcp_session_expire_time	No	Integer	Specifies the TCP session duration. Unit: second
udp_session_expire_time	No	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	No	Integer	Specifies the ICMP session duration. Unit: second

Parameter	Mandatory	Type	Description
tcp_time_wait_time	No	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Table 4-12 PrepaidOptions

Parameter	Mandatory	Type	Description
period_type	No	String	month : indicates that the service is subscribed by month. year : indicates that the service is subscribed by year.
period_num	No	Integer	Specifies the duration.
is_auto_renew	No	Boolean	Specifies whether to enable automatic renewal.
is_auto_pay	No	Boolean	Specifies whether to enable automatic payment.

Response Parameters

Status code: 201

Table 4-13 Response body parameters

Parameter	Type	Description
nat_gateway	NatGatewayResponseBody object	Specifies the response body for a public NAT gateway.
order_id	String	Specifies the order ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.

Table 4-14 NatGatewayResponseBody

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

Parameter	Type	Description
name	String	Specifies the public NAT gateway name. You can enter up to 64 characters.
description	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
status	String	Specifies the public NAT gateway status. The value can be: • ACTIVE: The public NAT gateway is available. • PENDING_CREATE: The public NAT gateway is being created. • PENDING_UPDATE: The public NAT gateway is being updated. • PENDING_DELETE: The public NAT gateway is being deleted. • INACTIVE: The public NAT gateway is unavailable.
admin_state_up	Boolean	Specifies whether the public NAT gateway is frozen. The value can be: • true: The public NAT gateway is unfrozen. • false: The public NAT gateway is frozen.

Parameter	Type	Description
created_at	String	Specifies when the public NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
router_id	String	Specifies the VPC ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.
enterprise_project_id	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created.
session_conf	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
ngport_ip_address	String	Specifies the private IP address of the public NAT gateway, which is assigned by the VPC subnet.
billing_info	String	Specifies the order information. This parameter is available only when you buy a yearly/monthly resource. This parameter is left blank when you buy a pay-per-use resource.
dnat_rules_limit	Long	Specifies the maximum number of DNAT rules on a public NAT gateway. The default value is 200.
snat_rule_public_ip_limit	Integer	Specifies the maximum number of EIPs in an SNAT rule on a public NAT gateway. The default value is 20.
pps_max	Integer	Specifies the maximum number of data packets that can be received or sent by a NAT gateway per second, indicating its traffic handling capacity.
bps_max	Integer	Specifies the maximum amount of data that can be transmitted over the public NAT gateway per second. Unit: Mbit/s

Table 4-15 SessionConfiguration

Parameter	Type	Description
tcp_session_expire_time	Integer	Specifies the TCP session duration. Unit: second

Parameter	Type	Description
udp_session_expire_time	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	Integer	Specifies the ICMP session duration. Unit: second
tcp_time_wait_time	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Example Requests

Creating a public NAT gateway

POST https://{NAT_endpoint}/v2/70505c941b9b4dfd82fd351932328a2f/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",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
  }
}
```

Example Responses

Status code: 201

Public NAT gateway created.

```
{
  "nat_gateway": {
    "id": "14338426-6afe-4019-996b-3a9525296e11",
    "name": "nat_001",
    "description": "my nat gateway 01",
    "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
    "spec": "1",
    "admin_state_up": true,
    "tenant_id": "70505c941b9b4dfd82fd351932328a2f",
    "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "status": "PENDING_CREATE",
    "billing_info": null,
    "dnat_rules_limit": 200,
    "snat_rule_public_ip_limit": 20,
    "ngport_ip_address": "192.168.0.138",
    "created_at": "2019-04-22 08:47:13.234512",
    "session_conf": {
      "tcp_session_expire_time": 900,
      "udp_session_expire_time": 300,
      "icmp_session_expire_time": 10,
      "tcp_time_wait_time": 5
    }
  }
}
```

Status Codes

Status Code	Description
201	Public NAT gateway created.

Error Codes

See [Error Codes](#).

4.1.3 Deleting a Public NAT Gateway

Function

This API is used to delete a public NAT gateway.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}

Table 4-16 Path Parameters

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

Request Parameters

Table 4-17 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 204

Public NAT gateway deleted.

None

Example Requests

```
DELETE https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526d/nat_gateways/  
a78fb3eb-1654-4710-8742-3fc49d5f04f8
```

Example Responses

None

Status Codes

Status Code	Description
204	Public NAT gateway deleted.

Error Codes

See [Error Codes](#).

4.1.4 Updating a Public NAT Gateway

Function

This API is used to update a public NAT gateway.

Constraints

The name, description, and specifications of a public NAT gateway can be updated when **admin_state_up** is set to **True** and **status** is **ACTIVE**.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /v2/{project_id}/nat_gateways/{nat_gateway_id}

Table 4-18 Path Parameters

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

Request Parameters

Table 4-19 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-20 Request body parameters

Parameter	Mandatory	Type	Description
nat_gateway	Yes	UpdateNatGatewayOption object	Specifies the request body for updating the public NAT gateway.

Table 4-21 UpdateNatGatewayOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the public NAT gateway name. You can enter up to 64 characters. Only digits, letters, underscores (_), and hyphens (-) are allowed.

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	No	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
session_conf	No	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
prepaid_options	No	prepaid_options object	Specifies the payment attributes.

Table 4-22 SessionConfiguration

Parameter	Mandatory	Type	Description
tcp_session_expire_time	No	Integer	Specifies the TCP session duration. Unit: second
udp_session_expire_time	No	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	No	Integer	Specifies the ICMP session duration. Unit: second

Parameter	Mandatory	Type	Description
tcp_time_wait_time	No	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Table 4-23 prepaid_options

Parameter	Mandatory	Type	Description
is_auto_pay	No	Boolean	Specifies whether to enable automatic payment.

Response Parameters

Status code: 200

Table 4-24 Response body parameters

Parameter	Type	Description
nat_gateway	NatGatewayResponseBody object	Specifies the response body for a public NAT gateway.
order_id	String	Specifies the order ID.

Table 4-25 NatGatewayResponseBody

Parameter	Type	Description
id	String	Specifies the public NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the public NAT gateway name. You can enter up to 64 characters.
description	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
spec	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
status	String	Specifies the public NAT gateway status. The value can be: • ACTIVE: The public NAT gateway is available. • PENDING_CREATE: The public NAT gateway is being created. • PENDING_UPDATE: The public NAT gateway is being updated. • PENDING_DELETE: The public NAT gateway is being deleted. • INACTIVE: The public NAT gateway is unavailable.
admin_state_up	Boolean	Specifies whether the public NAT gateway is frozen. The value can be: • true: The public NAT gateway is unfrozen. • false: The public NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
router_id	String	Specifies the VPC ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.

Parameter	Type	Description
enterprise_project_id	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created.
session_conf	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
ngport_ip_address	String	Specifies the private IP address of the public NAT gateway, which is assigned by the VPC subnet.
billing_info	String	Specifies the order information. This parameter is available only when you buy a yearly/monthly resource. This parameter is left blank when you buy a pay-per-use resource.
dnat_rules_limit	Long	Specifies the maximum number of DNAT rules on a public NAT gateway. The default value is 200.
snat_rule_public_ip_limit	Integer	Specifies the maximum number of EIPs in an SNAT rule on a public NAT gateway. The default value is 20.
pps_max	Integer	Specifies the maximum number of data packets that can be received or sent by a NAT gateway per second, indicating its traffic handling capacity.
bps_max	Integer	Specifies the maximum amount of data that can be transmitted over the public NAT gateway per second. Unit: Mbit/s

Table 4-26 SessionConfiguration

Parameter	Type	Description
tcp_session_expire_time	Integer	Specifies the TCP session duration. Unit: second
udp_session_expire_time	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	Integer	Specifies the ICMP session duration. Unit: second
tcp_time_wait_time	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Example Requests

```
PUT https://{NAT_endpoint}/v2/70505c941b9b4dfd82fd351932328a2f/nat_gateways/14338426-6afe-4019-996b-3a9525296e11

{
  "nat_gateway": {
    "name": "new_name",
    "description": "new description",
    "spec": "1"
  }
}
```

Example Responses

Status code: 200

Public NAT gateway updated.

```
{
  "nat_gateway": {
    "id": "14338426-6afe-4019-996b-3a9525296e11",
    "name": "new_name",
    "description": "new description",
    "spec": "1",
    "tenant_id": "70505c941b9b4dfd82fd351932328a2f",
    "enterprise_project_id": "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "status": "ACTIVE",
    "created_at": "2019-04-22T08:47:13",
    "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",
    "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
    "admin_state_up": true,
    "billing_info": null,
    "dnat_rules_limit": 200,
    "snat_rule_public_ip_limit": 20,
    "ngport_ip_address": "192.168.0.138",
    "session_conf": {
      "tcp_session_expire_time": 900,
      "udp_session_expire_time": 300,
      "icmp_session_expire_time": 10,
      "tcp_time_wait_time": 5
    }
  }
}
```

Status Codes

Status Code	Description
200	Public NAT gateway updated.

Error Codes

See [Error Codes](#).

4.1.5 Querying Details of a Public NAT Gateway

Function

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

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/{project_id}/nat_gateways/{nat_gateway_id}

Table 4-27 Path Parameters

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

Request Parameters

Table 4-28 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-29 Response body parameters

Parameter	Type	Description
nat_gateway	NatGatewayResponseBody object	Specifies the response body for a public NAT gateway.

Table 4-30 NatGatewayResponseBody

Parameter	Type	Description
id	String	Specifies the public NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the public NAT gateway name. You can enter up to 64 characters.
description	String	Provides supplementary information about the public NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	String	Specifies the public NAT gateway specifications. The value can be: • 1: small, which supports up to 10,000 SNAT connections. • 2: medium, which supports up to 50,000 SNAT connections. • 3: large, which supports up to 200,000 SNAT connections. • 4: extra large, which supports up to 1,000,000 SNAT connections. • 5: enterprise-class, which supports up to 10,000,000 SNAT connections.
status	String	Specifies the public NAT gateway status. The value can be: • ACTIVE: The public NAT gateway is available. • PENDING_CREATE: The public NAT gateway is being created. • PENDING_UPDATE: The public NAT gateway is being updated. • PENDING_DELETE: The public NAT gateway is being deleted. • INACTIVE: The public NAT gateway is unavailable.

Parameter	Type	Description
admin_state_up	Boolean	Specifies whether the public NAT gateway is frozen. The value can be: • true: The public NAT gateway is unfrozen. • false: The public NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
router_id	String	Specifies the VPC ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway. DVR is Distributed Virtual Routing.
enterprise_project_id	String	Specifies the ID of the enterprise project associated with the public NAT gateway when the gateway is created.
session_conf	SessionConfiguration object	Specifies the session parameters for the public NAT gateway.
ngport_ip_address	String	Specifies the private IP address of the public NAT gateway, which is assigned by the VPC subnet.
billing_info	String	Specifies the order information. This parameter is available only when you buy a yearly/monthly resource. This parameter is left blank when you buy a pay-per-use resource.
dnat_rules_limit	Long	Specifies the maximum number of DNAT rules on a public NAT gateway. The default value is 200.
snat_rule_public_ip_limit	Integer	Specifies the maximum number of EIPs in an SNAT rule on a public NAT gateway. The default value is 20.
pps_max	Integer	Specifies the maximum number of data packets that can be received or sent by a NAT gateway per second, indicating its traffic handling capacity.
bps_max	Integer	Specifies the maximum amount of data that can be transmitted over the public NAT gateway per second. Unit: Mbit/s

Table 4-31 SessionConfiguration

Parameter	Type	Description
tcp_session_expire_time	Integer	Specifies the TCP session duration. Unit: second
udp_session_expire_time	Integer	Specifies the UDP session duration. Unit: second
icmp_session_expire_time	Integer	Specifies the ICMP session duration. Unit: second
tcp_time_wait_time	Integer	Specifies how long the side that actively closed the TCP connection is in the TIME_WAIT state. Unit: second

Example Requests

```
GET https://{NAT_endpoint}/v2/70505c941b9b4dfd82fd351932328a2f/nat_gateways/  
14338426-6afe-4019-996b-3a9525296e11
```

Example Responses

Status code: 200

Query operation succeeded.

```
{  
  "nat_gateway": {  
    "id": "14338426-6afe-4019-996b-3a9525296e11",  
    "name": "nat-gateway-name",  
    "description": "nat-gateway-description",  
    "spec": "1",  
    "router_id": "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",  
    "tenant_id": "70505c941b9b4dfd82fd351932328a2f",  
    "enterprise_project_id": "2759da7b-8015-404c-ae0a-a389007b0e2a",  
    "internal_network_id": "89d66639-aacb-4929-969d-07080b0f9fd9",  
    "status": "ACTIVE",  
    "admin_state_up": true,  
    "billing_info": null,  
    "dnat_rules_limit": 200,  
    "snat_rule_public_ip_limit": 20,  
    "ngport_ip_address": "192.168.0.138",  
    "created_at": "2019-04-22 08:47:13.902312",  
    "session_conf": {  
      "tcp_session_expire_time": 900,  
      "udp_session_expire_time": 300,  
      "icmp_session_expire_time": 10,  
      "tcp_time_wait_time": 5  
    }  
  }  
}
```

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See [Error Codes](#).

4.2 DNAT Rules

4.2.1 Querying DNAT Rules

Function

This API is used to query DNAT rules.

Constraints

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.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/{project_id}/dnat_rules

Table 4-32 Path Parameters

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

Table 4-33 Query Parameters

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
external_service_port	No	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535
floating_ip_address	No	String	Specifies the EIP address.
global_eip_address	No	String	Specifies the global EIP.
status	No	Array of strings	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
floating_ip_id	No	String	Specifies the EIP ID.
global_eip_id	No	String	Specifies the global EIP ID.
internal_service_port	No	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records displayed on each page. Value range: 1 to 2000 Default value: 2000
id	No	String	Specifies the DNAT rule ID.
description	No	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
created_at	No	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
nat_gateway_id	No	Array of strings	Specifies the public NAT gateway ID.
port_id	No	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	No	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
protocol	No	Array of strings	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.

Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. • If parameters marker and limit are not specified, all resource records (2,000 by default) on the first page will be returned. • If marker is not specified and limit is set to 10, the first to tenth resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is set to 10, the 11th to 20th resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is not specified, the 11th and subsequent resource records (2,000 by default) will be returned.

Request Parameters

Table 4-34 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-35 Response body parameters

Parameter	Type	Description
dnat_rules	Array of NatGatewayDnatRuleResponseBody objects	Specifies the response body for querying DNAT rules.

Table 4-36 NatGatewayDnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
nat_gateway_id	String	Specifies the public NAT gateway ID.
global_eip_id	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
global_eip_addresses	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_addresses	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535

Parameter	Type	Description
status	String	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
admin_state_up	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
internal_service_port_range	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
external_service_port_range	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.

Parameter	Type	Description
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.
created_at	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.

Example Requests

```
GET https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526d/dnat_rules?limit=2
```

Example Responses

Status code: 200

DNAT rules queried.

```
{
  "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",
    "private_ip": "",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526d",
    "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,
    "description": "my dnat rule 01"
  }, {
    "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": "d199ba7e0ba64899b2e81518104b1526d",
    "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,
    "description": "my dnat rule 01"
  } ]
}
```

Status Codes

Status Code	Description
200	DNAT rules queried.

Error Codes

See [Error Codes](#).

4.2.2 Creating a DNAT Rule

Function

This API is used to create a DNAT rule.

Constraints

You can create a DNAT rule only when **status** of the NAT gateway is **ACTIVE** and **admin_state_up** of the NAT gateway administrator is **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**.

Calling Method

For details, see [Calling APIs](#).

URI

POST /v2/{project_id}/dnat_rules

Table 4-37 Path Parameters

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

Request Parameters

Table 4-38 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-39 Request body parameters

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

Table 4-40 CreateNatGatewayDnatOption

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 (<>).
port_id	No	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	No	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.

Parameter	Mandatory	Type	Description
internal_service_port	Yes	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
floating_ip_id	Yes	String	Specifies the EIP ID.
external_service_port	Yes	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 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.
internal_service_port_range	No	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range . The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i> .
external_service_port_range	No	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range . The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i> .
global_eip_id	No	String	Specifies the global EIP ID.

Response Parameters

Status code: 201

Table 4-41 Response body parameters

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

Table 4-42 NatGatewayDnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
nat_gateway_id	String	Specifies the public NAT gateway ID.
global_eip_id	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
global_eip_addresses	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_addresses	String	Specifies the EIP address.

Parameter	Type	Description
external_service_port	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535
status	String	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
admin_state_up	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
internal_service_port_range	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range . The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i> .

Parameter	Type	Description
external_service_port_range	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
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.
created_at	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.

Example Requests

Creating a DNAT rule

POST https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/dnat_rules

```
{
  "dnat_rule": {
    "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
    "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
    "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
    "internal_service_port": 993,
    "protocol": "tcp",
    "external_service_port": 242,
    "description": "my dnat rule 01"
  }
}
```

Example Responses

Status code: 201

DNAT rule created.

```
{
  "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": "d199ba7e0ba64899b2e81518104b1526d",
  }
}
```

```
"created_at" : "2019-11-15 15:44:42.595173",  
"id" : "79195d50-0271-41f1-bded-4c089b2502ff",  
"external_service_port" : 242,  
"floating_ip_address" : "5.21.11.226",  
"description" : "my dnat rule 01"  
}  
}
```

Status Codes

Status Code	Description
201	DNAT rule created.

Error Codes

See [Error Codes](#).

4.2.3 Deleting a DNAT Rule

Function

This API is used to delete a DNAT rule.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}/dnat_rules/{dnat_rule_id}

Table 4-43 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
dnat_rule_id	Yes	String	Specifies the DNAT rule ID.

Request Parameters

Table 4-44 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 204

DNAT rule deleted.

None

Example Requests

```
DELETE https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526d/nat_gateways/f4dfea98-874a-46f7-aa2a-fb348d0ceb02/dnat_rules/a78fb3eb-1654-4710-8742-3fc49d5f04f8"
```

Example Responses

None

Status Codes

Status Code	Description
204	DNAT rule deleted.

Error Codes

See [Error Codes](#).

4.2.4 Updating a DNAT Rule

Function

This API is used to update a DNAT rule.

Constraints

You can update a DNAT rule only when its **status** 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 update 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**. The following fields must be updated together: **port_id**, **private_ip**, **internal_service_port**, **external_service_port**, **floating_ip_id**, **protocol**, **internal_service_port_range**, and **external_service_port_range**.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /v2/{project_id}/dnat_rules/{dnat_rule_id}

Table 4-45 Path Parameters

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

Request Parameters

Table 4-46 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-47 Request body parameters

Parameter	Mandatory	Type	Description
dnat_rule	Yes	UpdateNatGatewayDnatRuleOption object	Specifies the request body for updating the DNAT rule.

Table 4-48 UpdateNatGatewayDnatRuleOption

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the NAT gateway ID.
description	No	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	No	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	No	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
protocol	No	String	Specifies the protocol. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
global_eip_id	No	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
floating_ip_id	No	String	Specifies the EIP ID.
internal_service_port	No	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535

Parameter	Mandatory	Type	Description
external_service_port	No	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535
internal_service_port_range	No	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range . The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i> .
external_service_port_range	No	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range . The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i> .

Response Parameters

Status code: 200

Table 4-49 Response body parameters

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

Table 4-50 NatGatewayDnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
nat_gateway_id	String	Specifies the public NAT gateway ID.
global_eip_id	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
global_eip_addresses	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_addresses	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535

Parameter	Type	Description
status	String	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
admin_state_up	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
internal_service_port_range	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
external_service_port_range	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.

Parameter	Type	Description
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.
created_at	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.

Example Requests

PUT https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/dnat_rules/79195d50-0271-41f1-bded-4c089b2502ff

```
{
  "dnat_rule": {
    "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
    "description": "my dnat-rules"
  }
}
```

Example Responses

Status code: 200

DNAT rule updated.

```
{
  "dnat_rule": {
    "status": "ACTIVE",
    "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
    "admin_state_up": true,
    "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526",
    "floating_ip_id": "cf99c679-9f41-4dac-8513-9c9228e713e1",
    "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,
    "description": "my dnat rule"
  }
}
```

Status Codes

Status Code	Description
200	DNAT rule updated.

Error Codes

See [Error Codes](#).

4.2.5 Querying Details of a DNAT Rule

Function

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

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/{project_id}/dnat_rules/{dnat_rule_id}

Table 4-51 Path Parameters

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

Request Parameters

Table 4-52 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-53 Response body parameters

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

Table 4-54 NatGatewayDnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
nat_gateway_id	String	Specifies the public NAT gateway ID.
global_eip_id	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
global_eip_addresses	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_addresses	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535

Parameter	Type	Description
status	String	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
admin_state_up	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
internal_service_port_range	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
external_service_port_range	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.

Parameter	Type	Description
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.
created_at	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.

Example Requests

```
GET https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526d/dnat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338
```

Example Responses

Status code: 200

DNAT rule details queried.

```
{
  "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",
    "private_ip": "",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526d",
    "created_at": "2017-11-15 15:44:42.595173",
    "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
    "floating_ip_address": "5.21.11.226",
    "external_service_port": 242,
    "description": "my dnat rule 01"
  }
}
```

Status Codes

Status Code	Description
200	DNAT rule details queried.

Error Codes

See [Error Codes](#).

4.2.6 Creating DNAT Rules in Batches

Function

This API is used to create DNAT rules in batches.

Constraints

You can create DNAT rules in batches only when **status** of the NAT gateway is **ACTIVE** and **admin_state_up** of the NAT gateway administrator is **True**. Specify either **port_id** or **private_ip** at a time. If you are going to batch create DNAT rules (each 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**.

Calling Method

For details, see [Calling APIs](#).

URI

POST /v2/{project_id}/dnat_rules/batch

Table 4-55 Path Parameters

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

Request Parameters

Table 4-56 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	No	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-57 Request body parameters

Parameter	Mandatory	Type	Description
dnat_rules	Yes	Array of CreateNatGatewayDnatOption objects	Specifies the request body for creating DNAT rules in batches.

Table 4-58 CreateNatGatewayDnatOption

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 (<>).
port_id	No	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	No	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
internal_service_port	Yes	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
floating_ip_id	Yes	String	Specifies the EIP ID.
external_service_port	Yes	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 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.

Parameter	Mandatory	Type	Description
internal_service_port_range	No	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
external_service_port_range	No	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
global_eip_id	No	String	Specifies the global EIP ID.

Response Parameters

Status code: 201

Table 4-59 Response body parameters

Parameter	Type	Description
dnat_rules	Array of NatGatewayDnatRuleResponseBody objects	Specifies the response body for creating DNAT rules in batches.

Table 4-60 NatGatewayDnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
port_id	String	Specifies the port ID of an ECS or BMS. This parameter applies to VPC scenarios. Configure either port_id or private_ip .
private_ip	String	Specifies the private IP address of a user. This parameter applies to Direct Connect and Cloud Connect scenarios. Configure either private_ip or port_id .
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. Supported range: 0 to 65535
nat_gateway_id	String	Specifies the public NAT gateway ID.
global_eip_id	String	Specifies the global EIP ID. Configure either the EIP ID or the global EIP ID.
global_eip_addresses	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_addresses	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port used by the floating IP address to provide services for external systems. Supported range: 0 to 65535

Parameter	Type	Description
status	String	Specifies the DNAT rule status. The value can be: • ACTIVE: The DNAT rule is available. • PENDING_CREATE: The DNAT rule is being created. • PENDING_UPDATE: The DNAT rule is being updated. • PENDING_DELETE: The DNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The DNAT rule is unavailable.
admin_state_up	Boolean	Specifies whether the DNAT rule is frozen. The value can be: • true: The DNAT rule is unfrozen. • false: The DNAT rule is frozen.
internal_service_port_range	String	Specifies the port range used by ECSs or BMSs to provide services for external systems. The number of ports must be the same as that of external_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.
external_service_port_range	String	Specifies the port range used by the floating IP address to provide services for external systems. The number of ports must be the same as that of internal_service_port_range. The value ranges from 1 to 65535. Specify two port numbers connected by a single hyphen (-) and no blank spaces in the x-y format, where <i>x</i> is lower than <i>y</i>.

Parameter	Type	Description
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.
created_at	String	Specifies when the DNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.

Example Requests

Creating DNAT rules in batches (In the first DNAT rule, both **internal_service_port** and **external_service_port** are set to a specific port number. In the second DNAT rule, both **internal_service_port** and **external_service_port** are set to 0.)

```
POST https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/dnat_rules/batch
```

```
{
  "dnat_rules": [ {
    "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,
    "description": "my dnat rule 01"
  }, {
    "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,
    "description": "my dnat rule 01"
  } ]
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "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",
    "private_ip": "",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526",
    "created_at": "2019-11-15 15:44:42.595173",
    "id": "79195d50-0271-41f1-bded-4c089b2502ff",
    "floating_ip_address": "5.21.11.226",
    "external_service_port": 242,
  } ]
}
```

```
{
  "description": "my dnat rule 01"
}, {
  "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": "d199ba7e0ba64899b2e81518104b1526",
  "created_at": "2019-11-15 15:44:42.595173",
  "id": "79195d50-0271-41f1-bded-4c089c2502ff",
  "floating_ip_address": "5.21.11.227",
  "external_service_port": 0,
  "description": "my dnat rule 01"
}]
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.3 SNAT Rules

4.3.1 Querying SNAT Rules

Function

This API is used to query SNAT 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 /v2/{project_id}/snat_rules

Table 4-61 Path Parameters

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

Table 4-62 Query Parameters

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies whether the SNAT rule is frozen. The value can be: • true: The SNAT rule is unfrozen. • false: The SNAT rule is frozen.
cidr	No	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id . If you set source_type to 0 , set cidr to a subset of the VPC subnet. If you set source_type to 1 , set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.
limit	No	Integer	Specifies the number of records displayed on each page. Value range: 1 to 2000 Default value: 2000
floating_ip_address	No	String	Specifies the EIP. Use commas (,) to separate multiple EIPs. The maximum length is 1,024 bytes.
global_eip_address	No	String	Specifies the global EIP. Use commas (,) to separate multiple global EIPs. The maximum length is 1,024 bytes.

Parameter	Mandatory	Type	Description
floating_ip_id	No	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs. The maximum length is 4,096 bytes.
global_eip_id	No	String	Specifies the global EIP ID. Use commas (,) to separate multiple global EIP IDs. The maximum length is 4,096 bytes.
id	No	String	Specifies the SNAT rule ID.
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
created_at	No	String	Specifies when the SNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
nat_gateway_id	No	Array of strings	Specifies the public NAT gateway ID.
network_id	No	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .
source_type	No	Integer	0 : VPC. Either network_id or cidr can be specified. 1 : Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.

Parameter	Mandatory	Type	Description
status	No	String	Specifies the SNAT rule status. The value can be: • ACTIVE: The SNAT rule is available. • PENDING_CREATE: The SNAT rule is being created. • PENDING_UPDATE: The SNAT rule is being updated. • PENDING_DELETE: The SNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The SNAT rule is unavailable.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. • If parameters marker and limit are not specified, all resource records (2,000 by default) on the first page will be returned. • If marker is not specified and limit is set to 10, the first to tenth resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is set to 10, the 11th to 20th resource records will be returned. • If marker is set to the resource ID of the tenth record and limit is not specified, the 11th and subsequent resource records (2,000 by default) will be returned.

Request Parameters

Table 4-63 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-64 Response body parameters

Parameter	Type	Description
snat_rules	Array of NatGatewaySnatRuleResponseBody objects	Specifies the response body for querying SNAT rules.

Table 4-65 NatGatewaySnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
cidr	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id . If you set source_type to 0 , set cidr to a subset of the VPC subnet. If you set source_type to 1 , set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.

Parameter	Type	Description
source_type	Integer	0 : VPC. Either network_id or cidr can be specified. 1 : Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.
floating_ip_id	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
status	String	Specifies the SNAT rule status. The value can be: • ACTIVE: The SNAT rule is available. • PENDING_CREATE: The SNAT rule is being created. • PENDING_UPDATE: The SNAT rule is being updated. • PENDING_DELETE: The SNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The SNAT rule is unavailable.
created_at	String	Specifies when the SNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
network_id	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .
admin_state_up	Boolean	Specifies whether the SNAT rule is frozen. The value can be: • true: The SNAT rule is unfrozen. • false: The SNAT rule is frozen.
floating_ip_addresses	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
frozen_ip_addresses	String	Specifies the frozen EIP. Use commas (,) to separate frozen EIPs.
global_eip_id	String	Specifies the global EIP ID.

Parameter	Type	Description
global_eip_addresses	String	Specifies the global EIP.

Example Requests

```
GET https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/snat_rules?limit=2
```

Example Responses

Status code: 200

SNAT rules queried.

```
{
  "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",
    "source_type": 0,
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526",
    "created_at": "2017-11-15 15:44:42.595173",
    "id": "79195d50-0271-41f1-bded-4c089b2502ff",
    "floating_ip_address": "5.21.11.242",
    "freezed_ip_address": "",
    "description": "my snat rule 01"
  }, {
    "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",
    "source_type": 0,
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526",
    "created_at": "2017-11-17 07:43:44.830845",
    "id": "4a1a10d7-0d9f-4846-8cda-24cffe5c",
    "floating_ip_address": "5.21.11.142,5.21.11.143",
    "freezed_ip_address": "5.21.11.142",
    "description": "my snat rule 01"
  } ]
}
```

Status Codes

Status Code	Description
200	SNAT rules queried.

Error Codes

See [Error Codes](#).

4.3.2 Creating an SNAT Rule

Function

This API is used to create an SNAT rule.

Constraints

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

Calling Method

For details, see [Calling APIs](#).

URI

POST /v2/{project_id}/snat_rules

Table 4-66 Path Parameters

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

Request Parameters

Table 4-67 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-68 Request body parameters

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

Table 4-69 CreateNatGatewaySnatRuleOption

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
cidr	No	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id . If you set source_type to 0 , set cidr to a subset of the VPC subnet. If you set source_type to 1 , set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.
network_id	No	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
source_type	No	Integer	0 : VPC. Either network_id or cidr can be specified. 1 : Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.
floating_ip_id	Yes	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs. Maximum number of EIP IDs: 20
global_eip_id	No	String	Specifies the global EIP ID.

Response Parameters

Status code: 201

Table 4-70 Response body parameters

Parameter	Type	Description
snat_rule	CreateNatGatewaySnatRuleResponseBody object	Specifies the response body for creating the SNAT rule.

Table 4-71 CreateNatGatewaySnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
cidr	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id. If you set source_type to 0, set cidr to a subset of the VPC subnet. If you set source_type to 1, set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.
source_type	Integer	0: VPC. Either network_id or cidr can be specified. 1: Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.
floating_ip_id	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs.
global_eip_id	String	Specifies the global EIP ID. Use commas (,) to separate multiple global EIP IDs. Configure either the EIP ID or the global EIP ID. The maximum length is 4,096 bytes.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
status	String	Specifies the SNAT rule status. The value can be: • ACTIVE: The SNAT rule is available. • PENDING_CREATE: The SNAT rule is being created. • PENDING_UPDATE: The SNAT rule is being updated. • PENDING_DELETE: The SNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The SNAT rule is unavailable.
created_at	String	Specifies when the SNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
network_id	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .
admin_state_up	Boolean	Specifies whether the SNAT rule is frozen. The value can be: • true: The SNAT rule is unfrozen. • false: The SNAT rule is frozen.
floating_ip_addresses	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
global_eip_addresses	String	Specifies the global EIP.

Example Requests

Creating an SNAT rule

POST https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/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",
    "description": "my snat rule 01"
  }
}
```

Example Responses

Status code: 201

SNAT rule created.

```
{
  "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",
    "description": "",
    "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

Status Code	Description
201	SNAT rule created.

Error Codes

See [Error Codes](#).

4.3.3 Updating an SNAT Rule

Function

This API is used to update an SNAT rule.

Constraints

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

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

Calling Method

For details, see [Calling APIs](#).

URI

PUT /v2/{project_id}/snat_rules/{snat_rule_id}

Table 4-72 Path Parameters

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

Request Parameters

Table 4-73 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 4-74 Request body parameters

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

Table 4-75 UpdateNatGatewaySnatRuleOption

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
public_ip_address	No	String	Specifies the EIP. Use commas (,) to separate multiple EIPs. Maximum number of EIP IDs: 20
global_eip_id	No	String	Specifies the global EIP ID.

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Response Parameters

Status code: 200

Table 4-76 Response body parameters

Parameter	Type	Description
snat_rule	NatGatewayUpdateSnatRuleResponseBody object	Specifies the response body for updating the SNAT rule.

Table 4-77 NatGatewayUpdateSnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
source_type	Integer	0 : VPC. Either network_id or cidr can be specified. 1 : Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.
cidr	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id . If you set source_type to 0 , set cidr to a subset of the VPC subnet. If you set source_type to 1 , set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.

Parameter	Type	Description
floating_ip_id	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
status	String	Specifies the SNAT rule status. The value can be: • ACTIVE: The SNAT rule is available. • PENDING_CREATE: The SNAT rule is being created. • PENDING_UPDATE: The SNAT rule is being updated. • PENDING_DELETE: The SNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The SNAT rule is unavailable.
created_at	String	Specifies when the SNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
network_id	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .
admin_state_up	Boolean	Specifies whether the SNAT rule is frozen. The value can be: • true: The SNAT rule is unfrozen. • false: The SNAT rule is frozen.
floating_ip_addresses	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
public_ip_address	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
global_eip_addresses	String	Specifies the global EIP.
global_eip_id	String	Specifies the global EIP ID.

Example Requests

Updating the SNAT rule

```
PUT https://{NAT_endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/snat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338

{
  "snat_rule": {
    "nat_gateway_id": "bbe7c2e7-3bad-445b-a067-b30acce66053",
    "description": "my_snat_rule_update",
    "public_ip_address": "10.15.10.11,10.15.10.12"
  }
}
```

Example Responses

Status code: 200

Normal response to PUT requests.

```
{
  "snat_rule": {
    "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a,7a094014-9657-463f-972b-e84d56b931a0",
    "status": "PENDING_CREATE",
    "nat_gateway_id": "bbe7c2e7-3bad-445b-a067-b30acce66053",
    "admin_state_up": true,
    "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
    "source_type": 0,
    "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
    "created_at": "2017-11-18 07:54:21.665430",
    "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
    "public_ip_address": "10.15.10.11,10.15.10.12",
    "floating_ip_address": "10.15.10.11,10.15.10.12",
    "description": "my_snat_rule_update"
  }
}
```

Status Codes

Status Code	Description
200	Normal response to PUT requests.

Error Codes

See [Error Codes](#).

4.3.4 Querying Details of an SNAT Rule

Function

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

Constraints

null

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/{project_id}/snat_rules/{snat_rule_id}

Table 4-78 Path Parameters

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

Request Parameters

Table 4-79 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 4-80 Response body parameters

Parameter	Type	Description
snat_rule	NatGatewaySnatRuleResponseBody object	Specifies the response body of the SNAT rule.

Table 4-81 NatGatewaySnatRuleResponseBody

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.

Parameter	Type	Description
cidr	String	Specifies a CIDR block or a host IP address. Configure either cidr or network_id. If you set source_type to 0, set cidr to a subset of the VPC subnet. If you set source_type to 1, set cidr to a CIDR block of your private networks connected to the VPC through Direct Connect or Cloud Connect.
source_type	Integer	0: VPC. Either network_id or cidr can be specified. 1: Direct Connect/Cloud Connect. Only cidr can be specified. If no value is entered, default value 0 (VPC) is used.
floating_ip_id	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
status	String	Specifies the SNAT rule status. The value can be: • ACTIVE: The SNAT rule is available. • PENDING_CREATE: The SNAT rule is being created. • PENDING_UPDATE: The SNAT rule is being updated. • PENDING_DELETE: The SNAT rule is being deleted. • EIP_FREEZED: The EIP is frozen. • INACTIVE: The SNAT rule is unavailable.
created_at	String	Specifies when the SNAT rule was created. The time is in <i>yyyy-mm-dd hh:mm:ss.SSSSSS</i> format.
network_id	String	Specifies the network ID used by the SNAT rule. Configure either network_id or cidr .

Parameter	Type	Description
admin_state_up	Boolean	Specifies whether the SNAT rule is frozen. The value can be: • true: The SNAT rule is unfrozen. • false: The SNAT rule is frozen.
floating_ip_addresses	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
frozen_ip_addresses	String	Specifies the frozen EIP. Use commas (,) to separate frozen EIPs.
global_eip_id	String	Specifies the global EIP ID.
global_eip_address	String	Specifies the global EIP.

Example Requests

```
GET https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/snat_rules/5b95c675-69c2-4656-ba06-58ff72e1d33
```

Example Responses

Status code: 200

SNAT rule details queried.

```
{
  "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",
    "source_type": 0,
    "tenant_id": "d199ba7e0ba64899b2e81518104b1526",
    "created_at": "2017-11-18 07:54:21.665430",
    "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
    "floating_ip_address": "5.21.11.226",
    "frozen_ip_address": "",
    "description": "my snat rule 01"
  }
}
```

Status Codes

Status Code	Description
200	SNAT rule details queried.

Error Codes

See [Error Codes](#).

4.3.5 Deleting an SNAT Rule

Function

This API is used to delete an SNAT rule.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}/snat_rules/{snat_rule_id}

Table 4-82 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

Request Parameters

Table 4-83 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 204

SNAT rule deleted.

None

Example Requests

```
DELETE https://{NAT_endpoint}/v2/d199ba7e0ba64899b2e81518104b1526/nat_gateways/  
f4dfea98-874a-46f7-aa2a-fb348d0ceb02/snat_rules/a78fb3eb-1654-4710-8742-3fc49d5f04f8
```

Example Responses

None

Status Codes

Status Code	Description
204	SNAT rule deleted.

Error Codes

See [Error Codes](#).

5 APIs for Private NAT Gateways

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.

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 1 to 2000. Default value: 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.
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array of strings	Specifies the private NAT gateway ID.
name	No	Array of strings	Specifies the private NAT gateway name.
description	No	Array of strings	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	No	Array of strings	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
project_id	No	Array of strings	Specifies the project ID.

Parameter	Mandatory	Type	Description
status	No	Array of strings	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.
vpc_id	No	Array of strings	Specifies the ID of the VPC where the private NAT gateway works.
virsubnet_id	No	Array of strings	Specifies the ID of the subnet where the private NAT gateway works.
enterprise_project_id	No	Array of strings	Specifies the ID of the enterprise project that is associated with the private NAT gateway when the private NAT gateway is created.

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.

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.
request_id	String	Specifies the request ID.
page_info	PageInfo object	Specifies the pagination information.

Table 5-5 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID.
project_id	String	Specifies the project ID.
name	String	Specifies the private NAT gateway name.
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
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.
created_at	String	Specifies the time when the private NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.

Parameter	Type	Description
updated_at	String	Specifies the time when the private NAT gateway was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
downlink_vpcs	Array of DownlinkVpc objects	Specifies the VPC where the private NAT gateway works.
tags	Array of Tag objects	Specifies the list of tags.
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.
rule_max	Integer	Specifies the maximum number of rules.
transit_ip_pool_size_max	Integer	Specifies the maximum number of transit IP addresses in a transit IP address pool.

Table 5-6 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway works.
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway works.
ngport_ip_address	String	Specifies the private IP address of the private NAT gateway.

Table 5-7 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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.
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.
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.

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",
      "ngport_ip_address": "10.0.0.17"
    } ],
    "transit_ip_pool_size_max": 1,
    "rule_max": 20
  }, {
    "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",
  "ngport_ip_address": "10.0.0.18"
} ],
"transit_ip_pool_size_max": 1,
"rule_max": 20
},
"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.
gateway_id	Yes	String	Specifies the private NAT gateway ID.

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.

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.
description	No	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Mandatory	Type	Description
spec	No	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise

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.

Table 5-14 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID.
project_id	String	Specifies the project ID.
name	String	Specifies the private NAT gateway name.
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
spec	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
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.
created_at	String	Specifies the time when the private NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the private NAT gateway was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
downlink_vpcs	Array of DownlinkVpc objects	Specifies the VPC where the private NAT gateway works.
tags	Array of Tag objects	Specifies the list of tags.
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.
rule_max	Integer	Specifies the maximum number of rules.
transit_ip_pool_size_max	Integer	Specifies the maximum number of transit IP addresses in a transit IP address pool.

Table 5-15 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway works.
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway works.
ngport_ip_address	String	Specifies the private IP address of the private NAT gateway.

Table 5-16 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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",  
  "vsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70",  
  "ngport_ip_address" : "10.0.0.17"  
} ],  
"transit_ip_pool_size_max" : 1,  
"rule_max" : 20  
},  
"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.
project_id	Yes	String	Specifies the project ID.

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.

Response Parameters

Status code: 204

Private NAT gateway deleted.

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.

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.

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.

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).
spec	No	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
downlink_vpcs	Yes	Array of DownlinkVpcOption objects	Specifies the VPC where the private NAT gateway works.
tags	No	Array of Tag objects	Specifies the tag list.
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 <i>Enterprise Management User Guide</i> .

Table 5-23 DownlinkVpcOption

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	Specifies the ID of the subnet where the private NAT gateway works.
ngport_ip_address	No	String	Specifies the private IP address of the private NAT gateway.

Table 5-24 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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.

Table 5-26 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID.
project_id	String	Specifies the project ID.
name	String	Specifies the private NAT gateway name.
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
spec	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
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.
created_at	String	Specifies the time when the private NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the private NAT gateway was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
downlink_vpcs	Array of DownlinkVpc objects	Specifies the VPC where the private NAT gateway works.
tags	Array of Tag objects	Specifies the list of tags.
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.
rule_max	Integer	Specifies the maximum number of rules.
transit_ip_pool_size_max	Integer	Specifies the maximum number of transit IP addresses in a transit IP address pool.

Table 5-27 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway works.
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway works.
ngport_ip_address	String	Specifies the private IP address of the private NAT gateway.

Table 5-28 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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",
    "spec": "Small",
    "enterprise_project_id": "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "description": "create private nat",
    "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",
    "vsubnet_id": "373979ee-f4f0-46c5-80e3-0fbf72646b70",
    "ngport_ip_address": "192.168.10.190"
  } ],
  "transit_ip_pool_size_max": 1,
  "rule_max": 20
}
```

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.
gateway_id	Yes	String	Specifies the private NAT gateway ID.

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.

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.

Table 5-32 PrivateNat

Parameter	Type	Description
id	String	Specifies the private NAT gateway ID.
project_id	String	Specifies the project ID.
name	String	Specifies the private NAT gateway name.
description	String	Provides supplementary information about the private NAT gateway. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Parameter	Type	Description
spec	String	Specifies the type of the private NAT gateway. The options are: "Small": small Medium: medium Large: large Extra-large: extra-large Extra-xlarge: enterprise
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.
created_at	String	Specifies the time when the private NAT gateway was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the private NAT gateway was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
downlink_vpcs	Array of DownlinkVpc objects	Specifies the VPC where the private NAT gateway works.
tags	Array of Tag objects	Specifies the list of tags.
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.
rule_max	Integer	Specifies the maximum number of rules.
transit_ip_pool_size_max	Integer	Specifies the maximum number of transit IP addresses in a transit IP address pool.

Table 5-33 DownlinkVpc

Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC where the private NAT gateway works.
virsubnet_id	String	Specifies the ID of the subnet where the private NAT gateway works.
ngport_ip_address	String	Specifies the private IP address of the private NAT gateway.

Table 5-34 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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",  
      "ngport_ip_address" : "10.0.0.17"  
    } ],  
    "transit_ip_pool_size_max" : 1,  
    "rule_max" : 20  
  },  
}
```

```
"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.

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 1 to 2000. Default value: 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.
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array of strings	Specifies the DNAT rule ID.
project_id	No	Array of strings	Specifies the project ID.
enterprise_project_id	No	Array of strings	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is created.
description	No	Array of strings	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
gateway_id	No	Array of strings	Specifies the private NAT gateway ID.
transit_ip_id	No	Array of strings	Specifies the ID of the transit IP address.
external_ip_address	No	Array of strings	Specifies the transit IP address.

Parameter	Mandatory	Type	Description
network_interface_id	No	Array of strings	Specifies the port ID of the resource that the NAT gateway is bound to. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
type	No	Array of strings	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 v2 load balancer. • ELBv3: The backend resource is a v3 load balancer. • CUSTOMIZE: The backend resource is a user-defined IP address.
private_ip_address	No	Array of strings	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
protocol	No	Array of strings	Specifies the DNAT rule protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
internal_service_port	No	Array of strings	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	No	Array of strings	Specifies the port number of the transit IP address.

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.

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.
request_id	String	Specifies the request ID.
page_info	PageInfo object	Specifies the pagination information.

Table 5-39 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
project_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_id	String	Specifies the ID of the transit IP address.
gateway_id	String	Specifies the private NAT gateway ID.

Parameter	Type	Description
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer (v2 or v3), or virtual IP address are supported.
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 v2 load balancer. • ELBv3: The backend resource is a v3 load balancer. • CUSTOMIZE: The backend resource is a user-defined IP address.
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.
private_ip_address	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
internal_service_port	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	String	Specifies the port number of the transit IP address.
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is created.
created_at	String	Specifies the time when the DNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the DNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.

Parameter	Type	Description
status	String	Specifies the DNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The DNAT rule is running properly. • FROZEN: The DNAT rule is frozen.

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.
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.
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.

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",
    "status": "ACTIVE"
  }
]
```

```
{, {
  "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",
  "status": "ACTIVE"
}, {
  "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.
dnat_rule_id	Yes	String	Specifies the DNAT rule ID.

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.

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 (<>).
transit_ip_id	No	String	Specifies the ID of the transit IP address.
network_interface_id	No	String	Specifies the port ID of the resource that the NAT gateway is bound to. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address. Note: Either this parameter or private_ip_address must be specified. Otherwise, an error will be reported.

Parameter	Mandatory	Type	Description
private_ip_address	No	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address. Note: Either this parameter or network_interface_id must be specified. Otherwise, an error will be reported.
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.
internal_service_port	No	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	No	String	Specifies the port number of the transit IP address.

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.
request_id	String	Specifies the request ID.

Table 5-46 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
project_id	String	Specifies the project ID.

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 (<>).
transit_ip_id	String	Specifies the ID of the transit IP address.
gateway_id	String	Specifies the private NAT gateway ID.
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer (v2 or v3), or virtual IP address are supported.
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 v2 load balancer. • ELBv3: The backend resource is a v3 load balancer. • CUSTOMIZE: The backend resource is a user-defined IP address.
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.
private_ip_address	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
internal_service_port	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	String	Specifies the port number of the transit IP address.
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is created.

Parameter	Type	Description
created_at	String	Specifies the time when the DNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the DNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
status	String	Specifies the DNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The DNAT rule is running properly. • FROZEN: The DNAT rule is frozen.

Example Requests

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

```
PUT https://{Endpoint}/v3/da261828016849188f4dcc2ef94d9da9/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",
    "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",
    "status": "ACTIVE"
  },
  "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.

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.

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 (<>).
transit_ip_id	Yes	String	Specifies the ID of the transit IP address.
network_inter face_id	No	String	Specifies the port ID of the resource that the NAT gateway is bound to. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address. Note: Either this parameter or private_ip_address must be specified. Otherwise, an error will be reported.
gateway_id	Yes	String	Specifies the private NAT gateway ID.

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.
private_ip_address	No	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address. Note: Either this parameter or network_interface_id must be specified. Otherwise, an error will be reported.
internal_service_port	No	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	No	String	Specifies the port number of the transit IP address.

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.

Table 5-52 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
project_id	String	Specifies the project ID.

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 (<>).
transit_ip_id	String	Specifies the ID of the transit IP address.
gateway_id	String	Specifies the private NAT gateway ID.
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer (v2 or v3), or virtual IP address are supported.
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 v2 load balancer. • ELBv3: The backend resource is a v3 load balancer. • CUSTOMIZE: The backend resource is a user-defined IP address.
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.
private_ip_address	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
internal_service_port	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	String	Specifies the port number of the transit IP address.
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is created.

Parameter	Type	Description
created_at	String	Specifies the time when the DNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the DNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
status	String	Specifies the DNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The DNAT rule is running properly. • FROZEN: The DNAT rule is frozen.

Example Requests

Creating a DNAT rule with the transit IP address ID set to 3faa719d-6d18-4ccb-a5c7-33e65a09663e, the private NAT gateway ID set to 0adefb29-a6c2-48a5-8637-2be67fa03fec, and network interface ID set to dae9393a-b536-491c-a5a2-72edc1104707

```
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",
    "status": "ACTIVE"
  },
}
```

```
"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.
dnat_rule_id	Yes	String	Specifies the DNAT rule ID.

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.

Response Parameters

Status code: 204

DNAT rule deleted.

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.
dnat_rule_id	Yes	String	Specifies the DNAT rule ID.

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.

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.

Table 5-58 PrivateDnat

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
project_id	String	Specifies the project ID.
description	String	Provides supplementary information about the DNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_id	String	Specifies the ID of the transit IP address.
gateway_id	String	Specifies the private NAT gateway ID.
network_interface_id	String	Specifies the network interface ID. Network interfaces of a compute instance, load balancer (v2 or v3), or virtual IP address are supported.
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 v2 load balancer. • ELBv3: The backend resource is a v3 load balancer. • CUSTOMIZE: The backend resource is a user-defined IP address.
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.
private_ip_address	String	Specifies the port IP address that the NAT gateway uses. The resource can be a compute instance, load balancer (v2 or v3), or virtual IP address.
internal_service_port	String	Specifies the port number of the resource, which can be a compute instance, load balancer (v2 or v3), or virtual IP address.
transit_service_port	String	Specifies the port number of the transit IP address.

Parameter	Type	Description
enterprise_project_id	String	Specifies the ID of the enterprise project that is associated with the DNAT rule when the DNAT rule is created.
created_at	String	Specifies the time when the DNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the DNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
status	String	Specifies the DNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The DNAT rule is running properly. • FROZEN: The DNAT rule is frozen.

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",  
    "status": "ACTIVE"  
  },  
  "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.

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 1 to 2000. Default value: 2000

Parameter	Mandatory	Type	Description
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.
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array of strings	Specifies the SNAT rule ID.
project_id	No	Array of strings	Specifies the project ID.
description	No	Array of strings	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
gateway_id	No	Array of strings	Specifies the private NAT gateway ID.
cidr	No	Array of strings	Specifies the CIDR block that matches the SNAT rule.
virsubnet_id	No	Array of strings	Specifies the ID of the subnet that matches the SNAT rule.
transit_ip_id	No	Array of strings	Specifies the ID of the transit IP address.
transit_ip_address	No	Array of strings	Specifies the transit IP address.
enterprise_project_id	No	Array of strings	Specifies the ID of the enterprise project that is associated with the SNAT rule when the SNAT rule is created.

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.

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.
page_info	PageInfo object	Specifies the pagination information.
request_id	String	Specifies the request ID.

Table 5-63 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
project_id	String	Specifies the project ID.
gateway_id	String	Specifies the private NAT gateway ID.
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.

Parameter	Type	Description
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_associations	Array of AssociatedTransitIp objects	Specifies the list of details of associated transit IP addresses.
created_at	String	Specifies the time when the SNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the SNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
enterprise_project_id	String	Specifies the enterprise project ID.
status	String	Specifies the SNAT rule status of a private NAT gateway. The value can be: ● ACTIVE: The SNAT rule is running properly. ● FROZEN: The SNAT rule is frozen.

Table 5-64 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address.
transit_ip_address	String	Specifies the transit IP address.

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.

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.
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.

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",
    "status": "ACTIVE"
  }, {
    "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",
    "status": "ACTIVE"
  } ],
  "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.
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

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.

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.

Table 5-69 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
project_id	String	Specifies the project ID.
gateway_id	String	Specifies the private NAT gateway ID.
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.
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_associations	Array of AssociatedTransitIp objects	Specifies the list of details of associated transit IP addresses.
created_at	String	Specifies the time when the SNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the SNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.

Parameter	Type	Description
enterprise_project_id	String	Specifies the enterprise project ID.
status	String	Specifies the SNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The SNAT rule is running properly. • FROZEN: The SNAT rule is frozen.

Table 5-70 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address.
transit_ip_address	String	Specifies the transit IP address.

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",  
    "status": "ACTIVE"  
  },  
  "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.
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

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.

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.
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).

Response Parameters

Status code: 200

Table 5-75 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.
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.
project_id	String	Specifies the project ID.
gateway_id	String	Specifies the private NAT gateway ID.

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.
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_associations	Array of AssociatedTransitIp objects	Specifies the list of details of associated transit IP addresses.
created_at	String	Specifies the time when the SNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the SNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
enterprise_project_id	String	Specifies the enterprise project ID.
status	String	Specifies the SNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The SNAT rule is running properly. • FROZEN: The SNAT rule is frozen.

Table 5-77 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address.
transit_ip_address	String	Specifies the transit IP address.

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": "ACTIVE"  
  }  
}
```

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.

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.

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.
cidr	No	String	Specifies the CIDR block that matches the SNAT rule. Constraint: Either this parameter or virsubnet_id must be specified.
virsubnet_id	No	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified.
description	No	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_ids	Yes	Array of strings	Specifies the IDs of the transit IP addresses. Constraints: A maximum number of 20 IDs is allowed.

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.

Table 5-83 PrivateSnat

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
project_id	String	Specifies the project ID.

Parameter	Type	Description
gateway_id	String	Specifies the private NAT gateway ID.
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.
virsubnet_id	String	Specifies the ID of the subnet that matches the SNAT rule. Constraint: Either this parameter or cidr must be specified.
description	String	Provides supplementary information about the SNAT rule. The description can contain up to 255 characters and cannot contain angle brackets (<>).
transit_ip_associations	Array of AssociatedTransitIp objects	Specifies the list of details of associated transit IP addresses.
created_at	String	Specifies the time when the SNAT rule was created. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the SNAT rule was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
enterprise_project_id	String	Specifies the enterprise project ID.
status	String	Specifies the SNAT rule status of a private NAT gateway. The value can be: • ACTIVE: The SNAT rule is running properly. • FROZEN: The SNAT rule is frozen.

Table 5-84 AssociatedTransitIp

Parameter	Type	Description
transit_ip_id	String	Specifies the ID of the transit IP address.

Parameter	Type	Description
transit_ip_address	String	Specifies the transit IP address.

Example Requests

Creating an SNAT rule (Setting **description** to **my_snat_rule01**, **gateway_id** to **80da6f26-94eb-4537-97f0-5a56f4d04cfb**, **virsubnet_id** to **5b9ea497-727d-4ad0-a99e-3984b3f5aaed**, and **transit_ip_ids** to **36a3049a-1682-48b3-b1cf-cb986a3350ef**)

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": "af4d4bb83-7ca0-4ed1-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",
    "status": "ACTIVE"
  },
  "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.
snat_rule_id	Yes	String	Specifies the SNAT rule ID.

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.

Response Parameters

Status code: 204

SNAT rule deleted.

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.

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 1 to 2000. Default value: 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.
page_reverse	No	Boolean	Specifies whether to query resources on the previous page.
id	No	Array of strings	Specifies the ID of the transit IP address.
project_id	No	Array of strings	Specifies the project ID.
network_interface_id	No	Array of strings	Specifies the network interface ID of the transit IP address.
ip_address	No	Array of strings	Specifies the transit IP address.
gateway_id	No	Array of strings	Specifies the ID of the private NAT gateway associated with the transit IP address.
enterprise_project_id	No	Array of strings	Specifies the ID of the enterprise project that is associated with the transit IP address when the transit IP address is assigned.
virsubnet_id	No	Array of strings	Specifies the subnet ID of the current tenant.
transit_subnet_id	No	Array of strings	Specifies the transit subnet ID.

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.

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.
page_info	PageInfo object	Specifies the pagination information.
request_id	String	Specifies the request ID.

Table 5-91 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address.
project_id	String	Specifies the project ID.
network_interface_id	String	Specifies the network interface ID of the transit IP address.
ip_address	String	Specifies the transit IP address.
created_at	String	Specifies the time when the transit IP address was assigned. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the transit IP address was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.

Parameter	Type	Description
virsubnet_id	String	Specifies the subnet ID of the current tenant. Constraint: Either this parameter or transit_subnet_id must be specified. The default value is an empty string.
tags	Array of Tag objects	Specifies the list of tags.
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address.
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.
status	String	Specifies the transit IP address status. The value can be: • ACTIVE: The transit IP address is running properly. • FROZEN: The transit IP address is frozen.

Table 5-92 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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.

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.
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.

Example Requests

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

Example Responses

Status code: 200

Transit IP addresses queried.

```
{
  "request_id": "747a911c17067a39692f75ac146fb47e",
  "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",
    "status": "ACTIVE",
    "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",
    "status": "ACTIVE",
    "tags": [ {
      "key": "key1",
      "value": "value1"
    } ]
  },
  ],
  "page_info": {
    "previous_marker": "56a18bb5-5861-4eaf-a284-b7fbdaf6502f",
    "current_count": 2
  }
}
```

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.
project_id	Yes	String	Specifies the project ID.

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.

Response Parameters

Status code: 204

Transit IP address released.

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.

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.

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.
ip_address	No	String	Specifies the transit IP address.
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.
tags	No	Array of Tag objects	Specifies the tag of the transit IP address.

Table 5-100 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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.

Table 5-102 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address.
project_id	String	Specifies the project ID.
network_interface_id	String	Specifies the network interface ID of the transit IP address.
ip_address	String	Specifies the transit IP address.
created_at	String	Specifies the time when the transit IP address was assigned. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the transit IP address was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.

Parameter	Type	Description
virsubnet_id	String	Specifies the subnet ID of the current tenant. Constraint: Either this parameter or transit_subnet_id must be specified. The default value is an empty string.
tags	Array of Tag objects	Specifies the list of tags.
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address.
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.
status	String	Specifies the transit IP address status. The value can be: • ACTIVE: The transit IP address is running properly. • FROZEN: The transit IP address is frozen.

Table 5-103 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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"  
    } ],  
    "status" : "ACTIVE"  
  },  
  "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.
transit_ip_id	Yes	String	Specifies the ID of the transit IP address.

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.

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.

Table 5-107 TransitIp

Parameter	Type	Description
id	String	Specifies the ID of the transit IP address.
project_id	String	Specifies the project ID.
network_interface_id	String	Specifies the network interface ID of the transit IP address.

Parameter	Type	Description
ip_address	String	Specifies the transit IP address.
created_at	String	Specifies the time when the transit IP address was assigned. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
updated_at	String	Specifies the time when the transit IP address was updated. It is a UTC time in <i>yyyy-mm-ddThh:mm:ssZ</i> format.
virsubnet_id	String	Specifies the subnet ID of the current tenant. Constraint: Either this parameter or transit_subnet_id must be specified. The default value is an empty string.
tags	Array of Tag objects	Specifies the list of tags.
gateway_id	String	Specifies the ID of the private NAT gateway associated with the transit IP address.
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.
status	String	Specifies the transit IP address status. The value can be: • ACTIVE: The transit IP address is running properly. • FROZEN: The transit IP address is frozen.

Table 5-108 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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",
    "status": "ACTIVE",
    "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.
- Tag Management Service (TMS) uses this API to filter 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.

Request Parameters

Table 5-110 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

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. When querying resources on the first page, you do not need to specify this parameter. When querying resources on subsequent pages, set this parameter to the value returned in the response body for querying resources on the previous page. 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.

Parameter	Mandatory	Type	Description
limit	No	String	Specifies the number of records to be queried. This parameter is not available when action is set to count . If action is set to filter , the default value is 1000 , which is also the maximum value. The minimum value is 1 . The value cannot be a negative number.
action	Yes	String	Specifies the operation to be performed. The value can be filter or count. The value filter indicates pagination query. The value count indicates that the total number of query results meeting the search criteria will be returned.
matches	No	Array of Match objects	Specifies the search field. The tag key is the field to be matched, for example, resource_name . The tag value indicates the value to be matched. This field is a fixed dictionary value. You can determine whether fuzzy match is required based on different fields. For example, if key is set to resource_name , fuzzy search (case insensitive) is used by default. If value is an empty string, exact match is used. If key is set to resource_id , exact match is used. Currently, only resource_name is supported.

Parameter	Mandatory	Type	Description
not_tags	No	Array of Tags objects	The resources to be queried do not contain tags listed in not_tags . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that do not contain the tags listed in not_tags will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.
tags	No	Array of Tags objects	The resources to be queried contain tags listed in tags . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that contain the tags listed in <i>*tags</i> will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.

Parameter	Mandatory	Type	Description
tags_any	No	Array of Tags objects	The resources to be queried contain any tag listed in tags_any . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that contain any tag listed in <i>*tags_any</i> will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.
not_tags_any	No	Array of Tags objects	The resources to be queried do not contain any tag listed in not_tags_any . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that do not contain any tag listed in not_tags_any will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.

Table 5-112 Match

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key used to search for resources.

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value used to search for resources.

Table 5-113 Tags

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. (The system does not verify key when searching for resources.) key cannot be left blank or be an empty string. key cannot contain spaces. Before using the value of key , delete spaces before and after the value.
values	Yes	Array of strings	Lists tag values. Each value can contain a maximum of 255 Unicode characters. Before verifying and using values, delete single-byte character spaces before and after each value. The value can be an empty array but cannot be left blank. If values is an empty array, any value can be queried. The values are in the OR relationship. The system verifies the length, but not the character set of this parameter when searching for resources.

Response Parameters

Status code: 200

Table 5-114 Response body parameters

Parameter	Type	Description
resources	Array of Resource objects	Specifies the resource list.
request_id	String	Specifies the request ID.

Parameter	Type	Description
total_count	Integer	Specifies the total number of records.

Table 5-115 Resource

Parameter	Type	Description
resource_detail	Object	Specifies the resource details. This parameter is used for extension and is left blank by default.
resource_id	String	Specifies the resource ID.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.
tags	Array of ResourceTag objects	Tags of resources. If there is no tag, the value is an empty array by default.

Table 5-116 ResourceTag

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

Example Requests

- Querying private NAT gateways by tag (Setting **action** to **filter** and **limit** to **1000**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/private-nat-gateways/resource_instances/action
```

```
{
  "offset": "0",
  "limit": "1000",
  "action": "filter",
  "not_tags_any": [ {
    "key": "owner",
    "values": "tag_1_value"
  } ]
}
```

- 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",
}
```

```
"tags": [ {  
  "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 **filter**
- Example 2: the response body when **action** is set to **count**
- Example 1

```
{  
  "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  
}
```

- Example 2

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

Status Codes

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

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 project.
- TMS uses this API to list tags of all private NAT gateways owned by a tenant, and provides 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.

Request Parameters

Table 5-118 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 5-119 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.

Parameter	Type	Description
tags	Array of Tags objects	Specifies the tags.

Table 5-120 Tags

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. (The system does not verify key when searching for resources.) key cannot be left blank or be an empty string. key cannot contain spaces. Before using the value of key , delete spaces before and after the value.
values	Array of strings	Lists tag values. Each value can contain a maximum of 255 Unicode characters. Before verifying and using values, delete single-byte character spaces before and after each value. The value can be an empty array but cannot be left blank. If values is an empty array, any value can be queried. The values are in the OR relationship. The system verifies the length, but not the character set of this parameter when searching for resources.

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" ]
  }, {
    "key" : "key1",
    "values" : [ "value1" ]
  }, {
    "key" : "key2",
```

```
"values" : [ "value2" ]  
} ]  
}
```

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 private NAT gateway.
- TMS uses this API to query all tags of a 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.
resource_id	Yes	String	Specifies the private NAT gateway ID.

Request Parameters

Table 5-122 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 5-123 Response body parameters

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

Table 5-124 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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

- This API is used to add tags to a private NAT gateway.
- A private NAT gateway can have up to 20 tags.
- This API is idempotent.
- If a tag to be added has the same key as an existing tag, the tag will be added 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.
resource_id	Yes	String	Specifies the private NAT gateway ID.

Request Parameters

Table 5-126 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 5-127 Request body parameters

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

Table 5-128 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

Response Parameters

Status code: 204

Tag added.

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 or Deleting Tags to or from a Private NAT Gateway

Function

- This API is used to batch add or delete tags to or 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 20 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.
resource_id	Yes	String	Specifies the private NAT gateway ID.

Request Parameters

Table 5-130 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 5-131 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the operation. The value can be one of the following: • create • delete
tags	Yes	Array of Tag objects	Specifies the tag list.

Table 5-132 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

Response Parameters

Status code: 204

Tags added or deleted.

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 from 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, perform the encodeURI operation. The server must perform decodeURI on the API URI. If the key of the tag to be deleted does not exist, 404 will be displayed. The 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.
project_id	Yes	String	Specifies the project ID.
resource_id	Yes	String	Specifies the private NAT gateway ID.

Request Parameters

Table 5-134 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 204

Tag deleted.

None

Example Requests

This API is used to delete 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 by Tag

Function

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

Request Parameters

Table 5-136 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

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. When querying resources on the first page, you do not need to specify this parameter. When querying resources on subsequent pages, set this parameter to the value returned in the response body for querying resources on the previous page. 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 .

Parameter	Mandatory	Type	Description
limit	No	String	Specifies the number of records to be queried. This parameter is not available when action is set to count . If action is set to filter , the default value is 1000 , which is also the maximum value. The minimum value is 1 . The value cannot be a negative number.
action	Yes	String	Specifies the operation to be performed. The value can be filter or count. The value filter indicates pagination query. The value count indicates that the total number of query results meeting the search criteria will be returned.
matches	No	Array of Match objects	Specifies the search field. The tag key is the field to be matched, for example, resource_name . The tag value indicates the value to be matched. This field is a fixed dictionary value. You can determine whether fuzzy match is required based on different fields. For example, if key is set to resource_name , fuzzy search (case insensitive) is used by default. If value is an empty string, exact match is used. If key is set to resource_id , exact match is used. Currently, only resource_name is supported.

Parameter	Mandatory	Type	Description
not_tags	No	Array of Tags objects	The resources to be queried do not contain tags listed in not_tags . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that do not contain the tags listed in not_tags will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.
tags	No	Array of Tags objects	The resources to be queried contain tags listed in tags . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that contain the tags listed in <i>*tags</i> will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.

Parameter	Mandatory	Type	Description
tags_any	No	Array of Tags objects	The resources to be queried contain any tag listed in tags_any . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that contain any tag listed in <i>*tags_any</i> will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.
not_tags_any	No	Array of Tags objects	The resources to be queried do not contain any tag listed in not_tags_any . Each resource to be queried contains a maximum of 20 keys. Each tag key can have a maximum of 20 tag values. The structure body cannot be missing, and the key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique. Resources that do not contain any tag listed in not_tags_any will be returned. Keys are in AND relationship, and values in a tag are in OR relationship. If this parameter is not specified, all resources will be returned.

Table 5-138 Match

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key used to search for resources.

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value used to search for resources.

Table 5-139 Tags

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. (The system does not verify key when searching for resources.) key cannot be left blank or be an empty string. key cannot contain spaces. Before using the value of key , delete spaces before and after the value.
values	Yes	Array of strings	Lists tag values. Each value can contain a maximum of 255 Unicode characters. Before verifying and using values, delete single-byte character spaces before and after each value. The value can be an empty array but cannot be left blank. If values is an empty array, any value can be queried. The values are in the OR relationship. The system verifies the length, but not the character set of this parameter when searching for resources.

Response Parameters

Status code: 200

Table 5-140 Response body parameters

Parameter	Type	Description
resources	Array of Resource objects	Specifies the resource list.
request_id	String	Specifies the request ID.

Parameter	Type	Description
total_count	Integer	Specifies the total number of records.

Table 5-141 Resource

Parameter	Type	Description
resource_detail	Object	Specifies the resource details. This parameter is used for extension and is left blank by default.
resource_id	String	Specifies the resource ID.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.
tags	Array of ResourceTag objects	Tags of resources. If there is no tag, the value is an empty array by default.

Table 5-142 ResourceTag

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

Example Requests

- Querying transit IP addresses by tag (Setting **action** to **filter** and **limit** to **1000**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-ips/resource_instances/  
action
```

```
{  
  "offset": "0",  
  "limit": "1000",  
  "action": "filter",  
  "not_tags_any": [ {  
    "key": "owner",  
    "values": "tag_1_value"  
  } ]  
}
```

- 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",
```

```
"tags": [ {
  "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 **filter**
- Example 2: the response body when **action** is set to **count**
- Example 1

```
{
  "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
}
```

- Example 2

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

Status Codes

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

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 project.
- TMS uses this API to list tags of all transit IP addresses owned by a tenant. TMS also provides tag association when users 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.

Request Parameters

Table 5-144 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 5-145 Response body parameters

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

Table 5-146 Tags

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. (The system does not verify key when searching for resources.) key cannot be left blank or be an empty string. key cannot contain spaces. Before using the value of key , delete spaces before and after the value.
values	Array of strings	Lists tag values. Each value can contain a maximum of 255 Unicode characters. Before verifying and using values, delete single-byte character spaces before and after each value. The value can be an empty array but cannot be left blank. If values is an empty array, any value can be queried. The values are in the OR relationship. The system verifies the length, but not the character set of this parameter when searching for resources.

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" ]
  }, {
```

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

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.
resource_id	Yes	String	Specifies the ID of the transit IP address.

Request Parameters

Table 5-148 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 200

Table 5-149 Response body parameters

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

Table 5-150 Tag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

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

- This API is used to add a tag to a transit IP address.
- A transit IP address can have up to 20 tags.
- This API is idempotent.
- If a tag to be added has the same key as an existing tag, the tag will be added 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.
resource_id	Yes	String	Specifies the ID of the transit IP address.

Request Parameters

Table 5-152 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 5-153 Request body parameters

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

Table 5-154 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

Response Parameters

Status code: 204

Tag added.

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 or Deleting Tags to or from a Transit IP Address

Function

- This API is used to batch add or delete tags to or from a 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 20 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.
resource_id	Yes	String	Specifies the ID of the transit IP address.

Request Parameters

Table 5-156 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Table 5-157 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the operation. The value can be one of the following: • create • delete
tags	Yes	Array of Tag objects	Specifies the tag list.

Table 5-158 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. A key can contain up to 128 Unicode characters. key cannot be left blank.

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

Response Parameters

Status code: 204

Tags added or deleted.

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 a Tag 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, perform the encodeURI operation. The server must perform decodeURI on the API URI. If the key of the tag to be deleted does not exist, 404 will be displayed. The 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.
project_id	Yes	String	Specifies the project ID.
resource_id	Yes	String	Specifies the ID of the transit IP address.

Request Parameters

Table 5-160 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. It is a response to the API for obtaining 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.

Response Parameters

Status code: 204

Tag deleted.

None

Example Requests

Deleting a tag 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	Tag deleted.

Error Codes

See [Error Codes](#).

6 Permissions Policies and Supported Actions

6.1 Introduction

This section describes fine-grained permissions management for your NAT gateways. If your account does not need individual IAM users, then you may skip this section.

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

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

NOTE

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

Each account has all the permissions required to call all APIs, but IAM users must be granted the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user queries NAT gateways using an API, the user must have been granted permissions that allow the **nat:natGateways:list** action.

Supported Actions

GaussDB(for openGauss) provides system-defined policies that can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- **Permissions:** Statements in a policy that allow or deny certain operations.
- **APIs:** REST APIs that can be called by a user who has been granted specific permissions.
- **Actions:** added to a custom policy to control permissions for specific operations.
- **IAM projects or enterprise projects:** Type of projects in which policies can be used to grant permissions. A policy can be applied to IAM projects, enterprise projects, or both. Policies that contain actions for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and only take effect for IAM.

6.2 Public NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating a Public NAT Gateway	POST /v2/{project_id}/nat_gateways	nat:natGateways:create	√	√
Querying Public NAT Gateways	GET /v2/{project_id}/nat_gateways	nat:natGateways:list	√	√
Querying Details About a Specific Public NAT Gateway	GET /v2/{project_id}/nat_gateways/{nat_gateway_id}	nat:natGateways:get	√	√
Updating a Public NAT Gateway	PUT /v2/{project_id}/nat_gateways/{nat_gateway_id}	nat:natGateways:update	√	√

Permission	API	Action	IAM Project	Enterprise Project
Deleting a Public NAT Gateway	DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}	nat:natGateways:delete	√	√

6.3 SNAT Rules of Public NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating an SNAT Rule	POST /v2/{project_id}/snat_rules	nat:snatRules:create	√	√
Querying SNAT Rules	GET /v2/{project_id}/snat_rules	nat:snatRules:list	√	√
Querying Details About an SNAT Rule	GET /v2/{project_id}/snat_rules/{snat_rule_id}	nat:snatRules:get	√	√
Deleting an SNAT Rule	DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}/snat_rules/{snat_rule_id}	nat:snatRules:delete	√	√
Updating an SNAT Rule	PUT /v2/{project_id}/snat_rules/{snat_rule_id}	nat:snatRules:update	√	√

6.4 DNAT Rules of Public NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating a DNAT Rule	POST /v2/{project_id}/dnat_rules	nat:dnatRules:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
Creating DNAT Rules in Batches	POST /v2/{project_id}/dnat_rules/batch	nat:dnatRules:create	√	√
Querying DNAT Rules	GET /v2/{project_id}/dnat_rules	nat:dnatRules:list	√	√
Querying Details About a DNAT Rule	GET /v2/{project_id}/dnat_rules/{dnat_rule_id}	nat:dnatRules:get	√	√
Deleting a DNAT Rule	DELETE /v2/{project_id}/nat_gateways/{nat_gateway_id}/dnat_rules/{dnat_rule_id}	nat:dnatRules:delete	√	√
Updating a DNAT Rule	PUT /v2/{project_id}/dnat_rules/{dnat_rule_id}	nat:dnatRules:update	√	√

7 Appendixes

7.1 Error Codes

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1207	Gateway %s already has %d rules, the maximum number of rule for spec %s is %d. Downgrade is forbidden. //Added 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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1501	Either virSubnet(net work) 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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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. // Privately(Fixed Ip) %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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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 request 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 rule'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 dnaturules error limit is invalid. //get dnaturules 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 request 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 dnaturules error limit is invalid. //get dnaturules 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 dn timerules 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.	Vtep_ip must be specified.	Contact technical support.
400	VPC.2059	Floating Ip % (fip)s is frozen.	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 authentication fail.	Real-name authentication 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 exist.	The VPC is not found.	Check whether the VPC ID is valid or whether the VPC is available.

7.2 Status Codes

Normal Response Code	Type	Description
200	OK	Specifies the normal response code for the GET and PUT operations.

Normal Response Code	Type	Description
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.
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.

7.3 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- [Obtain the Project ID by Calling an API](#)
- [Obtain the Project ID from the Console](#)

Obtain the Project ID by Calling an API

You can obtain a project ID by calling the API used to [query projects based on specified criteria](#).

The API used to obtain a project ID is GET `https://{Endpoint}/v3/projects`. {Endpoint} is the IAM endpoint and can be obtained from Regions and Endpoints. For details about API authentication, see [Authentication](#).

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

```
{
  "projects": [
    {
      "domain_id": "65ewtrgaggshhk1223245sghjlse684b",
      "is_domain": false,
      "parent_id": "65ewtrgaggshhk1223245sghjlse684b",
      "name": "project_name",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4adasfjljaaakla12334jklga9sasfg"
      },
      "id": "a4adasfjljaaakla12334jklga9sasfg",
      "enabled": true
    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}
```

Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.
On the **API Credentials** page, view the project ID in the project list.

7.4 Resource Status Description

Table 7-1 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.