NAT Gateway

API Reference

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1 Before You Start

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**.

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**.

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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 account name, 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.

  For details, see **Region and AZ**.

- 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.

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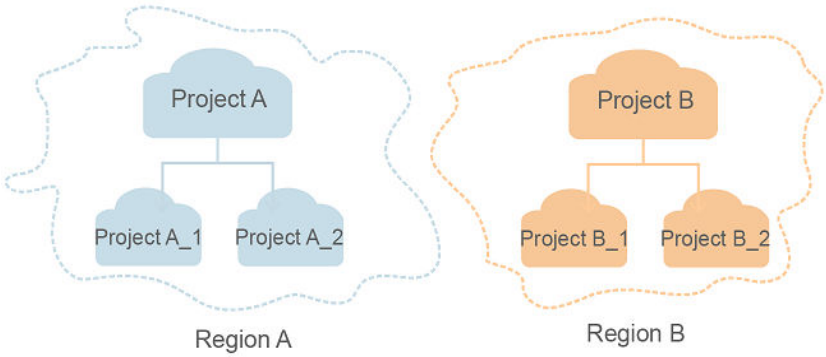
Figure 1-1 Project isolation model



- 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**.

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2 API Overview

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

Selecting an API Type

NAT Gateway API can be of v2.0 and v2. v2 APIs are of a later version and will be continuously optimized. You are advised to use v2 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.
Public NAT gateway tags	Tag public NAT gateways. Tags help you manage public NAT gateways. You can query, add, and delete tags of public NAT gateways.

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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.
	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.
Public NAT gateway tags	Querying Public NAT Gateways by Tag	Query public NAT gateways by tag.
	Batch Adding or Deleting Tags to or from a Public NAT Gateway	Batch add or delete tags to or from a public NAT gateway.
	Adding a Tag to a Public NAT Gateway	Add a tag to a public NAT gateway.
	Deleting a Tag from a Public NAT Gateway	Deleting a tag from a public NAT gateway.

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Type	API	Allow You to
	Querying Tags of a Public NAT Gateway	Query tags of a public NAT gateway.
	Querying Tags of All Public NAT Gateways in a Project	Query tags of all public NAT gateways owned by a tenant in a project.

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.
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.

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Type	API	Allow You to
	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.
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.

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Type	API	Allow You to
	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.

API v2.0

Table 2-5 NAT gateway API v2.0

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, and delete SNAT rules, including creating an SNAT rule, querying SNAT rules, querying details of an SNAT rule, and deleting an SNAT rule.
DNAT rules	Create, query, and delete DNAT rules, including creating a DNAT rule, querying DNAT rules, querying details of a DNAT rule, and deleting a DNAT rule.

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Table 2-6 NAT Gateway API (v2.0) description

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.
	Updating a Public NAT Gateway	Update a public NAT gateway.
	Deleting a Public NAT Gateway	Delete a public NAT gateway.
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.
	Deleting an SNAT Rule	Delete an SNAT rule.
DNAT rules	Creating a DNAT Rule	Create a DNAT rule.
	Querying DNAT Rules	Query DNAT rules.
	Querying Details of a DNAT Rule	Query details of a DNAT rule.
	Deleting a DNAT Rule	Delete a DNAT rule.

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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. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

A request URI is in the following format:

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

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

Table 3-1 URI parameter description

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**. For example, the endpoint of IAM in the **CN North-Beijing1** region is **iam.cn-north-1.myhuaweicloud.com**.
resource-path	Access path of an API for performing an operation. Obtain the path from the URI of an API. For example, the **resource-path** of the API used to obtain a user token is **/v3/auth/tokens**.
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of "*Parameter name=Parameter value*". For example, **? limit=10** indicates that a maximum of 10 data records will be displayed.

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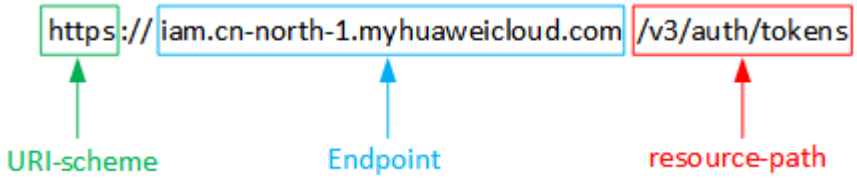
For example, to obtain an IAM token in the **CN North-Beijing1** region, obtain the endpoint of IAM (**iam.cn-north-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
```

Figure 3-1 Example URI



NOTE

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

Request Methods

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

Table 3-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.
PATCH	Requests the server to update partial content of a resource. If the resource does not exist, a new resource will be created.

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

```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
```

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Request Header

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

Common request header fields are as follows.

Table 3-3 Common request header fields

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

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Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in **Obtaining a Project ID**.	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for **obtaining a user token** (only this API 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: MIIPAgYJKoZIhvcNAQc-Co...ggg1BBIINPXsidG9rZ

NOTE

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

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

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

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

(Optional) Request Body

This part is optional. The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header.

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

In the case of the API used to **obtain a user token**, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ********* (login password), and *xxxxxxxxxxxxxxxxx* (project name) with the actual values. For example, the value of *xxxxxxxxxxxxxxxxx* can be **cn-north-1**. Obtain a project name from **Regions and Endpoints**.

NOTE

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

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

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

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

3.2 Authentication

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

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

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Token-based Authentication

NOTE

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

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API.

You can obtain a token by calling the **Obtaining User Token** API. When you call the API, set **auth.scope** in the request body to **project**.

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

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

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

AK/SK-based Authentication

NOTE

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

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

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

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

NOTE

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

3.3 Response

Status Code

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

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

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

Response Header

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

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

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

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(Optional) Response Body

The body of a response is often returned in structured format as specified in the **Content-Type** header field. The response body transfers content except the response header.

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

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

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

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

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

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4 APIs of Public NAT Gateways

4.1 Public NAT Gateway Tags (V3)

4.1.1 Querying Public NAT Gateways by Tag

Function

- This API is used to query public NAT gateways by tag.
- Tag Management Service (TMS) uses this API to filter and list public NAT gateways.
- By default, public NAT gateways and their tags are sorted by creation time in descending order.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/nat_gateways/resource_instances/action

Table 4-1 Path Parameters

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

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Request Parameters

Table 4-2 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 4-3 Request body parameters

Parameter	Mandatory	Type	Description
tags	No	Array of **PublicTag** 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 **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.

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Parameter	Mandatory	Type	Description
tags_any	No	Array of **PublicTag** 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 **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.
not_tags	No	Array of **PublicTag** 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.

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Parameter	Mandatory	Type	Description
not_tags_any	No	Array of **PublicTag** 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.
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.
offset	No	String	Specifies the index position. The query starts from the next piece of data indexed by **offset**. This parameter is not required when you query data on the first page. The value in the response returned for querying data on the previous page will be included in this parameter for querying data on subsequent pages. This parameter is not available when **action** is set to **count**. When **action** is set to **filter**, the value must be a positive number, and the default value is **0**.

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Parameter	Mandatory	Type	Description
action	Yes	String	• Specifies the operation to be performed. The value can only be **filter** or **count**. • **filter** indicates pagination query. **count** indicates that the total number of query results meeting the search criteria will be returned.
matches	No	Array of **PublicMatch** objects	• Specifies the search criteria. The tag key is the field to match, for example, **resource_name**. The tag value indicates the matched value. 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.

Table 4-4 PublicTag

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. (The system does not verify **key** when searching for resources.) **key** cannot be left blank, be an empty string, or be only spaces. Before using **key**, delete spaces before and after the value.

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Parameter	Mandatory	Type	Description
values	Yes	Array of strings	• Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification, delete spaces before and after the value. Note the following when adding a tag: • The asterisk (*) is a reserved character. The value can be empty but cannot be left blank. • If a tag value starts with *, the string following * is fuzzily matched. • If **values** is left blank, it indicates **any_value** (querying any value). The resources containing one or more values listed in **values** will be found and displayed.

Table 4-5 PublicMatch

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can only be **resource_name**.
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters.

Response Parameters

Status code: 200

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Table 4-6 Response body parameters

Parameter	Type	Description
resources	Array of **PublicResource** objects	Specifies the resource object list. For details, see the **Resource** field description.
total_count	Integer	Specifies the total number of resources.

Table 4-7 PublicResource

Parameter	Type	Description
resource_id	String	Specifies the resource ID.
resource_detail	Object	Specifies resource details. The value is a resource object used for extension. This parameter is left blank by default.
tags	Array of **PublicResourceTag** objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned. For details, see the **ResourceTag** field description.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

Table 4-8 PublicResourceTag

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. **key** cannot be left blank. A key cannot contain ASCII characters (0–31 decimal) nor the following characters: * < > \ =\
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters and can be an empty string. A value cannot contain ASCII characters (0–31 decimal) nor the following special characters: * < > \ =

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Example Requests

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

```
POST https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/
resource_instances/action

{
  "offset" : "0",
  "limit" : "1000",
  "action" : "filter",
  "matches" : [ {
    "key" : "resource_name",
    "value" : "nat_gateways"
  } ],
  "not_tags" : [ {
    "key" : "key1",
    "values" : [ "value2" ]
  } ],
  "tags" : [ {
    "key" : "key2",
    "values" : [ "value4" ]
  } ],
  "tags_any" : [ {
    "key" : "key3",
    "values" : [ "value6" ]
  } ],
  "not_tags_any" : [ {
    "key" : "key4",
    "values" : [ "value8" ]
  } ]
}
```

- Querying public NAT gateways (Setting **action** to **count**)

```
POST https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/
resource_instances/action

{
  "action" : "count",
  "matches" : [ {
    "key" : "resource_name",
    "value" : "nat_gateways"
  } ],
  "not_tags" : [ {
    "key" : "key1",
    "values" : [ "value2" ]
  } ],
  "tags" : [ {
    "key" : "key2",
    "values" : [ "value4" ]
  } ],
  "tags_any" : [ {
    "key" : "key3",
    "values" : [ "value6" ]
  } ],
  "not_tags_any" : [ {
    "key" : "key4",
    "values" : [ "value8" ]
  } ]
}
```

Example Responses

Status code: 200

- Query operation succeeded.

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- 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" : "key2",
      "value" : "value4"
    }, {
      "key" : "key2",
      "value" : "value3"
    } ]
  } ],
  "total_count" : 1000
}
```

- Example 2

```
{
  "total_count" : 1000
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListNatGatewayByTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
```

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```
            .withCredential(auth)
            .withRegion(NatRegion.valueOf("<YOUR REGION>"))
            .build();
        ListNatGatewayByTagRequest request = new ListNatGatewayByTagRequest();
        ListNatsByTagsRequestBody body = new ListNatsByTagsRequestBody();
        List<PublicMatch> listbodyMatches = new ArrayList<>();
        listbodyMatches.add(
            new PublicMatch()
                .withKey("resource_name")
                .withValue("nat_gateways")
        );
        List<String> listNotTagsAnyValues = new ArrayList<>();
        listNotTagsAnyValues.add("value8");
        List<PublicTag> listbodyNotTagsAny = new ArrayList<>();
        listbodyNotTagsAny.add(
            new PublicTag()
                .withKey("key4")
                .withValues(listNotTagsAnyValues)
        );
        List<String> listNotTagsValues = new ArrayList<>();
        listNotTagsValues.add("value2");
        List<PublicTag> listbodyNotTags = new ArrayList<>();
        listbodyNotTags.add(
            new PublicTag()
                .withKey("key1")
                .withValues(listNotTagsValues)
        );
        List<String> listTagsAnyValues = new ArrayList<>();
        listTagsAnyValues.add("value6");
        List<PublicTag> listbodyTagsAny = new ArrayList<>();
        listbodyTagsAny.add(
            new PublicTag()
                .withKey("key3")
                .withValues(listTagsAnyValues)
        );
        List<String> listTagsValues = new ArrayList<>();
        listTagsValues.add("value4");
        List<PublicTag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new PublicTag()
                .withKey("key2")
                .withValues(listTagsValues)
        );
        body.withMatches(listbodyMatches);
        body.withAction("filter");
        body.withOffset("0");
        body.withLimit("1000");
        body.withNotTagsAny(listbodyNotTagsAny);
        body.withNotTags(listbodyNotTags);
        body.withTagsAny(listbodyTagsAny);
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
            ListNatGatewayByTagResponse response = client.listNatGatewayByTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

- Querying public NAT gateways (Setting **action** to **count**)

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```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListNatGatewayByTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ListNatGatewayByTagRequest request = new ListNatGatewayByTagRequest();
        ListNatsByTagsRequestBody body = new ListNatsByTagsRequestBody();
        [](model.PublicMatch) listbodyMatches = new ArrayList<>();
        listbodyMatches.add(
            new PublicMatch()
                .withKey("resource_name")
                .withValue("nat_gateways")
        );
        []string listNotTagsAnyValues = new ArrayList<>();
        listNotTagsAnyValues.add("value8");
        [](model.PublicTag) listbodyNotTagsAny = new ArrayList<>();
        listbodyNotTagsAny.add(
            new PublicTag()
                .withKey("key4")
                .withValues(listNotTagsAnyValues)
        );
        []string listNotTagsValues = new ArrayList<>();
        listNotTagsValues.add("value2");
        [](model.PublicTag) listbodyNotTags = new ArrayList<>();
        listbodyNotTags.add(
            new PublicTag()
                .withKey("key1")
                .withValues(listNotTagsValues)
        );
        []string listTagsAnyValues = new ArrayList<>();
        listTagsAnyValues.add("value6");
        [](model.PublicTag) listbodyTagsAny = new ArrayList<>();
        listbodyTagsAny.add(
            new PublicTag()
                .withKey("key3")
                .withValues(listTagsAnyValues)
        );
        []string listTagsValues = new ArrayList<>();
```

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```
        listTagsValues.add("value4");
        [](model.PublicTag) listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new PublicTag()
                .withKey("key2")
                .withValues(listTagsValues)
        );
        body.withMatches(listbodyMatches);
        body.withAction("count");
        body.withNotTagsAny(listbodyNotTagsAny);
        body.withNotTags(listbodyNotTags);
        body.withTagsAny(listbodyTagsAny);
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
            ListNatGatewayByTagResponse response = client.listNatGatewayByTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListNatGatewayByTagRequest()
        listMatchesbody = [
            PublicMatch(
                key="resource_name",
                value="nat_gateways"
            )
```

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```
        ]
        listValuesNotTagsAny = [
            "value8"
        ]
        listNotTagsAnybody = [
            PublicTag(
                key="key4",
                values=listValuesNotTagsAny
            )
        ]
        listValuesNotTags = [
            "value2"
        ]
        listNotTagsbody = [
            PublicTag(
                key="key1",
                values=listValuesNotTags
            )
        ]
        listValuesTagsAny = [
            "value6"
        ]
        listTagsAnybody = [
            PublicTag(
                key="key3",
                values=listValuesTagsAny
            )
        ]
        listValuesTags = [
            "value4"
        ]
        listTagsbody = [
            PublicTag(
                key="key2",
                values=listValuesTags
            )
        ]
        request.body = ListNatsByTagsRequestBody(
            matches=listMatchesbody,
            action="filter",
            offset="0",
            limit="1000",
            not_tags_any=listNotTagsAnybody,
            not_tags=listNotTagsbody,
            tags_any=listTagsAnybody,
            tags=listTagsbody
        )
        response = client.list_nat_gateway_by_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

- Querying public NAT gateways (Setting **action** to **count**)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
```

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```
environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListNatGatewayByTagRequest()
        listMatchesbody = [
            PublicMatch(
                key="resource_name",
                value="nat_gateways"
            )
        ]
        listValuesNotTagsAny = [
            "value8"
        ]
        listNotTagsAnybody = [
            PublicTag(
                key="key4",
                values=listValuesNotTagsAny
            )
        ]
        listValuesNotTags = [
            "value2"
        ]
        listNotTagsbody = [
            PublicTag(
                key="key1",
                values=listValuesNotTags
            )
        ]
        listValuesTagsAny = [
            "value6"
        ]
        listTagsAnybody = [
            PublicTag(
                key="key3",
                values=listValuesTagsAny
            )
        ]
        listValuesTags = [
            "value4"
        ]
        listTagsbody = [
            PublicTag(
                key="key2",
                values=listValuesTags
            )
        ]
        request.body = ListNatsByTagsRequestBody(
            matches=listMatchesbody,
            action="count",
            not_tags_any=listNotTagsAnybody,
            not_tags=listNotTagsbody,
            tags_any=listTagsAnybody,
            tags=listTagsbody
        )
        response = client.list_nat_gateway_by_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
```

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```
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListNatGatewayByTagRequest{}
    var listMatchesbody = []model.PublicMatch{
        {
            Key: "resource_name",
            Value: "nat_gateways",
        },
    }
    var listValuesNotTagsAny = []string{
        "value8",
    }
    var listNotTagsAnybody = []model.PublicTag{
        {
            Key: "key4",
            Values: listValuesNotTagsAny,
        },
    }
    var listValuesNotTags = []string{
        "value2",
    }
    var listNotTagsbody = []model.PublicTag{
        {
            Key: "key1",
            Values: listValuesNotTags,
        },
    }
    var listValuesTagsAny = []string{
        "value6",
    }
```

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```
    var listTagsAnybody = []model.PublicTag{
        {
            Key: "key3",
            Values: listValuesTagsAny,
        },
    }
    var listValuesTags = []string{
        "value4",
    }
    var listTagsbody = []model.PublicTag{
        {
            Key: "key2",
            Values: listValuesTags,
        },
    }
    offsetListNatsByTagsRequestBody:= "0"
    limitListNatsByTagsRequestBody:= "1000"
    request.Body = &model.ListNatsByTagsRequestBody{
        Matches: &listMatchesbody,
        Action: "filter",
        Offset: &offsetListNatsByTagsRequestBody,
        Limit: &limitListNatsByTagsRequestBody,
        NotTagsAny: &listNotTagsAnybody,
        NotTags: &listNotTagsbody,
        TagsAny: &listTagsAnybody,
        Tags: &listTagsbody,
    }
    response, err := client.ListNatGatewayByTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

- Querying public NAT gateways (Setting **action** to **count**)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListNatGatewayByTagRequest{}
```

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```
    var listMatchesbody = []model.PublicMatch{
        {
            Key: "resource_name",
            Value: "nat_gateways",
        },
    }
    var listValuesNotTagsAny = []string{
        "value8",
    }
    var listNotTagsAnybody = []model.PublicTag{
        {
            Key: "key4",
            Values: listValuesNotTagsAny,
        },
    }
    var listValuesNotTags = []string{
        "value2",
    }
    var listNotTagsbody = []model.PublicTag{
        {
            Key: "key1",
            Values: listValuesNotTags,
        },
    }
    var listValuesTagsAny = []string{
        "value6",
    }
    var listTagsAnybody = []model.PublicTag{
        {
            Key: "key3",
            Values: listValuesTagsAny,
        },
    }
    var listValuesTags = []string{
        "value4",
    }
    var listTagsbody = []model.PublicTag{
        {
            Key: "key2",
            Values: listValuesTags,
        },
    }
    request.Body = &model.ListNatsByTagsRequestBody{
        Matches: &listMatchesbody,
        Action: "count",
        NotTagsAny: &listNotTagsAnybody,
        NotTags: &listNotTagsbody,
        TagsAny: &listTagsAnybody,
        Tags: &listTagsbody,
    }
    response, err := client.ListNatGatewayByTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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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**.

4.1.2 Batch Adding or Deleting Tags to or from a Public NAT Gateway

Function

- This API is used to batch add or delete tags to or from a public NAT gateway.
- Tag Management Service (TMS) needs to use this API to manage tags of resources in batches.
- A resource can have up to 10 tags.

Constraints

- This API is idempotent.
  - If there are duplicate keys in the request body when you add tags, an error is reported.
  - If a tag to be added has the same key as an existing tag, the tag will be added and overwrite the existing one.
  - 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. A key can contain up to 128 Unicode characters, and a value can contain up to 255 Unicode characters. In addition, the **tags** structure cannot be missing, and **key** cannot be left blank or be an empty string.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/nat_gateways/{nat_gateway_id}/tags/action

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Table 4-9 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 4-10 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 4-11 Request body parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of **PublicTags** objects	Specifies the tag list. For details, see the **Tags** field description.
action	Yes	String	Specifies the operation to be performed. The value can only be **create** or **delete**.

Table 4-12 PublicTags

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. A key cannot contain ASCII characters (0–31 decimal) nor the following characters: = * < > \ , | /

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Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the value. Each value can contain up to 255 Unicode characters. If **value** is specified, tags are deleted by key and value. If **value** is not specified, tags are deleted by key. **value** can be an empty string. A value cannot contain ASCII characters (0–31) nor the following characters: =*<>,|/

Response Parameters

Status code: 204

Tags added or deleted.

None

Example Requests

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

```
POST  https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/
fe1a4cf0-27fe-4b97-a9b1-2c67c127f0e0/tags/action

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

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

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

Example Responses

None

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SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateDeleteNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeleteNatGatewayTagRequest request = new BatchCreateDeleteNatGatewayTagRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        BatchCreateDeleteNatTagsRequestBody body = new BatchCreateDeleteNatTagsRequestBody();
        List<PublicTags> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new PublicTags()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new PublicTags()
                .withKey("key2")
                .withValue("value2")
        );
        body.withAction("create");
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
            BatchCreateDeleteNatGatewayTagResponse response = client.batchCreateDeleteNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
```

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```
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateDeleteNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeleteNatGatewayTagRequest request = new BatchCreateDeleteNatGatewayTagRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        BatchCreateDeleteNatTagsRequestBody body = new BatchCreateDeleteNatTagsRequestBody();
        List<PublicTags> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new PublicTags()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new PublicTags()
                .withKey("key2")
                .withValue("value2")
        );
        body.withAction("delete");
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
```

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```
            BatchCreateDeleteNatGatewayTagResponse response =
client.batchCreateDeleteNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeleteNatGatewayTagRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
        listTagsbody = [
            PublicTags(
                key="key1",
                value="value1"
            ),
            PublicTags(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchCreateDeleteNatTagsRequestBody(
            action="create",
            tags=listTagsbody
        )
        response = client.batch_create_delete_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
```

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```
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeleteNatGatewayTagRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
        listTagsbody = [
            PublicTags(
                key="key1",
                value="value1"
            ),
            PublicTags(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchCreateDeleteNatTagsRequestBody(
            action="delete",
            tags=listTagsbody
        )
        response = client.batch_create_delete_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
```

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```
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeleteNatGatewayTagRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    var listTagsbody = []model.PublicTags{
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
    }
    request.Body = &model.BatchCreateDeleteNatTagsRequestBody{
        Action: "create",
        Tags: listTagsbody,
    }
    response, err := client.BatchCreateDeleteNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

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```
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeleteNatGatewayTagRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    var listTagsbody = []model.PublicTags{
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
    }
    request.Body = &model.BatchCreateDeleteNatTagsRequestBody{
        Action: "delete",
        Tags: listTagsbody,
    }
    response, err := client.BatchCreateDeleteNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	Tags added or deleted.

Error Codes

See **Error Codes**.

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4.1.3 Adding a Tag to a Public NAT Gateway

Function

This API is used to add a tag to a public NAT gateway. A resource can have up to 10 tags.

Constraints

- 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.
- Ensure that a NAT gateway is available.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/nat_gateways/{nat_gateway_id}/tags

Table 4-13 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 4-14 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.

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Table 4-15 Request body parameters

Parameter	Mandatory	Type	Description
tag	Yes	**TagBody** object	Specifies the tag list. For details, see the **TagBody** field description.

Table 4-16 TagBody

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. A key cannot contain ASCII characters (0–31 decimal) nor the following characters: = * < > \ , | /
value	Yes	String	Specifies the tag value. Each value can contain up to 255 Unicode characters and can be an empty string. A value cannot contain ASCII characters (0–31 decimal) nor the following characters: = * < > \ , | /

Response Parameters

Status code: 204

Tag added.

None

Example Requests

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

```
POST https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/fe1a4cf0-27fe-4b97-a9b1-2c67c127f0e0/tags

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

Example Responses

None

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SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreateNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateNatGatewayTagRequest request = new CreateNatGatewayTagRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        CreateNatTagRequestBody body = new CreateNatTagRequestBody();
        TagBody tagbody = new TagBody();
        tagbody.withKey("key1")
            .withValue("value1");
        body.withTag(tagbody);
        request.withBody(body);
        try {
            CreateNatGatewayTagResponse response = client.createNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

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Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateNatGatewayTagRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
        tagbody = TagBody(
            key="key1",
            value="value1"
        )
        request.body = CreateNatTagRequestBody(
            tag=tagbody
        )
        response = client.create_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
```

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```
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateNatGatewayTagRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    tagbody := &model.TagBody{
        Key: "key1",
        Value: "value1",
    }
    request.Body = &model.CreateNatTagRequestBody{
        Tag: tagbody,
    }
    response, err := client.CreateNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	Tag added.

Error Codes

See **Error Codes**.

4.1.4 Deleting a Tag from a Public NAT Gateway

Function

This API is used to delete a tag from a public NAT gateway.

Constraints

- This API is idempotent.

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- A tag to be deleted will not be verified. 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}/nat_gateways/{nat_gateway_id}/tags/{key}

Table 4-17 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.
key	Yes	String	Specifies the tag key.

Request Parameters

Table 4-18 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

```
DELETE https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/fe1a4cf0-27fe-4b97-a9b1-2c67c127f0e0/tags/key1
```

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Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class DeleteNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        DeleteNatGatewayTagRequest request = new DeleteNatGatewayTagRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        request.withKey("{key}");
        try {
            DeleteNatGatewayTagResponse response = client.deleteNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8
```

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```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteNatGatewayTagRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
        request.key = "{key}"
        response = client.delete_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())
```

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```
    request := &model.DeleteNatGatewayTagRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    request.Key = "{key}"
    response, err := client.DeleteNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	Tag deleted.

Error Codes

See **Error Codes**.

4.1.5 Querying Tags of a Public NAT Gateway

Function

- This API is used to query tags of a public NAT gateway.
- Tag Management Service (TMS) uses this API to query all tags of a public NAT gateway.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/nat_gateways/{nat_gateway_id}/tags

Table 4-19 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.

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Request Parameters

Table 4-20 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.

Response Parameters

Status code: 200

Table 4-21 Response body parameters

Parameter	Type	Description
tags	Array of **TagBody** objects	Specifies the tag list.

Table 4-22 TagBody

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. **key** cannot be left blank. A key cannot contain ASCII characters (0–31 decimal) nor the following characters: = * < > \ , | /
value	String	Specifies the tag value. Each value can contain up to 255 Unicode characters and can be an empty string. A value cannot contain ASCII characters (0–31 decimal) nor the following characters: = * < > \ , | /

Example Requests

```
GET https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/fe1a4cf0-27fe-4b97-a9b1-2c67c127f0e0/tags
```

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Example Responses

Status code: 200

Query operation succeeded.

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

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ShowNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ShowNatGatewayTagRequest request = new ShowNatGatewayTagRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        try {
            ShowNatGatewayTagResponse response = client.showNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
```

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```
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowNatGatewayTagRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
        response = client.show_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
```

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```
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowNatGatewayTagRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    response, err := client.ShowNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

4.1.6 Querying Tags of All Public NAT Gateways in a Project

Function

- This API is used to query tags of all public NAT gateways owned by a tenant in a project.
- Tag Management Service (TMS) uses this API to list tags created by a tenant to ease tag creation and resource filtering on the console.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/nat_gateways/tags

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Table 4-23 Path Parameters

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

Request Parameters

Table 4-24 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 4-25 Response body parameters

Parameter	Type	Description
tags	Array of **TagsBody** objects	Specifies the tag list.

Table 4-26 TagsBody

Parameter	Type	Description
key	String	Specifies the tag key. A key can contain up to 128 Unicode characters. **key** cannot be left blank. A key cannot contain ASCII characters (0–31 decimal) nor the following special characters: * < > \ =

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Parameter	Type	Description
values	Array of strings	Specifies the list of tag values. Each value can contain up to 255 Unicode characters and can be an empty string. Each value cannot contain ASCII characters (0–31 decimal) nor the following special characters: * < > \ =

Example Requests

```
GET https://{NAT_endpoint}/v3/9ad601814ac94c80bf7bb9073ded66fc/nat_gateways/tags
```

Example Responses

Status code: 200

Query operation succeeded.

```
{
  "tags" : [ {
    "key" : "key1",
    "values" : [ "value1", "value2" ]
  }, {
    "key" : "key2",
    "values" : [ "value3", "value4" ]
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListNatGatewayTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
```

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```
            .withAk(ak)
            .withSk(sk);

        NatClient client = NatClient.newBuilder()
            .withCredential(auth)
            .withRegion(NatRegion.valueOf("<YOUR REGION>"))
            .build();
        ListNatGatewayTagRequest request = new ListNatGatewayTagRequest();
        try {
            ListNatGatewayTagResponse response = client.listNatGatewayTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListNatGatewayTagRequest()
        response = client.list_nat_gateway_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
```

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```
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListNatGatewayTagRequest{}
    response, err := client.ListNatGatewayTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Query operation succeeded.

Error Codes

See **Error Codes**.

4.2 Public NAT Gateways

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4.2.1 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 4-27 Path Parameters

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

Table 4-28 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	Datetime	Specifies when the public NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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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.
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.
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.
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.

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Parameter	Mandatory	Type	Description
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**
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).

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Request Parameters

Table 4-29 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 4-30 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 4-31 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 (<>).

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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.
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	Datetime	Specifies when the public NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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Parameter	Type	Description
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 your 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 4-32 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

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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.

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Error Codes

See **Error Codes**.

4.2.2 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 4-33 Path Parameters

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

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.

Table 4-35 Request body parameters

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

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Table 4-36 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.
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.

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Parameter	Mandatory	Type	Description
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 *Enterprise Management User Guide*.
session_conf	No	**SessionConfiguration** object	Specifies the session parameters for the public NAT gateway.
prepaid_options	No	**PrepaidOptions** object	Specifies the payment attributes.

Table 4-37 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
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 4-38 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.

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

Response Parameters

Status code: 201

Table 4-39 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 4-40 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.

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Parameter	Type	Description
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	Datetime	Specifies when the public NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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 your buy a pay-per-use resource.

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Parameter	Type	Description
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 4-41 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

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"
  }
}
```

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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
    }
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Creating a public NAT gateway

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreateNatGatewaySolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
```

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```
            .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateNatGatewayRequest request = new CreateNatGatewayRequest();
        CreateNatGatewayRequestBody body = new CreateNatGatewayRequestBody();
        CreateNatGatewayOption natGatewaybody = new CreateNatGatewayOption();
        natGatewaybody.withName("nat_001")
            .withRouterId("d84f345c-80a1-4fa2-a39c-d0d397c3f09a")
            .withInternalNetworkId("89d66639-aacb-4929-969d-07080b0f9fd9")
            .withDescription("my nat gateway 01")
            .withSpec(CreateNatGatewayOption.SpecEnum.fromValue("1"))
            .withEnterpriseProjectId("0aad99bc-f5f6-4f78-8404-c598d76b0ed2");
        body.withNatGateway(natGatewaybody);
        request.withBody(body);
        try {
            CreateNatGatewayResponse response = client.createNatGateway(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Creating a public NAT gateway

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateNatGatewayRequest()
        natGatewaybody = CreateNatGatewayOption(
            name="nat_001",
            router_id="d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
            internal_network_id="89d66639-aacb-4929-969d-07080b0f9fd9",
```

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```
            description="my nat gateway 01",
            spec="1",
            enterprise_project_id="0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
        )
        request.body = CreateNatGatewayRequestBody(
            nat_gateway=natGatewaybody
        )
        response = client.create_nat_gateway(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Creating a public NAT gateway

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateNatGatewayRequest{}
    descriptionNatGateway:= "my nat gateway 01"
    enterpriseProjectIdNatGateway:= "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
    natGatewaybody := &model.CreateNatGatewayOption{
        Name: "nat_001",
        RouterId: "d84f345c-80a1-4fa2-a39c-d0d397c3f09a",
        InternalNetworkId: "89d66639-aacb-4929-969d-07080b0f9fd9",
        Description: &descriptionNatGateway,
        Spec: model.GetCreateNatGatewayOptionSpecEnum().E_1,
        EnterpriseProjectId: &enterpriseProjectIdNatGateway,
    }
    request.Body = &model.CreateNatGatewayRequestBody{
        NatGateway: natGatewaybody,
    }
    response, err := client.CreateNatGateway(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
```

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```
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	Public NAT gateway created.

Error Codes

See **Error Codes**.

4.2.3 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 4-42 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.

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Request Parameters

Table 4-43 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**.

4.2.4 Updating a Public NAT Gateway

Function

This API is used to update a public NAT gateway.

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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 4-44 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 4-45 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 4-46 Request body parameters

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

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Table 4-47 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.
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.
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 4-48 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

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Parameter	Mandatory	Type	Description
icmp_session_expire_time	No	Integer	Specifies the ICMP session duration. Unit: second
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 4-49 prepaid_options

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

Response Parameters

Status code: 200

Table 4-50 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 4-51 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 (<>).

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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.
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	Datetime	Specifies when the public NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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Parameter	Type	Description
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 your 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 4-52 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
```

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```
{
  "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
    }
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class UpdateNatGatewaySolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

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```
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        UpdateNatGatewayRequest request = new UpdateNatGatewayRequest();
        request.withNatGatewayId("{nat_gateway_id}");
        UpdateNatGatewayRequestBody body = new UpdateNatGatewayRequestBody();
        UpdateNatGatewayOption natGatewaybody = new UpdateNatGatewayOption();
        natGatewaybody.withName("new_name")
            .withDescription("new description")
            .withSpec(UpdateNatGatewayOption.SpecEnum.fromValue("1"));
        body.withNatGateway(natGatewaybody);
        request.withBody(body);
        try {
            UpdateNatGatewayResponse response = client.updateNatGateway(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateNatGatewayRequest()
        request.nat_gateway_id = "{nat_gateway_id}"
```

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```
        natGatewaybody = UpdateNatGatewayOption(
            name="new_name",
            description="new description",
            spec="1"
        )
        request.body = UpdateNatGatewayRequestBody(
            nat_gateway=natGatewaybody
        )
        response = client.update_nat_gateway(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNatGatewayRequest{}
    request.NatGatewayId = "{nat_gateway_id}"
    nameNatGateway:= "new_name"
    descriptionNatGateway:= "new description"
    specNatGateway:= model.GetUpdateNatGatewayOptionSpecEnum().E_1
    natGatewaybody := &model.UpdateNatGatewayOption{
        Name: &nameNatGateway,
        Description: &descriptionNatGateway,
        Spec: &specNatGateway,
    }
    request.Body = &model.UpdateNatGatewayRequestBody{
        NatGateway: natGatewaybody,
    }
    response, err := client.UpdateNatGateway(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
```

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```
  }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Public NAT gateway updated.

Error Codes

See **Error Codes**.

4.2.5 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 4-53 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.

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Request Parameters

Table 4-54 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 4-55 Response body parameters

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

Table 4-56 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 (<>).

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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.
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	Datetime	Specifies when the public NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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Parameter	Type	Description
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 your 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 4-57 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
```

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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**.

4.3 DNAT Rules

4.3.1 Querying DNAT Rules

Function

This API is used to query DNAT rules.

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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 4-58 Path Parameters

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

Table 4-59 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.

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Parameter	Mandatory	Type	Description
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
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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* format.
nat_gateway_id	No	Array of strings	Specifies the public NAT gateway ID.

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Parameter	Mandatory	Type	Description
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.
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.

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Request Parameters

Table 4-60 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 4-61 Response body parameters

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

Table 4-62 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**.

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Parameter	Type	Description
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_address	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	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
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.

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Parameter	Type	Description
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 *x* is lower than *y*.
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 *x* is lower than *y*.
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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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,
```

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```
    "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**.

4.3.2 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**.

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URI

POST /v2/{project_id}/dnat_rules

Table 4-63 Path Parameters

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

Request Parameters

Table 4-64 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 4-65 Request body parameters

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

Table 4-66 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 (<>).

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Parameter	Mandatory	Type	Description
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.
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 *x* is lower than *y*.

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Parameter	Mandatory	Type	Description
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 *x* is lower than *y*.
global_eip_id	No	String	Specifies the global EIP ID.

Response Parameters

Status code: 201

Table 4-67 Response body parameters

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

Table 4-68 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**.

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Parameter	Type	Description
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_address	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	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
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.

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Parameter	Type	Description
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 *x* is lower than *y*.
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 *x* is lower than *y*.
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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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"
  }
}
```

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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"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Creating a DNAT rule

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreateNatGatewayDnatRuleSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateNatGatewayDnatRuleRequest request = new CreateNatGatewayDnatRuleRequest();
        CreateNatGatewayDnatRuleOption body = new CreateNatGatewayDnatRuleOption();
```

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```
        CreateNatGatewayDnatOption dnatRulebody = new CreateNatGatewayDnatOption();
        dnatRulebody.withDescription("my dnat rule 01")
            .withPortId("9a469561-daac-4c94-88f5-39366e5ea193")
            .withNatGatewayId("cda3a125-2406-456c-a11f-598e10578541")
            .withInternalServicePort(993)
            .withFloatingIpId("bf99c679-9f41-4dac-8513-9c9228e713e1")
            .withExternalServicePort(242)
            .withProtocol("tcp");
        body.withDnatRule(dnatRulebody);
        request.withBody(body);
        try {
            CreateNatGatewayDnatRuleResponse response = client.createNatGatewayDnatRule(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Creating a DNAT rule

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateNatGatewayDnatRuleRequest()
        dnatRulebody = CreateNatGatewayDnatOption(
            description="my dnat rule 01",
            port_id="9a469561-daac-4c94-88f5-39366e5ea193",
            nat_gateway_id="cda3a125-2406-456c-a11f-598e10578541",
            internal_service_port=993,
            floating_ip_id="bf99c679-9f41-4dac-8513-9c9228e713e1",
            external_service_port=242,
            protocol="tcp"
        )
        request.body = CreateNatGatewayDnatRuleOption(
            dnat_rule=dnatRulebody
```

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```
        )
        response = client.create_nat_gateway_dnat_rule(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Creating a DNAT rule

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateNatGatewayDnatRuleRequest{}
    descriptionDnatRule:= "my dnat rule 01"
    portIdDnatRule:= "9a469561-daac-4c94-88f5-39366e5ea193"
    dnatRulebody := &model.CreateNatGatewayDnatOption{
        Description: &descriptionDnatRule,
        PortId: &portIdDnatRule,
        NatGatewayId: "cda3a125-2406-456c-a11f-598e10578541",
        InternalServicePort: int32(993),
        FloatingIpId: "bf99c679-9f41-4dac-8513-9c9228e713e1",
        ExternalServicePort: int32(242),
        Protocol: "tcp",
    }
    request.Body = &model.CreateNatGatewayDnatRuleOption{
        DnatRule: dnatRulebody,
    }
    response, err := client.CreateNatGatewayDnatRule(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	DNAT rule created.

Error Codes

See **Error Codes**.

4.3.3 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 4-69 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.

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Request Parameters

Table 4-70 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**.

4.3.4 Updating a DNAT Rule

Function

This API is used to update a DNAT rule.

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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 4-71 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 4-72 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.

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Table 4-73 Request body parameters

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

Table 4-74 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

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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 *x* is lower than *y*.
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 *x* is lower than *y*.

Response Parameters

Status code: 200

Table 4-75 Response body parameters

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

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Table 4-76 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_address	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	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

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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 *x* is lower than *y*.
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 *x* is lower than *y*.

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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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
```

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```
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class UpdateNatGatewayDnatRuleSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        UpdateNatGatewayDnatRuleRequest request = new UpdateNatGatewayDnatRuleRequest();
        request.withDnatRuleId("{dnat_rule_id}");
        UpdateNatGatewayDnatRuleRequestBody body = new UpdateNatGatewayDnatRuleRequestBody();
        UpdateNatGatewayDnatRuleOption dnatRulebody = new UpdateNatGatewayDnatRuleOption();
        dnatRulebody.withNatGatewayId("a78fb3eb-1654-4710-8742-3fc49d5f04f8")
            .withDescription("my dnat-rules");
        body.withDnatRule(dnatRulebody);
        request.withBody(body);
        try {
            UpdateNatGatewayDnatRuleResponse response = client.updateNatGatewayDnatRule(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
```

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```
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateNatGatewayDnatRuleRequest()
        request.dnat_rule_id = "{dnat_rule_id}"
        dnatRulebody = UpdateNatGatewayDnatRuleOption(
            nat_gateway_id="a78fb3eb-1654-4710-8742-3fc49d5f04f8",
            description="my dnat-rules"
        )
        request.body = UpdateNatGatewayDnatRuleRequestBody(
            dnat_rule=dnatRulebody
        )
        response = client.update_nat_gateway_dnat_rule(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNatGatewayDnatRuleRequest{}
    request.DnatRuleId = "{dnat_rule_id}"
    descriptionDnatRule:= "my dnat-rules"
    dnatRulebody := &model.UpdateNatGatewayDnatRuleOption{
        NatGatewayId: "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        Description: &descriptionDnatRule,
    }
    request.Body = &model.UpdateNatGatewayDnatRuleRequestBody{
```

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```
        DnatRule: dnatRulebody,
    }
    response, err := client.UpdateNatGatewayDnatRule(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	DNAT rule updated.

Error Codes

See **Error Codes**.

4.3.5 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 4-77 Path Parameters

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

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Request Parameters

Table 4-78 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 4-79 Response body parameters

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

Table 4-80 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**.

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Parameter	Type	Description
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_address	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	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
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.

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Parameter	Type	Description
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 *x* is lower than *y*.
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 *x* is lower than *y*.
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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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",
```

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```
  "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**.

4.3.6 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 4-81 Path Parameters

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

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Request Parameters

Table 4-82 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 4-83 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 4-84 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.

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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 *x* is lower than *y*.
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 *x* is lower than *y*.
global_eip_id	No	String	Specifies the global EIP ID.

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Response Parameters

Status code: 201

Table 4-85 Response body parameters

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

Table 4-86 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_address	String	Specifies the global EIP.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.

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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 *x* is lower than *y*.

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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 *x* is lower than *y*.
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	Datetime	Specifies when the DNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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.

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```
{
  "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"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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**.)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateNatGatewayDnatRulesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

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```
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateNatGatewayDnatRulesRequest request = new BatchCreateNatGatewayDnatRulesRequest();
        BatchCreateNatGatewayDnatRulesRequestBody body = new
BatchCreateNatGatewayDnatRulesRequestBody();
        List<CreateNatGatewayDnatOption> listbodyDnatRules = new ArrayList<>();
        listbodyDnatRules.add(
            new CreateNatGatewayDnatOption()
                .withDescription("my dnat rule 01")
                .withPortId("9a469561-daac-4c94-88f5-39366e5ea193")
                .withNatGatewayId("cda3a125-2406-456c-a11f-598e10578541")
                .withInternalServicePort(993)
                .withFloatingIpId("bf99c679-9f41-4dac-8513-9c9228e713e1")
                .withExternalServicePort(242)
                .withProtocol("tcp")
        );
        listbodyDnatRules.add(
            new CreateNatGatewayDnatOption()
                .withDescription("my dnat rule 01")
                .withPrivateIp("192.168.1.100")
                .withNatGatewayId("dda3a125-2406-456c-a11f-598e10578541")
                .withInternalServicePort(0)
                .withFloatingIpId("cf99c679-9f41-4dac-8513-9c9228e713e1")
                .withExternalServicePort(0)
                .withProtocol("any")
        );
        body.withDnatRules(listbodyDnatRules);
        request.withBody(body);
        try {
            BatchCreateNatGatewayDnatRulesResponse response =
client.batchCreateNatGatewayDnatRules(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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**.)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

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```
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateNatGatewayDnatRulesRequest()
        listDnatRulesbody = [
            CreateNatGatewayDnatOption(
                description="my dnat rule 01",
                port_id="9a469561-daac-4c94-88f5-39366e5ea193",
                nat_gateway_id="cda3a125-2406-456c-a11f-598e10578541",
                internal_service_port=993,
                floating_ip_id="bf99c679-9f41-4dac-8513-9c9228e713e1",
                external_service_port=242,
                protocol="tcp"
            ),
            CreateNatGatewayDnatOption(
                description="my dnat rule 01",
                private_ip="192.168.1.100",
                nat_gateway_id="dda3a125-2406-456c-a11f-598e10578541",
                internal_service_port=0,
                floating_ip_id="cf99c679-9f41-4dac-8513-9c9228e713e1",
                external_service_port=0,
                protocol="any"
            )
        ]
        request.body = BatchCreateNatGatewayDnatRulesRequestBody(
            dnat_rules=listDnatRulesbody
        )
        response = client.batch_create_nat_gateway_dnat_rules(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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**.)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
```

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```
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateNatGatewayDnatRulesRequest{}
    descriptionDnatRules:= "my dnat rule 01"
    portIdDnatRules:= "9a469561-daac-4c94-88f5-39366e5ea193"
    descriptionDnatRules1:= "my dnat rule 01"
    privateIpDnatRules:= "192.168.1.100"
    var listDnatRulesbody = []model.CreateNatGatewayDnatOption{
        {
            Description: &descriptionDnatRules,
            PortId: &portIdDnatRules,
            NatGatewayId: "cda3a125-2406-456c-a11f-598e10578541",
            InternalServicePort: int32(993),
            FloatingIpId: "bf99c679-9f41-4dac-8513-9c9228e713e1",
            ExternalServicePort: int32(242),
            Protocol: "tcp",
        },
        {
            Description: &descriptionDnatRules1,
            PrivateIp: &privateIpDnatRules,
            NatGatewayId: "dda3a125-2406-456c-a11f-598e10578541",
            InternalServicePort: int32(0),
            FloatingIpId: "cf99c679-9f41-4dac-8513-9c9228e713e1",
            ExternalServicePort: int32(0),
            Protocol: "any",
        },
    }
    request.Body = &model.BatchCreateNatGatewayDnatRulesRequestBody{
        DnatRules: listDnatRulesbody,
    }
    response, err := client.BatchCreateNatGatewayDnatRules(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See **Error Codes**.

4.4 SNAT Rules

4.4.1 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 4-87 Path Parameters

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

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Table 4-88 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.
floating_ip_id	No	String	Specifies the EIP ID. Use commas (,) to separate multiple EIP IDs. The maximum length is 4,096 bytes.

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Parameter	Mandatory	Type	Description
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	Datetime	Specifies when the SNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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.
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.

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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 4-89 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

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Table 4-90 Response body parameters

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

Table 4-91 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.
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 (<>).

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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	Datetime	Specifies when the SNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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_address	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
freezed_ip_address	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?limit=2
```

Example Responses

Status code: 200

SNAT rules queried.

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```
{
  "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-24cffeffef5c",
    "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**.

4.4.2 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**.

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URI

POST /v2/{project_id}/snat_rules

Table 4-92 Path Parameters

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

Request Parameters

Table 4-93 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 4-94 Request body parameters

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

Table 4-95 CreateNatGatewaySnatRuleOption

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

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Parameter	Mandatory	Type	Description
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

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Table 4-96 Response body parameters

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

Table 4-97 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 (<>).

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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 *yyyy-mm-dd hh:mm:ss.SSSSSS* 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_address	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
global_eip_address	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"
  }
}
```

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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"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Creating an SNAT rule

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreateNatGatewaySnatRuleSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateNatGatewaySnatRuleRequest request = new CreateNatGatewaySnatRuleRequest();
        CreateNatGatewaySnatRuleRequestOption body = new CreateNatGatewaySnatRuleRequestOption();
        CreateNatGatewaySnatRuleOption snatRulebody = new CreateNatGatewaySnatRuleOption();
        snatRulebody.withNatGatewayId("a78fb3eb-1654-4710-8742-3fc49d5f04f8")
```

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```
            .withCidr("172.30.0.0/24")
            .withDescription("my snat rule 01")
            .withSourceType(1)
            .withFloatingIpId("bdc10a4c-d81a-41ec-adf7-de857f7c812a");
        body.withSnatRule(snatRulebody);
        request.withBody(body);
        try {
            CreateNatGatewaySnatRuleResponse response = client.createNatGatewaySnatRule(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Creating an SNAT rule

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateNatGatewaySnatRuleRequest()
        snatRulebody = CreateNatGatewaySnatRuleOption(
            nat_gateway_id="a78fb3eb-1654-4710-8742-3fc49d5f04f8",
            cidr="172.30.0.0/24",
            description="my snat rule 01",
            source_type=1,
            floating_ip_id="bdc10a4c-d81a-41ec-adf7-de857f7c812a"
        )
        request.body = CreateNatGatewaySnatRuleRequestOption(
            snat_rule=snatRulebody
        )
        response = client.create_nat_gateway_snat_rule(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
```

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```
        print(e.error_code)
        print(e.error_msg)
```

Go

Creating an SNAT rule

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateNatGatewaySnatRuleRequest{}
    cidrSnatRule:= "172.30.0.0/24"
    descriptionSnatRule:= "my snat rule 01"
    sourceTypeSnatRule:= int32(1)
    snatRulebody := &model.CreateNatGatewaySnatRuleOption{
        NatGatewayId: "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
        Cidr: &cidrSnatRule,
        Description: &descriptionSnatRule,
        SourceType: &sourceTypeSnatRule,
        FloatingIpId: "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
    }
    request.Body = &model.CreateNatGatewaySnatRuleRequestOption{
        SnatRule: snatRulebody,
    }
    response, err := client.CreateNatGatewaySnatRule(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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Status Codes

Status Code	Description
201	SNAT rule created.

Error Codes

See **Error Codes**.

4.4.3 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 4-98 Path Parameters

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

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Request Parameters

Table 4-99 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 4-100 Request body parameters

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

Table 4-101 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.
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

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Table 4-102 Response body parameters

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

Table 4-103 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.
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 (<>).

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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 *yyyy-mm-dd hh:mm:ss.SSSSSS* 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_address	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_address	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"
```

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```
  }
}
```

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"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Updating the SNAT rule

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class UpdateNatGatewaySnatRuleSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
```

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```
            .build();
        UpdateNatGatewaySnatRuleRequest request = new UpdateNatGatewaySnatRuleRequest();
        request.withSnatRuleId("{snat_rule_id}");
        UpdateNatGatewaySnatRuleRequestOption body = new UpdateNatGatewaySnatRuleRequestOption();
        UpdateNatGatewaySnatRuleOption snatRulebody = new UpdateNatGatewaySnatRuleOption();
        snatRulebody.withNatGatewayId("bbe7c2e7-3bad-445b-a067-b30acce66053")
            .withPublicIpAddress("10.15.10.11,10.15.10.12")
            .withDescription("my_snat_rule_update");
        body.withSnatRule(snatRulebody);
        request.withBody(body);
        try {
            UpdateNatGatewaySnatRuleResponse response = client.updateNatGatewaySnatRule(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Updating the SNAT rule

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateNatGatewaySnatRuleRequest()
        request.snat_rule_id = "{snat_rule_id}"
        snatRulebody = UpdateNatGatewaySnatRuleOption(
            nat_gateway_id="bbe7c2e7-3bad-445b-a067-b30acce66053",
            public_ip_address="10.15.10.11,10.15.10.12",
            description="my_snat_rule_update"
        )
        request.body = UpdateNatGatewaySnatRuleRequestOption(
            snat_rule=snatRulebody
        )
        response = client.update_nat_gateway_snat_rule(request)
        print(response)
```

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```
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Updating the SNAT rule

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNatGatewaySnatRuleRequest{}
    request.SnatRuleId = "{snat_rule_id}"
    publicIpAddressSnatRule:= "10.15.10.11,10.15.10.12"
    descriptionSnatRule:= "my_snat_rule_update"
    snatRulebody := &model.UpdateNatGatewaySnatRuleOption{
        NatGatewayId: "bbe7c2e7-3bad-445b-a067-b30acce66053",
        PublicIpAddress: &publicIpAddressSnatRule,
        Description: &descriptionSnatRule,
    }
    request.Body = &model.UpdateNatGatewaySnatRuleRequestOption{
        SnatRule: snatRulebody,
    }
    response, err := client.UpdateNatGatewaySnatRule(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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Status Codes

Status Code	Description
200	Normal response to PUT requests.

Error Codes

See **Error Codes**.

4.4.4 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 4-104 Path Parameters

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

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Request Parameters

Table 4-105 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 4-106 Response body parameters

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

Table 4-107 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.

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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	Datetime	Specifies when the SNAT rule was created. The time is in *yyyy-mm-dd hh:mm:ss.SSSSSS* 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_address	String	Specifies the EIP. Use commas (,) to separate multiple EIPs.
freezed_ip_address	String	Specifies the frozen EIP. Use commas (,) to separate frozen EIPs.
global_eip_id	String	Specifies the global EIP ID.

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Parameter	Type	Description
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",
    "freezed_ip_address" : "",
    "description" : "my snat rule 01"
  }
}
```

Status Codes

Status Code	Description
200	SNAT rule details queried.

Error Codes

See **Error Codes**.

4.4.5 Deleting an SNAT Rule

Function

This API is used to delete an SNAT rule.

Calling Method

For details, see **Calling APIs**.

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URI

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

Table 4-108 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 4-109 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

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Status Codes

Status Code	Description
204	SNAT rule deleted.

Error Codes

See **Error Codes**.

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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.

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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 private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**
project_id	No	Array of strings	Specifies the project ID.

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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

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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 private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: • **ACTIVE**: The private NAT gateway is running properly. • **FROZEN**: The private NAT gateway is frozen.
created_at	DateTime	Specifies the time when the private NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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Parameter	Type	Description
updated_at	DateTime	Specifies the time when the private NAT gateway was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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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" : [ {
```


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```
      "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
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListPrivateNatsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ListPrivateNatsRequest request = new ListPrivateNatsRequest();
        try {
            ListPrivateNatsResponse response = client.listPrivateNats(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
```

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```
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListPrivateNatsRequest()
        response = client.list_private_nats(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
```

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```
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListPrivateNatsRequest{}
    response, err := client.ListPrivateNats(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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Parameter	Mandatory	Type	Description
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 (<>).

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

Response Parameters

Status code: 200

Table 5-13 Response body parameters

Parameter	Type	Description
gateway	**PrivateNat** object	Specifies the response body for the private NAT gateway.
request_id	String	Specifies the request ID.

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 (<>).
spec	String	Specifies the private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**

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

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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",
      "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" : "e7e3323e95b348708d26e68a0ddece71"
}
```

SDK Sample Code

The SDK sample code is as follows.

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Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class UpdatePrivateNatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        UpdatePrivateNatRequest request = new UpdatePrivateNatRequest();
        request.withGatewayId("{gateway_id}");
        UpdatePrivateNatRequestBody body = new UpdatePrivateNatRequestBody();
        UpdatePrivateNatOption gatewaybody = new UpdatePrivateNatOption();
        gatewaybody.withName("private-nat-gateway-name")
            .withDescription("private-nat-gateway-description")
            .withSpec(UpdatePrivateNatOption.SpecEnum.fromValue("Medium"));
        body.withGateway(gatewaybody);
        request.withBody(body);
        try {
            UpdatePrivateNatResponse response = client.updatePrivateNat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

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```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdatePrivateNatRequest()
        request.gateway_id = "{gateway_id}"
        gatewaybody = UpdatePrivateNatOption(
            name="private-nat-gateway-name",
            description="private-nat-gateway-description",
            spec="Medium"
        )
        request.body = UpdatePrivateNatRequestBody(
            gateway=gatewaybody
        )
        response = client.update_private_nat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"
```

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```
    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdatePrivateNatRequest{}
    request.GatewayId = "{gateway_id}"
    nameGateway:= "private-nat-gateway-name"
    descriptionGateway:= "private-nat-gateway-description"
    specGateway:= model.GetUpdatePrivateNatOptionSpecEnum().MEDIUM
    gatewaybody := &model.UpdatePrivateNatOption{
        Name: &nameGateway,
        Description: &descriptionGateway,
        Spec: &specGateway,
    }
    request.Body = &model.UpdatePrivateNatRequestBody{
        Gateway: gatewaybody,
    }
    response, err := client.UpdatePrivateNat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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**.

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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

SDK Sample Code

The SDK sample code is as follows.

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Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class DeletePrivateNatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        DeletePrivateNatRequest request = new DeletePrivateNatRequest();
        request.withGatewayId("{gateway_id}");
        try {
            DeletePrivateNatResponse response = client.deletePrivateNat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
```

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```
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeletePrivateNatRequest()
        request.gateway_id = "{gateway_id}"
        response = client.delete_private_nat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeletePrivateNatRequest{}
    request.GatewayId = "{gateway_id}"
    response, err := client.DeletePrivateNat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.
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 private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**

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Parameter	Mandatory	Type	Description
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 *Enterprise Management User Guide*.

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

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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 (<>).
spec	String	Specifies the private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: • **ACTIVE**: The private NAT gateway is running properly. • **FROZEN**: The private NAT gateway is frozen.
created_at	DateTime	Specifies the time when the private NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the private NAT gateway was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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Parameter	Type	Description
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
```

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```
{
  "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",
      "virsubnet_id" : "373979ee-f4f0-46c5-80e3-0fbf72646b70",
      "ngport_ip_address" : "192.168.10.190"
    } ],
    "transit_ip_pool_size_max" : 1,
    "rule_max" : 20
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
```

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```
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreatePrivateNatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreatePrivateNatRequest request = new CreatePrivateNatRequest();
        CreatePrivateNatRequestBody body = new CreatePrivateNatRequestBody();
        List<PrivateTag> listGatewayTags = new ArrayList<>();
        listGatewayTags.add(
            new PrivateTag()
                .withKey("key1")
                .withValue("value1")
        );
        List<DownlinkVpcOption> listGatewayDownlinkVpcs = new ArrayList<>();
        listGatewayDownlinkVpcs.add(
            new DownlinkVpcOption()
                .withVirsubnetId("373979ee-f4f0-46c5-80e3-0fbf72646b70")
        );
        CreatePrivateNatOption gatewaybody = new CreatePrivateNatOption();
        gatewaybody.withName("private-nat-gateway-name")
            .withDescription("create private nat")
            .withSpec(CreatePrivateNatOption.SpecEnum.fromValue("Small"))
            .withDownlinkVpcs(listGatewayDownlinkVpcs)
            .withTags(listGatewayTags)
            .withEnterpriseProjectId("2759da7b-8015-404c-ae0a-a389007b0e2a");
        body.withGateway(gatewaybody);
        request.withBody(body);
        try {
            CreatePrivateNatResponse response = client.createPrivateNat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

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Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreatePrivateNatRequest()
        listTagsGateway = [
            PrivateTag(
                key="key1",
                value="value1"
            )
        ]
        listDownlinkVpcsGateway = [
            DownlinkVpcOption(
                virsubnet_id="373979ee-f4f0-46c5-80e3-0fbf72646b70"
            )
        ]
        gatewaybody = CreatePrivateNatOption(
            name="private-nat-gateway-name",
            description="create private nat",
            spec="Small",
            downlink_vpcs=listDownlinkVpcsGateway,
            tags=listTagsGateway,
            enterprise_project_id="2759da7b-8015-404c-ae0a-a389007b0e2a"
        )
        request.body = CreatePrivateNatRequestBody(
            gateway=gatewaybody
        )
        response = client.create_private_nat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

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```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreatePrivateNatRequest{}
    var listTagsGateway = []model.PrivateTag{
        {
            Key: "key1",
            Value: "value1",
        },
    }
    var listDownlinkVpcsGateway = []model.DownlinkVpcOption{
        {
            VirsubnetId: "373979ee-f4f0-46c5-80e3-0fbf72646b70",
        },
    }
    descriptionGateway:= "create private nat"
    specGateway:= model.GetCreatePrivateNatOptionSpecEnum().SMALL
    enterpriseProjectIdGateway:= "2759da7b-8015-404c-ae0a-a389007b0e2a"
    gatewaybody := &model.CreatePrivateNatOption{
        Name: "private-nat-gateway-name",
        Description: &descriptionGateway,
        Spec: &specGateway,
        DownlinkVpcs: listDownlinkVpcsGateway,
        Tags: &listTagsGateway,
        EnterpriseProjectId: &enterpriseProjectIdGateway,
    }
    request.Body = &model.CreatePrivateNatRequestBody{
        Gateway: gatewaybody,
    }
    response, err := client.CreatePrivateNat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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 (<>).

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Parameter	Type	Description
spec	String	Specifies the private NAT gateway specifications. The value can be: • **Small** • **Medium** • **Large** • **Extra-large**
status	String	Specifies the private NAT gateway status. The value can be: • **ACTIVE**: The private NAT gateway is running properly. • **FROZEN**: The private NAT gateway is frozen.
created_at	DateTime	Specifies the time when the private NAT gateway was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the private NAT gateway was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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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
  },
```

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```
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ShowPrivateNatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ShowPrivateNatRequest request = new ShowPrivateNatRequest();
        request.withGatewayId("{gateway_id}");
        try {
            ShowPrivateNatResponse response = client.showPrivateNat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

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```
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowPrivateNatRequest()
        request.gateway_id = "{gateway_id}"
        response = client.show_private_nat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowPrivateNatRequest{}
    request.GatewayId = "{gateway_id}"
    response, err := client.ShowPrivateNat(request)
```

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```
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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

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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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
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 (<>).

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Parameter	Type	Description
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.
created_at	DateTime	Specifies the time when the DNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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Parameter	Type	Description
updated_at	DateTime	Specifies the time when the DNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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",
```


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```
    "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
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListPrivateDnatsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
```

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```
        ListPrivateDnatsRequest request = new ListPrivateDnatsRequest();
        try {
            ListPrivateDnatsResponse response = client.listPrivateDnats(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListPrivateDnatsRequest()
        response = client.list_private_dnats(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
```

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```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListPrivateDnatsRequest{}
    response, err := client.ListPrivateDnats(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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}

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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.

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Parameter	Mandatory	Type	Description
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.
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.

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Table 5-46 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.

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Parameter	Type	Description
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	DateTime	Specifies the time when the DNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the DNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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/da26182801684918 8f4dcc2ef94d9da9/private-nat/dnat-rules/
24dd6bf5-48f2-4915-ad0b-5bb111d39c83

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

Example Responses

Status code: 200

DNAT rule updated.

```
{
  "dnat_rule" : {
    "id" : "24dd6bf5-48f2-4915-ad0b-5bb111d39c83",
    "project_id" : "da261828016849188f4dcc2ef94d9da9",
    "description" : "dnat rule description",
    "gateway_id" : "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    "transit_ip_id" : "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
    "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",
```

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```
    "created_at" : "2019-04-29T07:10:01",
    "updated_at" : "2019-04-29T07:10:01",
    "status" : "ACTIVE"
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class UpdatePrivateDnatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        UpdatePrivateDnatRequest request = new UpdatePrivateDnatRequest();
        request.withDnatRuleId("{dnat_rule_id}");
        UpdatePrivateDnatRequestBody body = new UpdatePrivateDnatRequestBody();
        UpdatePrivateDnatOption dnatRulebody = new UpdatePrivateDnatOption();
        dnatRulebody.withDescription("my dnat-rules 03");
        body.withDnatRule(dnatRulebody);
        request.withBody(body);
        try {
            UpdatePrivateDnatResponse response = client.updatePrivateDnat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
```

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```
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdatePrivateDnatRequest()
        request.dnat_rule_id = "{dnat_rule_id}"
        dnatRulebody = UpdatePrivateDnatOption(
            description="my dnat-rules 03"
        )
        request.body = UpdatePrivateDnatRequestBody(
            dnat_rule=dnatRulebody
        )
        response = client.update_private_dnat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
```

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```
variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdatePrivateDnatRequest{}
    request.DnatRuleId = "{dnat_rule_id}"
    descriptionDnatRule:= "my dnat-rules 03"
    dnatRulebody := &model.UpdatePrivateDnatOption{
        Description: &descriptionDnatRule,
    }
    request.Body = &model.UpdatePrivateDnatRequestBody{
        DnatRule: dnatRulebody,
    }
    response, err := client.UpdatePrivateDnat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.

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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_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.
gateway_id	Yes	String	Specifies the private NAT gateway ID.
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.

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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.
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.

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Parameter	Type	Description
protocol	String	Specifies the protocol type. TCP, UDP, and ANY are supported. The protocol number of TCP, UDP, and ANY are 6, 17, and 0, respectively.
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	DateTime	Specifies the time when the DNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the DNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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",
```

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```
    "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"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreatePrivateDnatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";
```

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```
        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreatePrivateDnatRequest request = new CreatePrivateDnatRequest();
        CreatePrivateDnatOptionBody body = new CreatePrivateDnatOptionBody();
        CreatePrivateDnatOption dnatRulebody = new CreatePrivateDnatOption();
        dnatRulebody.withDescription("aa")
            .withTransitIpId("3faa719d-6d18-4ccb-a5c7-33e65a09663e")
            .withNetworkInterfaceId("dae9393a-b536-491c-a5a2-72edc1104707")
            .withGatewayId("0adefb29-a6c2-48a5-8637-2be67fa03fec");
        body.withDnatRule(dnatRulebody);
        request.withBody(body);
        try {
            CreatePrivateDnatResponse response = client.createPrivateDnat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
    try:
        request = CreatePrivateDnatRequest()
        dnatRulebody = CreatePrivateDnatOption(
            description="aa",
            transit_ip_id="3faa719d-6d18-4ccb-a5c7-33e65a09663e",
            network_interface_id="dae9393a-b536-491c-a5a2-72edc1104707",
            gateway_id="0adefb29-a6c2-48a5-8637-2be67fa03fec"
        )
        request.body = CreatePrivateDnatOptionBody(
            dnat_rule=dnatRulebody
        )
        response = client.create_private_dnat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreatePrivateDnatRequest{}
    descriptionDnatRule:= "aa"
    networkInterfaceIdDnatRule:= "dae9393a-b536-491c-a5a2-72edc1104707"
    dnatRulebody := &model.CreatePrivateDnatOption{
        Description: &descriptionDnatRule,
        TransitIpId: "3faa719d-6d18-4ccb-a5c7-33e65a09663e",
        NetworkInterfaceId: &networkInterfaceIdDnatRule,
        GatewayId: "0adefb29-a6c2-48a5-8637-2be67fa03fec",
    }
    request.Body = &model.CreatePrivateDnatOptionBody{
```

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```
        DnatRule: dnatRulebody,
    }
    response, err := client.CreatePrivateDnat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.

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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.

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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.

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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	DateTime	Specifies the time when the DNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the DNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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"
}
```

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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**

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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.

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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.

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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	DateTime	Specifies the time when the SNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the SNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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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"
}
```

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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.

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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	DateTime	Specifies the time when the SNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the SNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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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"
}
```

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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.

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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.

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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	DateTime	Specifies the time when the SNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the SNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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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"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdatePrivateSnatSolution {
```

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```
    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        UpdatePrivateSnatRequest request = new UpdatePrivateSnatRequest();
        request.withSnatRuleId("{snat_rule_id}");
        UpdatePrivateSnatOptionBody body = new UpdatePrivateSnatOptionBody();
        List<String> listSnatRuleTransitIpIds = new ArrayList<>();
        listSnatRuleTransitIpIds.add("bbe7c2e7-3bad-445b-a067-b30acce66053");
        UpdatePrivateSnatOption snatRulebody = new UpdatePrivateSnatOption();
        snatRulebody.withTransitIpIds(listSnatRuleTransitIpIds)
            .withDescription("my_snat_rule_update");
        body.withSnatRule(snatRulebody);
        request.withBody(body);
        try {
            UpdatePrivateSnatResponse response = client.updatePrivateSnat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"
```

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```
    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdatePrivateSnatRequest()
        request.snat_rule_id = "{snat_rule_id}"
        listTransitIpIdsSnatRule = [
            "bbe7c2e7-3bad-445b-a067-b30acce66053"
        ]
        snatRulebody = UpdatePrivateSnatOption(
            transit_ip_ids=listTransitIpIdsSnatRule,
            description="my_snat_rule_update"
        )
        request.body = UpdatePrivateSnatOptionBody(
            snat_rule=snatRulebody
        )
        response = client.update_private_snat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdatePrivateSnatRequest{}
    request.SnatRuleId = "{snat_rule_id}"
    var listTransitIpIdsSnatRule = []string{
        "bbe7c2e7-3bad-445b-a067-b30acce66053",
```

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```
    }
    descriptionSnatRule:= "my_snat_rule_update"
    snatRulebody := &model.UpdatePrivateSnatOption{
        TransitIpIds: &listTransitIpIdsSnatRule,
        Description: &descriptionSnatRule,
    }
    request.Body = &model.UpdatePrivateSnatOptionBody{
        SnatRule: snatRulebody,
    }
    response, err := client.UpdatePrivateSnat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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

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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.

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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 (<>).
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.
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.

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Parameter	Type	Description
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	DateTime	Specifies the time when the SNAT rule was created. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the SNAT rule was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.
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" ]
```

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```
  }
}
```

Example Responses

Status code: 201

SNAT rule created.

```
{
  "snat_rule" : {
    "id" : "af4dbb83-7ca0-4ed1-b28b-668c1f9c6b81",
    "project_id" : "cfa563efb77d4b6d9960781d82530fd8",
    "description" : "snat rule description",
    "gateway_id" : "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
    "cidr" : "",
    "virsubnet_id" : "5b9ea497-727d-4ad0-a99e-3984b3f5aaed",
    "transit_ip_associations" : [ {
      "transit_ip_id" : "36a3049a-1682-48b3-b1cf-cb986a3350ef",
      "transit_ip_address" : "172.20.1.10"
    } ],
    "created_at" : "2019-10-22T03:31:19",
    "updated_at" : "2019-10-22T03:31:19",
    "status" : "ACTIVE"
  },
  "request_id" : "2937502e-73f9-4ba5-ae75-2293a0b35fb8"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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**)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreatePrivateSnatSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";
```

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```
        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreatePrivateSnatRequest request = new CreatePrivateSnatRequest();
        CreatePrivateSnatOptionBody body = new CreatePrivateSnatOptionBody();
        List<String> listSnatRuleTransitIpIds = new ArrayList<>();
        listSnatRuleTransitIpIds.add("36a3049a-1682-48b3-b1cf-cb986a3350ef");
        CreatePrivateSnatOption snatRulebody = new CreatePrivateSnatOption();
        snatRulebody.withGatewayId("80da6f26-94eb-4537-97f0-5a56f4d04cfb")
            .withVirsubnetId("5b9ea497-727d-4ad0-a99e-3984b3f5aaed")
            .withDescription("my_snat_rule01")
            .withTransitIpIds(listSnatRuleTransitIpIds);
        body.withSnatRule(snatRulebody);
        request.withBody(body);
        try {
            CreatePrivateSnatResponse response = client.createPrivateSnat(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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**)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
    try:
        request = CreatePrivateSnatRequest()
        listTransitIpIdsSnatRule = [
            "36a3049a-1682-48b3-b1cf-cb986a3350ef"
        ]
        snatRulebody = CreatePrivateSnatOption(
            gateway_id="80da6f26-94eb-4537-97f0-5a56f4d04cfb",
            virsubnet_id="5b9ea497-727d-4ad0-a99e-3984b3f5aaed",
            description="my_snat_rule01",
            transit_ip_ids=listTransitIpIdsSnatRule
        )
        request.body = CreatePrivateSnatOptionBody(
            snat_rule=snatRulebody
        )
        response = client.create_private_snat(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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**)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreatePrivateSnatRequest{}
    var listTransitIpIdsSnatRule = []string{
        "36a3049a-1682-48b3-b1cf-cb986a3350ef",
    }
    virsubnetIdSnatRule:= "5b9ea497-727d-4ad0-a99e-3984b3f5aaed"
    descriptionSnatRule:= "my_snat_rule01"
```

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```
    snatRulebody := &model.CreatePrivateSnatOption{
        GatewayId: "80da6f26-94eb-4537-97f0-5a56f4d04cfb",
        VirsubnetId: &virsubnetIdSnatRule,
        Description: &descriptionSnatRule,
        TransitIpIds: listTransitIpIdsSnatRule,
    }
    request.Body = &model.CreatePrivateSnatOptionBody{
        SnatRule: snatRulebody,
    }
    response, err := client.CreatePrivateSnat(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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

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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.

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Parameter	Mandatory	Type	Description
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.

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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	DateTime	Specifies the time when the transit IP address was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the transit IP address was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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.

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Parameter	Type	Description
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.
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.

```
{
  "transit_ips" : [ {
```

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```
    "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"
    } ]
  } ],
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```


SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListTransitIpsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);
```

```
        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ListTransitIpsRequest request = new ListTransitIpsRequest();
        try {
            ListTransitIpsResponse response = client.listTransitIps(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListTransitIpsRequest()
        response = client.list_transit_ips(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
```

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```
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListTransitIpsRequest{}
    response, err := client.ListTransitIps(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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**.

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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

SDK Sample Code

The SDK sample code is as follows.

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Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class DeleteTransitIpSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        DeleteTransitIpRequest request = new DeleteTransitIpRequest();
        request.withTransitIpId("{transit_ip_id}");
        try {
            DeleteTransitIpResponse response = client.deleteTransitIp(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
```

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```
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteTransitIpRequest()
        request.transit_ip_id = "{transit_ip_id}"
        response = client.delete_transit_ip(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteTransitIpRequest{}
    request.TransitIpId = "{transit_ip_id}"
    response, err := client.DeleteTransitIp(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.

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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	DateTime	Specifies the time when the transit IP address was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the transit IP address was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.

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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" : [ {
```

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```
    "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"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

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**)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateTransitIpSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
```

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```
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateTransitIpRequest request = new CreateTransitIpRequest();
        CreateTransitIpRequestBody body = new CreateTransitIpRequestBody();
        List<PrivateTag> listTransitIpTags = new ArrayList<>();
        listTransitIpTags.add(
            new PrivateTag()
                .withKey("key1")
                .withValue("value1")
        );
        CreatTransitIpOption transitIpbody = new CreatTransitIpOption();
        transitIpbody.withVirsubnetId("2759da7b-8015-404c-ae0a-a389007b0e2a")
            .withIpAddress("192.168.1.68")
            .withEnterpriseProjectId("2759da7b-8015-404c-ae0a-a389007b0e2a")
            .withTags(listTransitIpTags);
        body.withTransitIp(transitIpbody);
        request.withBody(body);
        try {
            CreateTransitIpResponse response = client.createTransitIp(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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**)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)
```

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```
client = NatClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(NatRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = CreateTransitIpRequest()
    listTagsTransitIp = [
        PrivateTag(
            key="key1",
            value="value1"
        )
    ]
    transitIpbody = CreatTransitIpOption(
        virsubnet_id="2759da7b-8015-404c-ae0a-a389007b0e2a",
        ip_address="192.168.1.68",
        enterprise_project_id="2759da7b-8015-404c-ae0a-a389007b0e2a",
        tags=listTagsTransitIp
    )
    request.body = CreateTransitIpRequestBody(
        transit_ip=transitIpbody
    )
    response = client.create_transit_ip(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

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**)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())
```

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```
    request := &model.CreateTransitIpRequest{}
    var listTagsTransitIp = []model.PrivateTag{
        {
            Key: "key1",
            Value: "value1",
        },
    }
    ipAddressTransitIp:= "192.168.1.68"
    enterpriseProjectIdTransitIp:= "2759da7b-8015-404c-ae0a-a389007b0e2a"
    transitIpbody := &model.CreatTransitIpOption{
        VirsubnetId: "2759da7b-8015-404c-ae0a-a389007b0e2a",
        IpAddress: &ipAddressTransitIp,
        EnterpriseProjectId: &enterpriseProjectIdTransitIp,
        Tags: &listTagsTransitIp,
    }
    request.Body = &model.CreateTransitIpRequestBody{
        TransitIp: transitIpbody,
    }
    response, err := client.CreateTransitIp(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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}

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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.

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Parameter	Type	Description
ip_address	String	Specifies the transit IP address.
created_at	DateTime	Specifies the time when the transit IP address was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies the time when the transit IP address was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* 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
```

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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"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ShowTransitIpSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ShowTransitIpRequest request = new ShowTransitIpRequest();
        request.withTransitIpId("{transit_ip_id}");
```

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```
        try {
            ShowTransitIpResponse response = client.showTransitIp(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowTransitIpRequest()
        request.transit_ip_id = "{transit_ip_id}"
        response = client.show_transit_ip(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
```

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```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowTransitIpRequest{}
    request.TransitIpId = "{transit_ip_id}"
    response, err := client.ShowTransitIp(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.

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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**.
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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
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 **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_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 **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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
values	Yes	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** 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.
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.

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Parameter	Type	Description
resource_tag	Array of ResourceTag objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.

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**

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- Example 1

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

- Example 2

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

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListPrivateNatsByTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
```

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```
            .withRegion(NatRegion.valueOf("<YOUR REGION>"))
            .build();
        ListPrivateNatsByTagsRequest request = new ListPrivateNatsByTagsRequest();
        ListTagResourceInstancesRequestBody body = new ListTagResourceInstancesRequestBody();
        List<Tags> listbodyNotTagsAny = new ArrayList<>();
        listbodyNotTagsAny.add(
            new Tags()
                .withKey("owner")
                .withValues()
        );
        body.withNotTagsAny(listbodyNotTagsAny);
        body.withAction(ListTagResourceInstancesRequestBody.ActionEnum.fromValue("filter"));
        body.withLimit("1000");
        body.withOffset("0");
        request.withBody(body);
        try {
            ListPrivateNatsByTagsResponse response = client.listPrivateNatsByTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

- Querying private NAT gateways by tag (Setting **action** to **count** and adding tags)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListPrivateNatsByTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
```

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```
            .build();
        ListPrivateNatsByTagsRequest request = new ListPrivateNatsByTagsRequest();
        ListTagResourceInstancesRequestBody body = new ListTagResourceInstancesRequestBody();
        List<String> listTagsValues = new ArrayList<>();
        listTagsValues.add("value1");
        listTagsValues.add("value2");
        List<Tags> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tags()
                .withKey("key1")
                .withValues(listTagsValues)
        );
        List<Match> listbodyMatches = new ArrayList<>();
        listbodyMatches.add(
            new Match()
                .withKey("resource_name")
                .withValue("resource1")
        );
        body.withTags(listbodyTags);
        body.withMatches(listbodyMatches);
        body.withAction(ListTagResourceInstancesRequestBody.ActionEnum.fromValue("count"));
        request.withBody(body);
        try {
            ListPrivateNatsByTagsResponse response = client.listPrivateNatsByTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
try:
    request = ListPrivateNatsByTagsRequest()
    listNotTagsAnybody = [
        Tags(
            key="owner",
        )
    ]
    request.body = ListTagResourceInstancesRequestBody(
        not_tags_any=listNotTagsAnybody,
        action="filter",
        limit="1000",
        offset="0"
    )
    response = client.list_private_nats_by_tags(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Querying private NAT gateways by tag (Setting **action** to **count** and adding tags)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListPrivateNatsByTagsRequest()
        listValuesTags = [
            "value1",
            "value2"
        ]
        listTagsbody = [
            Tags(
                key="key1",
                values=listValuesTags
            )
        ]
        listMatchesbody = [
            Match(
                key="resource_name",
                value="resource1"
            )
        ]
        request.body = ListTagResourceInstancesRequestBody(
```

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```
            tags=listTagsbody,
            matches=listMatchesbody,
            action="count"
        )
        response = client.list_private_nats_by_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListPrivateNatsByTagsRequest{}
    var listNotTagsAnybody = []model.Tags{
        {
            Key: "owner",
        },
    }
    limitListTagResourceInstancesRequestBody:= "1000"
    offsetListTagResourceInstancesRequestBody:= "0"
    request.Body = &model.ListTagResourceInstancesRequestBody{
        NotTagsAny: &listNotTagsAnybody,
        Action: model.GetListTagResourceInstancesRequestBodyActionEnum().FILTER,
        Limit: &limitListTagResourceInstancesRequestBody,
        Offset: &offsetListTagResourceInstancesRequestBody,
    }
    response, err := client.ListPrivateNatsByTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
```

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```
    }
}
```

- Querying private NAT gateways by tag (Setting **action** to **count** and adding tags)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListPrivateNatsByTagsRequest{}
    var listValuesTags = []string{
        "value1",
        "value2",
    }
    var listTagsbody = []model.Tags{
        {
            Key: "key1",
            Values: listValuesTags,
        },
    }
    var listMatchesbody = []model.Match{
        {
            Key: "resource_name",
            Value: "resource1",
        },
    }
    request.Body = &model.ListTagResourceInstancesRequestBody{
        Tags: &listTagsbody,
        Matches: &listMatchesbody,
        Action: model.GetListTagResourceInstancesRequestBodyActionEnum().COUNT,
    }
    response, err := client.ListPrivateNatsByTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.
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.

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Parameter	Type	Description
values	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** 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" ]
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
```

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```
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListPrivateNatTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ListPrivateNatTagsRequest request = new ListPrivateNatTagsRequest();
        try {
            ListPrivateNatTagsResponse response = client.listPrivateNatTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
    try:
        request = ListPrivateNatTagsRequest()
        response = client.list_private_nat_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListPrivateNatTagsRequest{}
    response, err := client.ListPrivateNatTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Query operation succeeded.

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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

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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"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
```

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```
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ShowPrivateNatTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ShowPrivateNatTagsRequest request = new ShowPrivateNatTagsRequest();
        request.withResourceId("{resource_id}");
        try {
            ShowPrivateNatTagsResponse response = client.showPrivateNatTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
```

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```
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowPrivateNatTagsRequest()
        request.resource_id = "{resource_id}"
        response = client.show_private_nat_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowPrivateNatTagsRequest{}
    request.ResourceId = "{resource_id}"
    response, err := client.ShowPrivateNatTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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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.

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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

{
```

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

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreatePrivateNatTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreatePrivateNatTagRequest request = new CreatePrivateNatTagRequest();
        request.withResourceId("{resource_id}");
        CreateResourceTagRequestBody body = new CreateResourceTagRequestBody();
        Tag tagbody = new Tag();
        tagbody.withKey("key1")
            .withValue("value1");
        body.withTag(tagbody);
        request.withBody(body);
        try {
            CreatePrivateNatTagResponse response = client.createPrivateNatTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
```

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```
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreatePrivateNatTagRequest()
        request.resource_id = "{resource_id}"
        tagbody = Tag(
            key="key1",
            value="value1"
        )
        request.body = CreateResourceTagRequestBody(
            tag=tagbody
        )
        response = client.create_private_nat_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
```

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```
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreatePrivateNatTagRequest{}
    request.ResourceId = "{resource_id}"
    tagbody := &model.Tag{
        Key: "key1",
        Value: "value1",
    }
    request.Body = &model.CreateResourceTagRequestBody{
        Tag: tagbody,
    }
    response, err := client.CreatePrivateNatTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	Tag added.

Error Codes

See **Error Codes**.

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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.

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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.
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

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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

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateDeletePrivateNatTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
```

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```
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeletePrivateNatTagsRequest request = new BatchCreateDeletePrivateNatTagsRequest();
        request.withResourceId("{resource_id}");
        BatchOperateResourceTagsRequestBody body = new BatchOperateResourceTagsRequestBody();
        List<Tag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tag()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new Tag()
                .withKey("key2")
                .withValue("value2")
        );
        body.withTags(listbodyTags);
        body.withAction(BatchOperateResourceTagsRequestBody.ActionEnum.fromValue("create"));
        request.withBody(body);
        try {
            BatchCreateDeletePrivateNatTagsResponse response = client.batchCreateDeletePrivateNatTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;
```

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```
public class BatchCreateDeletePrivateNatTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeletePrivateNatTagsRequest request = new BatchCreateDeletePrivateNatTagsRequest();
        request.withResourceId("{resource_id}");
        BatchOperateResourceTagsRequestBody body = new BatchOperateResourceTagsRequestBody();
        List<Tag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tag()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new Tag()
                .withKey("key2")
                .withValue("value2")
        );
        body.withTags(listbodyTags);
        body.withAction(BatchOperateResourceTagsRequestBody.ActionEnum.fromValue("delete"));
        request.withBody(body);
        try {
            BatchCreateDeletePrivateNatTagsResponse response = client.batchCreateDeletePrivateNatTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
```

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```
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeletePrivateNatTagsRequest()
        request.resource_id = "{resource_id}"
        listTagsbody = [
            Tag(
                key="key1",
                value="value1"
            ),
            Tag(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchOperateResourceTagsRequestBody(
            tags=listTagsbody,
            action="create"
        )
        response = client.batch_create_delete_private_nat_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)
```

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```
    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeletePrivateNatTagsRequest()
        request.resource_id = "{resource_id}"
        listTagsbody = [
            Tag(
                key="key1",
                value="value1"
            ),
            Tag(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchOperateResourceTagsRequestBody(
            tags=listTagsbody,
            action="delete"
        )
        response = client.batch_create_delete_private_nat_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeletePrivateNatTagsRequest{}
```

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```
    request.ResourceId = "{resource_id}"
    var listTagsbody = []model.Tag{
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
    }
    request.Body = &model.BatchOperateResourceTagsRequestBody{
        Tags: listTagsbody,
        Action: model.GetBatchOperateResourceTagsRequestBodyActionEnum().CREATE,
    }
    response, err := client.BatchCreateDeletePrivateNatTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeletePrivateNatTagsRequest{}
    request.ResourceId = "{resource_id}"
    var listTagsbody = []model.Tag{
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
```

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```
    }
    request.Body = &model.BatchOperateResourceTagsRequestBody{
        Tags: listTagsbody,
        Action: model.GetBatchOperateResourceTagsRequestBodyActionEnum().DELETE,
    }
    response, err := client.BatchCreateDeletePrivateNatTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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Parameter	Mandatory	Type	Description
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

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
```

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```
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class DeletePrivateNatTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        DeletePrivateNatTagRequest request = new DeletePrivateNatTagRequest();
        request.withKey("{key}");
        request.withResourceId("{resource_id}");
        try {
            DeletePrivateNatTagResponse response = client.deletePrivateNatTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
```

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```
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeletePrivateNatTagRequest()
        request.key = "{key}"
        request.resource_id = "{resource_id}"
        response = client.delete_private_nat_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeletePrivateNatTagRequest{}
    request.Key = "{key}"
    request.ResourceId = "{resource_id}"
    response, err := client.DeletePrivateNatTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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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.

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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**.
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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
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 **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_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 **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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
values	Yes	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** 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.
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.

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Parameter	Type	Description
resource_tag	Array of ResourceTag objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.

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**

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- Example 1

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

- Example 2

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

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListTransitIpsByTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
```

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```
            .withRegion(NatRegion.valueOf("<YOUR REGION>"))
            .build();
        ListTransitIpsByTagsRequest request = new ListTransitIpsByTagsRequest();
        ListTagResourceInstancesRequestBody body = new ListTagResourceInstancesRequestBody();
        List<Tags> listbodyNotTagsAny = new ArrayList<>();
        listbodyNotTagsAny.add(
            new Tags()
                .withKey("owner")
                .withValues()
        );
        body.withNotTagsAny(listbodyNotTagsAny);
        body.withAction(ListTagResourceInstancesRequestBody.ActionEnum.fromValue("filter"));
        body.withLimit("1000");
        body.withOffset("0");
        request.withBody(body);
        try {
            ListTransitIpsByTagsResponse response = client.listTransitIpsByTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

- Querying transit IP addresses by tag (Setting **action** to **count** and adding tags)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class ListTransitIpsByTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
```

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```
            .build();
        ListTransitIpsByTagsRequest request = new ListTransitIpsByTagsRequest();
        ListTagResourceInstancesRequestBody body = new ListTagResourceInstancesRequestBody();
        List<String> listTagsValues = new ArrayList<>();
        listTagsValues.add("value1");
        listTagsValues.add("value2");
        List<Tags> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tags()
                .withKey("key1")
                .withValues(listTagsValues)
        );
        List<Match> listbodyMatches = new ArrayList<>();
        listbodyMatches.add(
            new Match()
                .withKey("resource_name")
                .withValue("resource1")
        );
        body.withTags(listbodyTags);
        body.withMatches(listbodyMatches);
        body.withAction(ListTagResourceInstancesRequestBody.ActionEnum.fromValue("count"));
        request.withBody(body);
        try {
            ListTransitIpsByTagsResponse response = client.listTransitIpsByTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
try:
    request = ListTransitIpsByTagsRequest()
    listNotTagsAnybody = [
        Tags(
            key="owner",
        )
    ]
    request.body = ListTagResourceInstancesRequestBody(
        not_tags_any=listNotTagsAnybody,
        action="filter",
        limit="1000",
        offset="0"
    )
    response = client.list_transit_ips_by_tags(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Querying transit IP addresses by tag (Setting **action** to **count** and adding tags)

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListTransitIpsByTagsRequest()
        listValuesTags = [
            "value1",
            "value2"
        ]
        listTagsbody = [
            Tags(
                key="key1",
                values=listValuesTags
            )
        ]
        listMatchesbody = [
            Match(
                key="resource_name",
                value="resource1"
            )
        ]
        request.body = ListTagResourceInstancesRequestBody(
```

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```
            tags=listTagsbody,
            matches=listMatchesbody,
            action="count"
        )
        response = client.list_transit_ips_by_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListTransitIpsByTagsRequest{}
    var listNotTagsAnybody = []model.Tags{
        {
            Key: "owner",
        },
    }
    limitListTagResourceInstancesRequestBody:= "1000"
    offsetListTagResourceInstancesRequestBody:= "0"
    request.Body = &model.ListTagResourceInstancesRequestBody{
        NotTagsAny: &listNotTagsAnybody,
        Action: model.GetListTagResourceInstancesRequestBodyActionEnum().FILTER,
        Limit: &limitListTagResourceInstancesRequestBody,
        Offset: &offsetListTagResourceInstancesRequestBody,
    }
    response, err := client.ListTransitIpsByTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
```

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```
    }
}
```

- Querying transit IP addresses by tag (Setting **action** to **count** and adding tags)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListTransitIpsByTagsRequest{}
    var listValuesTags = []string{
        "value1",
        "value2",
    }
    var listTagsbody = []model.Tags{
        {
            Key: "key1",
            Values: listValuesTags,
        },
    }
    var listMatchesbody = []model.Match{
        {
            Key: "resource_name",
            Value: "resource1",
        },
    }
    request.Body = &model.ListTagResourceInstancesRequestBody{
        Tags: &listTagsbody,
        Matches: &listMatchesbody,
        Action: model.GetListTagResourceInstancesRequestBodyActionEnum().COUNT,
    }
    response, err := client.ListTransitIpsByTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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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.

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Parameter	Type	Description
values	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** 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" ]
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
```

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```
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ListTransitIpTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ListTransitIpTagsRequest request = new ListTransitIpTagsRequest();
        try {
            ListTransitIpTagsResponse response = client.listTransitIpTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()
```

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```
    try:
        request = ListTransitIpTagsRequest()
        response = client.list_transit_ip_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListTransitIpTagsRequest{}
    response, err := client.ListTransitIpTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Query operation succeeded.

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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

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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"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
```

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```
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class ShowTransitIpTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        ShowTransitIpTagsRequest request = new ShowTransitIpTagsRequest();
        request.withResourceId("{resource_id}");
        try {
            ShowTransitIpTagsResponse response = client.showTransitIpTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
```

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```
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowTransitIpTagsRequest()
        request.resource_id = "{resource_id}"
        response = client.show_transit_ip_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowTransitIpTagsRequest{}
    request.ResourceId = "{resource_id}"
    response, err := client.ShowTransitIpTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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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.

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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

{
```

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

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class CreateTransitIpTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        CreateTransitIpTagRequest request = new CreateTransitIpTagRequest();
        request.withResourceId("{resource_id}");
        CreateResourceTagRequestBody body = new CreateResourceTagRequestBody();
        Tag tagbody = new Tag();
        tagbody.withKey("key1")
            .withValue("value1");
        body.withTag(tagbody);
        request.withBody(body);
        try {
            CreateTransitIpTagResponse response = client.createTransitIpTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
```

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```
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateTransitIpTagRequest()
        request.resource_id = "{resource_id}"
        tagbody = Tag(
            key="key1",
            value="value1"
        )
        request.body = CreateResourceTagRequestBody(
            tag=tagbody
        )
        response = client.create_transit_ip_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
```

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```
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateTransitIpTagRequest{}
    request.ResourceId = "{resource_id}"
    tagbody := &model.Tag{
        Key: "key1",
        Value: "value1",
    }
    request.Body = &model.CreateResourceTagRequestBody{
        Tag: tagbody,
    }
    response, err := client.CreateTransitIpTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	Tag added.

Error Codes

See **Error Codes**.

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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.

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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.
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

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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

SDK Sample Code

The SDK sample code is as follows.

Java

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateDeleteTransitIpTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
```

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```
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeleteTransitIpTagsRequest request = new BatchCreateDeleteTransitIpTagsRequest();
        request.withResourceId("{resource_id}");
        BatchOperateResourceTagsRequestBody body = new BatchOperateResourceTagsRequestBody();
        List<Tag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tag()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new Tag()
                .withKey("key2")
                .withValue("value2")
        );
        body.withTags(listbodyTags);
        body.withAction(BatchOperateResourceTagsRequestBody.ActionEnum.fromValue("create"));
        request.withBody(body);
        try {
            BatchCreateDeleteTransitIpTagsResponse response = client.batchCreateDeleteTransitIpTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

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

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;

import java.util.List;
import java.util.ArrayList;
```

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```
public class BatchCreateDeleteTransitIpTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        BatchCreateDeleteTransitIpTagsRequest request = new BatchCreateDeleteTransitIpTagsRequest();
        request.withResourceId("{resource_id}");
        BatchOperateResourceTagsRequestBody body = new BatchOperateResourceTagsRequestBody();
        List<Tag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new Tag()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new Tag()
                .withKey("key2")
                .withValue("value2")
        );
        body.withTags(listbodyTags);
        body.withAction(BatchOperateResourceTagsRequestBody.ActionEnum.fromValue("delete"));
        request.withBody(body);
        try {
            BatchCreateDeleteTransitIpTagsResponse response = client.batchCreateDeleteTransitIpTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *
```

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```
if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeleteTransitIpTagsRequest()
        request.resource_id = "{resource_id}"
        listTagsbody = [
            Tag(
                key="key1",
                value="value1"
            ),
            Tag(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchOperateResourceTagsRequestBody(
            tags=listTagsbody,
            action="create"
        )
        response = client.batch_create_delete_transit_ip_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

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

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
        .with_credentials(credentials) \
```

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```
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateDeleteTransitIpTagsRequest()
        request.resource_id = "{resource_id}"
        listTagsbody = [
            Tag(
                key="key1",
                value="value1"
            ),
            Tag(
                key="key2",
                value="value2"
            )
        ]
        request.body = BatchOperateResourceTagsRequestBody(
            tags=listTagsbody,
            action="delete"
        )
        response = client.batch_create_delete_transit_ip_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeleteTransitIpTagsRequest{}
    request.ResourceId = "{resource_id}"
    var listTagsbody = []model.Tag{
```

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```
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
    }
    request.Body = &model.BatchOperateResourceTagsRequestBody{
        Tags: listTagsbody,
        Action: model.GetBatchOperateResourceTagsRequestBodyActionEnum().CREATE,
    }
    response, err := client.BatchCreateDeleteTransitIpTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

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

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.BatchCreateDeleteTransitIpTagsRequest{}
    request.ResourceId = "{resource_id}"
    var listTagsbody = []model.Tag{
        {
            Key: "key1",
            Value: "value1",
        },
        {
            Key: "key2",
            Value: "value2",
        },
    }
    request.Body = &model.BatchOperateResourceTagsRequestBody{
```

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```
        Tags: listTagsbody,
        Action: model.GetBatchOperateResourceTagsRequestBodyActionEnum().DELETE,
    }
    response, err := client.BatchCreateDeleteTransitIpTags(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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.

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Parameter	Mandatory	Type	Description
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

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
```

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```
import com.huaweicloud.sdk.nat.v2.region.NatRegion;
import com.huaweicloud.sdk.nat.v2.*;
import com.huaweicloud.sdk.nat.v2.model.*;


public class DeleteTransitIpTagSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
                .withProjectId(projectId)
                .withAk(ak)
                .withSk(sk);

        NatClient client = NatClient.newBuilder()
                .withCredential(auth)
                .withRegion(NatRegion.valueOf("<YOUR REGION>"))
                .build();
        DeleteTransitIpTagRequest request = new DeleteTransitIpTagRequest();
        request.withKey("{key}");
        request.withResourceId("{resource_id}");
        try {
            DeleteTransitIpTagResponse response = client.deleteTransitIpTag(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdknat.v2.region.nat_region import NatRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdknat.v2 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = NatClient.new_builder() \
```

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```
        .with_credentials(credentials) \
        .with_region(NatRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteTransitIpTagRequest()
        request.key = "{key}"
        request.resource_id = "{resource_id}"
        response = client.delete_transit_ip_tag(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    nat "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/nat/v2/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := nat.NewNatClient(
        nat.NatClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteTransitIpTagRequest{}
    request.Key = "{key}"
    request.ResourceId = "{resource_id}"
    response, err := client.DeleteTransitIpTag(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in **API Explorer**. SDK sample code can be automatically generated.

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Status Codes

Status Code	Description
204	Tag deleted.

Error Codes

See **Error Codes**.

5.7 Transit Subnet

5.7.1 Querying Transit Subnets

Function

This API is used to query transit subnets.

Constraints

You can type a question mark (?) and an 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-subnets

Table 5-161 Path Parameters

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

Table 5-162 Query Parameters

Parameter	Mandatory	Type	Description
id	No	Array of strings	Specifies the transit subnet ID.

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Parameter	Mandatory	Type	Description
name	No	Array of strings	Specifies the transit subnet name.
description	No	Array of strings	Provides supplementary information about the transit subnet.
virsubnet_project_id	No	Array of strings	Specifies the ID of the project to which the transit subnet belongs.
vpc_id	No	Array of strings	Specifies the ID of the VPC to which the transit subnet belongs.
virsubnet_id	No	Array of strings	Specifies the transit subnet ID.
status	No	Array of strings	Specifies the transit subnet status. Range: **ACTIVE**: The transit subnet is normal. **PENDING_ACCEPT**: The request for the transit subnet is waiting for approval. **REJECTED**: The request for the transit subnet is rejected.
limit	No	Integer	Specifies the number of records returned on each page. Value range: 1–2000 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 was obtained from **next_marker** or **previous_marker** in **PageInfo** queried last time.
page_reverse	No	Boolean	Specifies whether to query the previous page.

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Request Parameters

Table 5-163 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-164 Response body parameters

Parameter	Type	Description
transit_subnets	Array of **TransitSubnet** objects	Specifies the response body for querying transit subnets. For details, see the description of the **TransitSubnet** field.
request_id	String	Specifies the request ID.
page_info	**PageInfo** object	Specifies the pagination information.

Table 5-165 TransitSubnet

Parameter	Type	Description
id	String	Specifies the transit subnet ID.
name	String	Specifies the transit subnet name.
description	String	Provides supplementary information about the transit subnet.
virsubnet_project_id	String	Specifies the ID of the project to which the transit subnet belongs.
project_id	String	Specifies the project ID.
vpc_id	String	Specifies the ID of the VPC to which the transit subnet belongs.

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Parameter	Type	Description
virsubnet_id	String	Specifies the transit subnet ID.
cidr	String	Specifies the CIDR block of the transit subnet.
type	String	Specifies the transit subnet type. The value can only be **VPC**.
status	String	Specifies the transit subnet status. The value can be **ACTIVE**, indicating the transit subnet is normal.
ip_count	Integer	Specifies the number of IP addresses that has been assigned from the transit subnet.
created_at	DateTime	Specifies when the transit subnet was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies when the transit subnet was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
tags	Array of **Tag** objects	Specifies the tag list.

Table 5-166 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 5-167 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.

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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

None

Example Responses

Status code: 200

Transit subnets queried.


```
{
  "transit_subnets" : [ {
    "id" : "48b55781-306c-4a90-9cc0-d376337fae4f",
    "name" : "transit-subnet_t1",
    "description" : "transit-subnet-description",
    "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
    "project_id" : "aea5011c0bc2454d8645a560345da810",
    "vpc_id" : "f9169a4f-5f0a-41ce-b2a3-834c15b038c2",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "cidr" : "192.168.1.0/24",
    "type" : "VPC",
    "status" : "ACTIVE",
    "ip_count" : 0,
    "created_at" : "2021-07-01T09:15:54Z",
    "updated_at" : "2021-04-01T09:15:54Z",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }, {
    "id" : "500caad8-5023-11f0-8369-02421d92b15b",
    "name" : "transit-subnet_t2",
    "description" : "transit-subnet-description",
    "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
    "project_id" : "aea5011c0bc2454d8645a560345da810",
    "vpc_id" : "f9169a4f-5f0a-41ce-b2a3-834c15b038c2",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2d",
    "cidr" : "192.168.2.0/24",
    "type" : "VPC",
    "status" : "ACTIVE",
    "ip_count" : 0,
    "created_at" : "2021-07-01T09:15:54Z",
    "updated_at" : "2021-04-01T09:15:54Z",
    "tags" : [ {
      "key" : "key2",
      "value" : "value2"
    } ]
  } ],
```


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```
  "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	Transit subnets queried.

Error Codes

See **Error Codes**.

5.7.2 Creating a Transit Subnet

Function

This API is used to create a transit subnet.

Calling Method

For details, see **Calling APIs**.

URI

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

Table 5-168 Path Parameters

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

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Request Parameters

Table 5-169 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-170 Request body parameters

Parameter	Mandatory	Type	Description
transit_subnet	Yes	**CreateTransitSubnetOption** object	Specifies the request body for creating a transit subnet.

Table 5-171 CreateTransitSubnetOption

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the transit subnet name. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String	Provides supplementary information about the transit subnet. The description can contain up to 255 characters and cannot contain angle brackets (<>).
virsubnet_id	Yes	String	Specifies the transit subnet ID.
virsubnet_project_id	Yes	String	Specifies the ID of the project to which the transit subnet belongs. Only digits and lowercase letters are supported.
tags	No	Array of **Tag** objects	Specifies the tags.

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Table 5-172 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 5-173 Response body parameters

Parameter	Type	Description
transit_subnet	**TransitSubnet** object	Specifies the response body of the transit subnet.
request_id	String	Specifies the request ID.

Table 5-174 TransitSubnet

Parameter	Type	Description
id	String	Specifies the transit subnet ID.
name	String	Specifies the transit subnet name.
description	String	Provides supplementary information about the transit subnet.
virsubnet_project_id	String	Specifies the ID of the project to which the transit subnet belongs.
project_id	String	Specifies the project ID.
vpc_id	String	Specifies the ID of the VPC to which the transit subnet belongs.
virsubnet_id	String	Specifies the transit subnet ID.
cidr	String	Specifies the CIDR block of the transit subnet.
type	String	Specifies the transit subnet type. The value can only be **VPC**.

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Parameter	Type	Description
status	String	Specifies the transit subnet status. The value can be **ACTIVE**, indicating the transit subnet is normal.
ip_count	Integer	Specifies the number of IP addresses that has been assigned from the transit subnet.
created_at	DateTime	Specifies when the transit subnet was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies when the transit subnet was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
tags	Array of **Tag** objects	Specifies the tag list.

Table 5-175 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 transit subnet

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

{
  "transit_subnet" : {
    "name" : "transit-subnet_t1",
    "description" : "transit-subnet-description",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }
}
```

Example Responses

Status code: 201

The transit subnet created.

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```
{
  "request_id" : "9882046a9b96f1405472e36d797e33dc",
  "transit_subnet" : {
    "id" : "48b55781-306c-4a90-9cc0-d376337fae4f",
    "name" : "transit-subnet_t1",
    "description" : "transit-subnet-description",
    "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
    "project_id" : "aea5011c0bc2454d8645a560345da810",
    "vpc_id" : "f9169a4f-5f0a-41ce-b2a3-834c15b038c2",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "cidr" : "192.168.1.0/24",
    "type" : "VPC",
    "status" : "ACTIVE",
    "ip_count" : 0,
    "created_at" : "2021-07-01T09:15:54Z",
    "updated_at" : "2021-04-01T09:15:54Z",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  }
}
```

Status Codes

Status Code	Description
201	The transit subnet created.
400	Bad Request
409	Conflict

Error Codes

See **Error Codes**.

5.7.3 Querying the Details of a Transit Subnet

Function

This API is used to query the details of a specified transit subnet.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/private-nat/transit-subnets/{transit_subnet_id}

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Table 5-176 Path Parameters

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

Request Parameters

Table 5-177 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-178 Response body parameters

Parameter	Type	Description
transit_subnet	**TransitSubnet** object	Specifies the response body of the transit subnet.
request_id	String	Specifies the request ID.

Table 5-179 TransitSubnet

Parameter	Type	Description
id	String	Specifies the transit subnet ID.
name	String	Specifies the transit subnet name.
description	String	Provides supplementary information about the transit subnet.

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Parameter	Type	Description
virsubnet_project_id	String	Specifies the ID of the project to which the transit subnet belongs.
project_id	String	Specifies the project ID.
vpc_id	String	Specifies the ID of the VPC to which the transit subnet belongs.
virsubnet_id	String	Specifies the transit subnet ID.
cidr	String	Specifies the CIDR block of the transit subnet.
type	String	Specifies the transit subnet type. The value can only be **VPC**.
status	String	Specifies the transit subnet status. The value can be **ACTIVE**, indicating the transit subnet is normal.
ip_count	Integer	Specifies the number of IP addresses that has been assigned from the transit subnet.
created_at	DateTime	Specifies when the transit subnet was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies when the transit subnet was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
tags	Array of **Tag** objects	Specifies the tag list.

Table 5-180 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

None

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Example Responses

Status code: 200

The transit subnet queried.


```
{
  "transit_subnet" : {
    "id" : "48b55781-306c-4a90-9cc0-d376337fae4f",
    "name" : "transit-subnet_t1",
    "description" : "transit-subnet-description",
    "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
    "project_id" : "aea5011c0bc2454d8645a560345da810",
    "vpc_id" : "f9169a4f-5f0a-41ce-b2a3-834c15b038c2",
    "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
    "cidr" : "192.168.1.0/24",
    "type" : "VPC",
    "status" : "ACTIVE",
    "ip_count" : 0,
    "created_at" : "2021-07-01T09:15:54Z",
    "updated_at" : "2021-04-01T09:15:54Z",
    "tags" : [ {
      "key" : "key1",
      "value" : "value1"
    } ]
  },
  "request_id" : "747a911c17067a39692f75ac146fb47e"
}
```


Status Codes

Status Code	Description
200	The transit subnet queried.
400	Bad Request

Error Codes

See **Error Codes**.

5.7.4 Updating a Transit Subnet

Function

This API is used to update a transit subnet.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/private-nat/transit-subnets/{transit_subnet_id}

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Table 5-181 Path Parameters

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

Request Parameters

Table 5-182 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-183 Request body parameters

Parameter	Mandatory	Type	Description
transit_subnet	Yes	**UpdateTransitSubnetOption** object	Specifies the request body for updating a transit subnet.

Table 5-184 UpdateTransitSubnetOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the transit subnet name. The name can contain only digits, letters, underscores (_), and hyphens (-). Only the applicant of the transit subnet can modify the transit subnet name.

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Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the transit subnet. The description can contain up to 255 characters and cannot contain angle brackets (<>). Only the applicant of the transit subnet can modify the transit subnet description.

Response Parameters

Status code: 200

Table 5-185 Response body parameters

Parameter	Type	Description
transit_subnet	**TransitSubnet** object	Specifies the response body of the transit subnet.
request_id	String	Specifies the request ID.

Table 5-186 TransitSubnet

Parameter	Type	Description
id	String	Specifies the transit subnet ID.
name	String	Specifies the transit subnet name.
description	String	Provides supplementary information about the transit subnet.
virsubnet_project_id	String	Specifies the ID of the project to which the transit subnet belongs.
project_id	String	Specifies the project ID.
vpc_id	String	Specifies the ID of the VPC to which the transit subnet belongs.
virsubnet_id	String	Specifies the transit subnet ID.
cidr	String	Specifies the CIDR block of the transit subnet.
type	String	Specifies the transit subnet type. The value can only be **VPC**.

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Parameter	Type	Description
status	String	Specifies the transit subnet status. The value can be **ACTIVE**, indicating the transit subnet is normal.
ip_count	Integer	Specifies the number of IP addresses that has been assigned from the transit subnet.
created_at	DateTime	Specifies when the transit subnet was assigned. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
updated_at	DateTime	Specifies when the transit subnet was updated. It is a UTC time in *yyyy-mm-ddThh:mm:ssZ* format.
tags	Array of **Tag** objects	Specifies the tag list.

Table 5-187 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 the name and description of a transit subnet

```
PUT https://{Endpoint}/v3/70505c941b9b4dfd82fd351932328a2f/private-nat/transit-subnets

{
  "transit_subnet" : {
    "name" : "transit-subnet_t2",
    "description" : "transit-subnet-description2"
  }
}
```

Example Responses

Status code: 200

The transit subnet updated.

```
{
  "request_id" : "9882046a9b96f1405472e36d797e33dc",
  "transit_subnet" : {
    "id" : "48b55781-306c-4a90-9cc0-d376337fae4f",
```

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```
  "name" : "transit-subnet_t1",
  "description" : "transit-subnet-description",
  "virsubnet_project_id" : "aea5011c0bc2454d8645a560345da810",
  "project_id" : "aea5011c0bc2454d8645a560345da810",
  "vpc_id" : "f9169a4f-5f0a-41ce-b2a3-834c15b038c2",
  "virsubnet_id" : "2759da7b-8015-404c-ae0a-a389007b0e2a",
  "cidr" : "192.168.1.0/24",
  "type" : "VPC",
  "status" : "ACTIVE",
  "ip_limit_request" : 10,
  "ip_limit_effective" : 10,
  "ip_count" : 0,
  "created_at" : "2021-07-01T09:15:54Z",
  "updated_at" : "2021-04-01T09:15:54Z",
  "tags" : [ {
    "key" : "key1",
    "value" : "value1"
  } ]
 }
}
```


Status Codes

Status Code	Description
200	The transit subnet updated.
400	Bad Request

Error Codes

See **Error Codes**.

5.7.5 Deleting a Transit Subnet

Function

This API is used to delete a transit subnet.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/private-nat/transit-subnets/{transit_subnet_id}

Table 5-188 Path Parameters

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

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Request Parameters

Table 5-189 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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

The transit subnet deleted.

None

Example Requests

None

Example Responses

None

Status Codes

Status Code	Description
204	The transit subnet deleted.
400	Bad Request

Error Codes

See **Error Codes**.

5.8 Transit Subnet Tags

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5.8.1 Querying Transit Subnets by Tag

Function

This API is used to query transit subnets by tag.

TMS uses this API to filter and list transit subnets by tag.

Calling Method

For details, see **Calling APIs**.

URI

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

Table 5-190 Path Parameters

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

Request Parameters

Table 5-191 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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.

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Table 5-192 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**.
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.

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
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 **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_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 **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.

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Parameter	Mandatory	Type	Description
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 5-193 Match

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

Table 5-194 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.

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Parameter	Mandatory	Type	Description
values	Yes	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** when searching for resources.

Response Parameters

Status code: 200

Table 5-195 Response body parameters

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

Table 5-196 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.

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Parameter	Type	Description
resource_tag	Array of ResourceTag objects	Specifies the list of queried tags. If no tag is matched, an empty array is returned.

Table 5-197 ResourceTag

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

Example Requests

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

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

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

- Querying transit subnets by tag (Setting **action** to **count** and specifying search criteria)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-subnets/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**

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- Example 1

```
{
  "resources" : [ {
    "resource_detail" : null,
    "resource_id" : "ae33be9b-d2c0-441b-a8d0-f6dafedf1778",
    "resource_name" : "transit_subnets",
    "resource_tag" : [ {
      "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**.

5.8.2 Querying Tags of All Transit Subnets in a Specified Project

Function

This API is used to query tags of all transit subnets of a tenant in a project.

TMS uses this API to list tags of all transit subnets, and provides tag association when users tag or filter transit subnets.

Calling Method

For details, see **Calling APIs**.

URI

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

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Table 5-198 Path Parameters

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

Request Parameters

Table 5-199 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-200 Response body parameters

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

Table 5-201 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.

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Parameter	Type	Description
values	Array of strings	Specifies the list of tag values. Each value can contain a maximum of 255 Unicode characters and cannot contain spaces. Before verification and use, delete spaces before and after the value. The value can be an empty array but cannot be left blank. If **values** is not specified, any parameter value can be queried. All values of a tag key are in the OR relationship. The system verifies the length, but not the character set of **values** when searching for resources.

Example Requests

```
GET https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-subnets/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**.

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5.8.3 Querying Tags of a Transit Subnet

Function

This API is used to query tags of a specified transit subnet.

TMS uses this API to query all tags of a specified subnet.

Calling Method

For details, see **Calling APIs**.

URI

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

Table 5-202 Path Parameters

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

Request Parameters

Table 5-203 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-204 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.

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Parameter	Type	Description
tags	Array of **Tag** objects	Specifies the tags.

Table 5-205 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-subnets/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**.

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5.8.4 Adding a Tag to a Transit Subnet

Function

This API is used to add a tag to a specified transit subnet.

A transit subnet 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-subnets/{resource_id}/tags

Table 5-206 Path Parameters

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

Request Parameters

Table 5-207 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-208 Request body parameters

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

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Table 5-209 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 transit subnet (Setting **key** to **key1** and **value** to **value1**)

```
POST https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-subnets/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**.

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5.8.5 Batch Adding or Deleting Tags to or from a Transit Subnet

Function

This API is used to batch add or delete tags to or from a transit subnet.

- TMS uses this API to batch manage tags of a specified transit subnet.
- A transit subnet 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 tag to be added has the same key as an existing tag, the tag will be added and overwrite the existing one.
- During tag deletion, if some tags to be deleted do not exist, the operation is considered as 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-subnets/{resource_id}/tags/action

Table 5-210 Path Parameters

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

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Request Parameters

Table 5-211 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 5-212 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 5-213 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

Tags added or deleted.

None

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Example Requests

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

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

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

- Deleting tags from a transit subnet (Setting **action** to **delete** and deleting two tags: **key1**, **value1** and **key2**, **value2**)

```
POST  https://{Endpoint}/v3/cfa563efb77d4b6d9960781d82530fd8/transit-subnets/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**.

5.8.6 Deleting a Transit Subnet Tag

Function

This is an idempotent API to delete a tag from a transit subnet.

When a tag is deleted, the tag character set is not verified. Before calling this API, encode the API URI. The server must decode 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.

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Calling Method

For details, see **Calling APIs**.

URI

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

Table 5-214 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 transit subnet ID.

Request Parameters

Table 5-215 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	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 transit subnet tag

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

Example Responses

None

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Status Codes

Status Code	Description
204	Tag deleted.

Error Codes

See **Error Codes**.

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6 Application Examples

6.1 Example 1: Creating a Public NAT Gateway and Configuring an SNAT Rule

Scenarios

This section describes how to create an SNAT rule by calling APIs. For details about how to call APIs, see **Calling APIs**.

Prerequisites

- You have created a VPC and a subnet. For details, see **Creating a VPC and Subnet for an ECS**.
- Ensure that the VPC does not have a default route. (This restriction does not apply to the **CN North-Beijing4** region.)
- 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**.
- If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

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

Procedure

Step 1 Create a NAT gateway.

1. Determine the VPC to be used.
   - Query VPCs.
     URI format: GET /v1/{project_id}/vpcs
     For details, see **Querying VPCs**.

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- Select a VPC that does not have a default route, and make a note of the VPC ID.

2. Determine the subnet in the VPC to be used.
   - Query subnets in the VPC.

     URI format: GET /v1/{project_id}/subnets?vpc_id={vpc_id}

     For details, see **Querying Subnets**.
   - Select a subnet and make a note of the subnet ID.
3. Create a public NAT gateway.
   - API

     URI format: POST /v2/{project_id}/nat_gateways

     For details, see **Creating a Public NAT Gateway**.
   - Example request

     POST https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/nat_gateways

     Obtain *{endpoint}* from **Regions and Endpoints**.
   - Example response

```
{
   "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"
   }
}
```

4. Ensure that the public NAT gateway is successfully created and is in the active state.

   API

   URI format: GET /v2/{project_id}/nat_gateways/{nat_gateway_id}

   For details, see **Querying the Details of a Public NAT Gateway**.
5. Make a note of the public NAT gateway ID and the value of **internal_network_id**.

Step 2 Determine the EIP to be used.

1. Query EIPs.

   API

   URI format: **GET /v1/{project_id}/publicips**

   For details, see **Querying EIPs**.
2. Select an EIP based on service requirements and make a note of the EIP ID.

Step 3 Create an SNAT rule.

- API

  URI format: POST /v2/{project_id}/snat_rules

  For details, see **Creating an SNAT Rule**.
- Example request

  POST https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/snat_rules

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Obtain *{endpoint}* from **Regions and Endpoints**.

Body:

```
{
   "snat_rule": {
      "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
      "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
      "source_type": 0,
      "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
      "description": "my snat rule 01"
   }
}
```

- Example response

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

Step 4 Verify that the SNAT rule is successfully created.

- API

  URI format: GET /v2/{project_id}/snat_rules/{snat_rule_id}

  For details, see **Querying the Details of an SNAT Rule**.

- Example request

  GET https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/snat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338

  Obtain *{endpoint}* from **Regions and Endpoints**.

- Example response

```
{
   "snat_rule": {
      "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a",
      "status": "ACTIVE",
      "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
      "admin_state_up": true,
      "network_id": "eaad9cd6-2372-4be1-9535-9bd37210ae7b",
      "source_type": 0,
      "tenant_id": "27e25061336f4af590faeabeb7fcd9a3",
      "created_at": "2017-11-18 07:54:21.665430",
      "id": "5b95c675-69c2-4656-ba06-58ff72e1d338",
      "floating_ip_address": "5.21.11.226",
      "freezed_ip_address": "",
      "description": "my snat rule 01"
   }
}
```

----End

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6.2 Example 2: Creating a Public NAT Gateway and Configuring a DNAT Rule

Scenarios

This section describes how to create a DNAT rule by calling APIs. For details about how to call APIs, see **Calling APIs**.

Prerequisites

- You have created a VPC and a subnet. For details, see **Creating a VPC and Subnet for an ECS**.
- Ensure that the VPC does not have a default route. (This restriction does not apply to the **CN North-Beijing4** region.)
- 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**.
- If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

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

Procedure

Step 1 Create a NAT gateway.

1. Determine the VPC to be used.
   - Query VPCs.
     URI format: GET /v1/{project_id}/vpcs
     For details, see **Querying VPCs**.
   - Select a VPC that does not have a default route, and make a note of the VPC ID.
2. Determine the subnet in the VPC to be used.
   - Query subnets in the VPC.
     URI format: GET /v1/{project_id}/subnets?vpc_id={vpc_id}
     For details, see **Querying Subnets**.
   - Select a subnet and make a note of the subnet ID.
3. Create a public NAT gateway.
   - API
     URI format: POST /v2/{project_id}/nat_gateways
     For details, see **Creating a Public NAT Gateway**.
   - Example request
     POST https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/nat_gateways

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Obtain *{endpoint}* from **Regions and Endpoints**.

– Example response

```
{
    "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"
    }
}
```

4. Ensure that the public NAT gateway is successfully created and is in the active state.

   API

   URI format: GET /v2/{project_id}/nat_gateways/{nat_gateway_id}

   For details, see **Querying the Details of a Public NAT Gateway**.

5. Make a note of the public NAT gateway ID and the value of **internal_network_id**.

Step 2 Determine the ECS to be used.

1. Query ECSs.

   API

   URI format: GET https://{endpoint}/v1/{project_id}/cloudservers/detail

   For details, see **Querying Details About ECSs**.

2. Select an ECS based on service requirements and make a note of the port ID of the ECS NIC.

Step 3 Determine the EIP to be used.

1. Query EIPs.

   API

   URI format: GET /v1/{project_id}/publicips

   For details, see **Querying EIPs**.

2. Select an EIP based on service requirements and make a note of the EIP ID.

Step 4 Create a DNAT rule.

- API

  URI format: POST /v2/{project_id}/dnat_rules

  For details, see **Creating a DNAT Rule**.

- Example request

  POST https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/dnat_rules

  Obtain *{endpoint}* from **Regions and Endpoints**.

  Body:

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

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```
    "external_service_port": 242,
    "description": "my dnat rule 01"
  }
}
```

- Example response

```
{
  "dnat_rule": {
    "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
    "status": "ACTIVE",
    "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
    "admin_state_up": true,
    "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "abc",
    "created_at": "2017-11-15 15:44:42.595173",
    "id": "79195d50-0271-41f1-bded-4c089b2502ff",
    "external_service_port": 242,
    "floating_ip_address": "5.21.11.226",
    "description": "my dnat rule 01"
  }
}
```

Step 5 Verify that the DNAT rule is successfully created.

- API

  URI format: GET /v2/{project_id}/dnat_rules/{dnat_rule_id}

  For details, see **Querying the Details of a DNAT Rule**.

- Example request

  GET https://{Endpoint}/v2/27e25061336f4af590faeabeb7fcd9a3/dnat_rules/5b95c675-69c2-4656-ba06-58ff72e1d338

  Obtain *{endpoint}* from **Regions and Endpoints**.

- Example response

```
{
  "dnat_rule": {
    "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
    "status": "ACTIVE",
    "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
    "admin_state_up": true,
    "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "abc",
    "created_at": "2017-11-15 15:44:42.595173",
    "id": "79195d50-0271-41f1-bded-4c089b2502ff",
    "external_service_port": 242,
    "floating_ip_address": "5.21.11.226",
    "description": "my dnat rule 01"
  }
}
```

----End

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7 Permissions Policies and Supported Actions

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

NOTE

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

A Huawei Cloud account has all of the permissions required to call all APIs, but IAM users must have the required permissions specifically assigned. 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:

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- 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.

  NOTE

  The check mark (√) indicates that an action takes effect. The cross mark (x) indicates that an action does not take effect.

NAT Gateway supports the following actions that can be defined in custom policies:

- **Public NAT Gateways**, including actions supported by all v2 APIs of the NAT gateway, such as creating, updating, and deleting NAT gateways.
- **SNAT Rules of Public NAT Gateways**, including actions supported by all v2 APIs of the SNAT rule, such as creating and querying SNAT rules.
- **DNAT Rules of Public NAT Gateways**, including actions supported by all v2 APIs of the DNAT rule, such as creating and querying DNAT rules.

7.2 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	√	√

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

7.3 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	√	√

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Permission	API	Action	IAM Project	Enterprise Project
Updating an SNAT Rule	PUT /v2/{project_id}/snat_rules/{snat_rule_id}	nat:snatRules:update	√	√

7.4 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	√	√
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	√	√

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7.5 Private NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating a Private NAT Gateway	POST /v3/{project_id}/private-nat/gateways	nat:privateNatGateways:create	√	√
Querying Private NAT Gateways	GET /v3/{project_id}/private-nat/gateways	nat:privateNatGateways:list	√	√
Querying a Private NAT Gateway	GET /v3/{project_id}/private-nat/gateways/{gateway_id}	nat:privateNatGateways:get	√	√
Updating a Private NAT Gateway	PUT /v3/{project_id}/private-nat/gateways/{gateway_id}	nat:privateNatGateways:update	√	√
Deleting a Private NAT Gateway	DELETE /v3/{project_id}/private-nat/gateways/{gateway_id}	nat:privateNatGateways:delete	√	√

7.6 Private NAT Gateway - Transit IP Address

Permission	API	Action	IAM Project	Enterprise Project
Assigning a Transit IP Address	POST /v3/{project_id}/private-nat/transit-ips	nat:transitIps:create	√	√
Querying a Transit IP Address	GET /v3/{project_id}/private-nat/transit-ips/{transit_ip_id}	nat:transitIps:get	√	√
Querying Transit IP Addresses	GET /v3/{project_id}/private-nat/transit-ips	nat:transitIps:list	√	√

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Permission	API	Action	IAM Project	Enterprise Project
Releasing a Transit IP Address	DELETE /v3/{project_id}/private-nat/transit-ips/{transit_ip_id}	nat:transitIps:delete	√	√

7.7 SNAT Rules of Private NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating an SNAT Rule	POST /v3/{project_id}/private-nat/snat-rules	nat:privateNatSnatRules:create	√	√
Querying an SNAT Rule	GET /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}	nat:privateNatSnatRules:get	√	√
Querying SNAT Rules	GET /v3/{project_id}/private-nat/snat-rules	nat:privateNatSnatRules:list	√	√
Updating an SNAT Rule	PUT /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}	nat:privateNatSnatRules:update	√	√
Deleting an SNAT Rule	DELETE /v3/{project_id}/private-nat/snat-rules/{snat_rule_id}	nat:privateNatSnatRules:delete	√	√

7.8 DNAT Rules of Private NAT Gateways

Permission	API	Action	IAM Project	Enterprise Project
Creating a DNAT Rule	POST /v3/{project_id}/private-nat/dnat-rules	nat:privateNatDnatRules:create	√	√
Querying a DNAT Rule	GET /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}	nat:privateNatDnatRules:get	√	√
Querying DNAT Rules	GET /v3/{project_id}/private-nat/dnat-rules	nat:privateNatDnatRules:list	√	√

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Permission	API	Action	IAM Project	Enterprise Project
Updating a DNAT Rule	PUT /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}	nat:privateNatDnatRules:update	√	√
Deleting a DNAT Rule	DELETE /v3/{project_id}/private-nat/dnat-rules/{dnat_rule_id}	nat:privateNatDnatRules:delete	√	√

7.9 Private NAT Gateway - Tag

Permission	API	Action	IAM Project	Enterprise Project
Adding a Tag to a Private NAT Gateway	POST /v3/{project_id}/private-nat-gateways/{resource_id}/tags	nat:privateNatGatewayTags:create	√	√
Batch Adding or Deleting Tags to or from a Private NAT Gateway	POST /v3/{project_id}/private-nat-gateways/{resource_id}/tags/action	nat:privateNatGatewayTags:create nat:privateNatGatewayTags:delete	√	√
Querying Private NAT Gateways by Tag	POST /v3/{project_id}/private-nat-gateways/resource_instances/action	nat:privateNatGatewayTags:list	√	×
Querying Tags of a Private NAT Gateway	GET /v3/{project_id}/private-nat-gateways/{resource_id}/tags	nat:privateNatGatewayTags:list	√	√
Querying Tags of All Private NAT Gateways in a Project	GET /v3/{project_id}/private-nat-gateways/tags	nat:privateNatGatewayTags:list	√	×

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Permission	API	Action	IAM Project	Enterprise Project
Deleting a Tag from a Private NAT Gateway	DELETE /v3/{project_id}/private-nat-gateways/{resource_id}/tags/{key}	nat:privateNatGatewayTags:delete	√	√

7.10 Private NAT Gateway - Transit IP Address Tag

Permission	API	Action	IAM Project	Enterprise Project
Querying Transit IP Addresses by Tag	POST /v3/{project_id}/transit-ips/resource_instances/action	nat:transitIpTags:list	√	×
Batch Adding or Deleting Tags to or from a Transit IP Address	POST /v3/{project_id}/transit-ips/{resource_id}/tags/action	nat:transitIpTags:create nat:transitIpTags:delete	√	√
Adding a Tag to a Transit IP Address	POST /v3/{project_id}/transit-ips/{resource_id}/tags	nat:transitIpTags:create	√	√
Querying Tags of a Transit IP Address	GET /v3/{project_id}/transit-ips/{resource_id}/tags	nat:transitIpTags:list	√	√
Deleting a Tag from a Transit IP Address	DELETE /v3/{project_id}/transit-ips/{resource_id}/tags/{key}	nat:transitIpTags:delete	√	√
Querying Tags of All Transit IP Addresses in a Project	GET /v3/{project_id}/transit-ips/tags	nat:transitIpTags:list	√	×

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8 Appendixes

8.1 Status Codes

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

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

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

8.2 Error Codes

If an error code starting with APIGW is returned after you call an API, rectify the fault by referring to the instructions provided in **API Gateway 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.

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

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

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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.

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Status Code	Error Codes	Error Message	Description	Solution
400	NAT.1501	Either virSubnet(network) or cidr must be specified." + "Both can not be specified at the same time.	Either virsubnet_id or cidr must be specified.	Specify virsubnet_id or cidr.
400	NAT.1502	Cidr is invalid, make sure it's format is correct.	Invalid cidr.	Enter a valid CIDR block, for example, 192.168.0.0/24.
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.

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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. // PrivateIp(FixedIp) %s is used by exist dnat rule.	The internal network information in this DNAT rule conflicts with that in existing DNAT rules.	Use a port, private IP address, backend port, and protocol that do not conflict with those of existing DNAT rules.

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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.

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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.

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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.

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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.

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

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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.

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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.

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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.

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

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

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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.

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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.

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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.

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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.

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

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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.

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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.

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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.

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

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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.

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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.

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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.

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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.

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Status Code	Error Codes	Error Message	Description	Solution
400	VPC.2055	The port_id and private_ip exist at the same time and value is not empty, but at least one value is empty.	The DNAT rule contains mutually exclusive parameters.	Configure either port_id or private_ip.
400	VPC.2056	The port_id and private_ip values are both empty, at least one value is not empty.	Some parameters of this DNAT rule are not configured.	Check whether port_id and private_ip are configured. If no, configure at least one of them.
400	VPC.2057	batch create dnat rules max limit: %(limit)s	The maximum number of DNAT rules allowed to be added in batches has been exceeded.	Reduce the number of DNAT rules for batch addition.
400	VPC.2058	Vtep_ip is Null.	VtepIp must be specified.	Contact technical support.
400	VPC.2059	Floating Ip %(fip)s is 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.

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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.

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

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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.

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Status Code	Error Codes	Error Message	Description	Solution
404	NAT.0021	Invalid input for nat_gateway_id. Reason: '********-****-****-****-************'is not a valid UUID.	Nat_gateway_id is left blank or not found.	Check whether the NAT gateway ID is available.
404	NAT.0023	Port '********-****-****-****-************' could not be found.	The port ID is not found.	Check whether the port ID is available.
404	NAT.0024	Invalid input for floating_ip_id. Reason: '********-****-****-****-************'is not a valid UUID.	Floating_ip_id is left blank, not found, or is invalid.	Check whether the floating IP address ID is correct.
404	NAT.0209	No Snat Rule exist with id %(id)s	The SNAT rule is not found.	Check whether the SNAT rule ID is available.
404	NAT.0319	No Dnat Rule exist with id %(id)s	The DNAT rule is not found.	Contact technical support.
404	VPC.0003	VPC does not exit.	The VPC is not found.	Check whether the VPC ID is valid or whether the VPC is available.

8.3 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. You can obtain the project ID in either of the following ways:

- **Obtaining the Project ID by Calling an API**
- **Obtaining the Project ID on the Console**

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Obtaining the Project ID by Calling an API

You can obtain the 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 to be obtained.

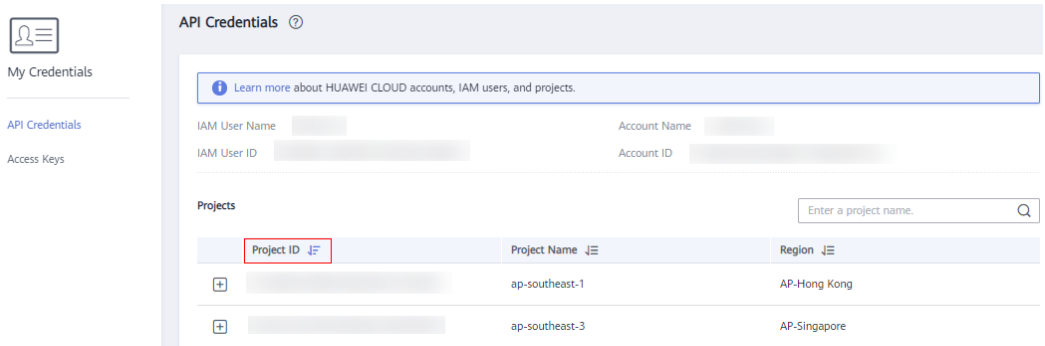
```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "project_name",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
            },
            "id": "a4a5d4098fb4474fa22cd05f897d6b99",
            "enabled": true
        }
    ],
    "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects"
    }
}
```

Obtaining the Project ID on the Console

Procedure

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

Figure 8-1 Viewing the project ID



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8.4 Resource Status Description

Table 8-1 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.

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9 Out-of-Date APIs

9.1 API v2.0

9.1.1 Public NAT Gateways

9.1.1.1 Creating a Public NAT Gateway

Function

This API is used to create a public NAT gateway.

URI

POST /v2.0/nat_gateways

Request

Table 9-1 lists the request parameter.

Table 9-1 Request parameter

Parameter	Mandatory	Type	Description
nat_gateway	Yes	Object	Specifies the public NAT gateway object. For details, see Table 9-2.

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Table 9-2 Description of the **nat_gateway** field

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the project ID.
name	Yes	String	Specifies the name of the public NAT gateway. You can enter up to 64 characters. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String	Provides supplementary information about the public NAT gateway. You can enter up to 255 characters.
spec	Yes	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
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.

Response

Table 9-3 lists response parameter.

Table 9-3 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see **Table 9-4**.

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Table 9-4 Description of the **nat_gateway** field

Parameter	Type	Description
id	String	Specifies the public NAT gateway ID.
tenant_id	String	Specifies the project ID.
name	String	Specifies the name of the public NAT gateway. You can enter up to 64 characters. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String	Provides supplementary information about the public NAT gateway. You can enter up to 255 characters.
spec	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway.
status	String	• Specifies the public NAT gateway status. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is frozen. • The value can be: – **true**: The NAT gateway is unfrozen. – **false**: The NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

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Examples

- Example request

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

- Example response

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

Status Codes

See **Status Codes**.

9.1.1.2 Querying Public NAT Gateways

Function

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

URI

GET /v2.0/nat_gateways

NOTE

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

Table 9-5 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the public NAT gateway ID.

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Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page.
tenant_id	No	String	Specifies the project ID.
name	No	String	Specifies the name of the public NAT gateway. You can enter up to 64 characters. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String	Provides supplementary information about the public NAT gateway. You can enter up to 255 characters.
spec	No	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	No	String	Specifies the router ID.
internal_network_id	No	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway.
status	No	String	• Specifies the public NAT gateway status. • For details about all its values, see **Table 8-1**.
admin_state_up	No	Boolean	• Specifies whether the NAT gateway is frozen. • The value can be: – **true**: The NAT gateway is unfrozen. – **false**: The NAT gateway is frozen.
created_at	No	String	Specifies when the public NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

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Request

None

Response

Table 9-6 lists response parameter.

Table 9-6 Response parameter

Parameter	Type	Description
nat_gateways	List (NAT gateways)	Specifies the NAT gateway objects. For details, see Table 9-7.

Table 9-7 Description of the **nat_gateway** field

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

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Parameter	Type	Description
status	String	• Specifies the public NAT gateway status. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is frozen. • The value can be: – **true**: The NAT gateway is unfrozen. – **false**: The NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

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

Status Codes

See **Status Codes**.

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9.1.1.3 Querying Details About a Public NAT Gateway

Function

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

URI

GET /v2.0/nat_gateways/{nat_gateway_id}

Table 9-8 Parameter description

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

Request

None

Response

Table 9-9 lists response parameter.

Table 9-9 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see Table 9-10.

Table 9-10 Description of the **nat_gateway** field

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

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Parameter	Type	Description
spec	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway.
status	String	• Specifies the public NAT gateway status. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is frozen. • The value can be: – **true**: The NAT gateway is unfrozen. – **false**: The NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

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

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Status Codes

See **Status Codes**.

9.1.1.4 Updating a Public NAT Gateway

Function

This API is used to update a public NAT gateway.

NOTE

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

URI

PUT /v2.0/nat_gateways/{nat_gateway_id}

Table 9-11 Parameter description

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

Request

Table 9-12 lists the request parameter.

Table 9-12 Request parameter

Parameter	Mandatory	Type	Description
nat_gateway	Yes	Object	Specifies the NAT gateway object. For details, see **Table 9-13**. Mandatory field: None. Only the **name**, **description**, and **spec** fields can be updated. At least one attribute must be specified for the NAT gateway to be updated.

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Table 9-13 Description of the **nat_gateway** field

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the public NAT gateway. You can enter up to 64 characters. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	No	String	Provides supplementary information about the public NAT gateway. You can enter up to 255 characters.
spec	No	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.

Response

Table 9-14 lists the response parameter.

Table 9-14 Response parameter

Parameter	Type	Description
nat_gateway	Object	Specifies the NAT gateway object. For details, see Table 9-15.

Table 9-15 Description of the **nat_gateway** field

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

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Parameter	Type	Description
name	String	Specifies the name of the public NAT gateway. You can enter up to 64 characters. The name can contain only digits, letters, underscores (_), and hyphens (-).
description	String	Provides supplementary information about the public NAT gateway. You can enter up to 255 characters.
spec	String	Specifies the public NAT gateway type. The value can be: • **1**: small type, which supports up to 10,000 SNAT connections. • **2**: medium type, which supports up to 50,000 SNAT connections. • **3**: large type, which supports up to 200,000 SNAT connections. • **4**: extra-large type, which supports up to 1,000,000 SNAT connections.
router_id	String	Specifies the router ID.
internal_network_id	String	Specifies the network ID of the downstream interface (the next hop of DVR) of the public NAT gateway.
status	String	• Specifies the public NAT gateway status. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies whether the NAT gateway is frozen. • The value can be: – **true**: The NAT gateway is unfrozen. – **false**: The NAT gateway is frozen.
created_at	String	Specifies when the public NAT gateway was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request

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

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```
    }
}
```

- Example response

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

Status Codes

See **Status Codes**.

9.1.1.5 Deleting a Public NAT Gateway

Function

This API is used to delete a public NAT gateway.

URI

DELETE /v2.0/nat_gateways/{nat_gateway_id}

Table 9-16 Parameter description

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

Request

None

Response

None

Examples

- Example request

```
DELETE https://{Endpoint}/v2.0/nat_gateways/a78fb3eb-1654-4710-8742-3fc49d5f04f8
```

- Example response

```
None (STATUS CODE 204)
```

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Status Codes

See **Status Codes**.

9.1.2 SNAT Rules

9.1.2.1 Creating an SNAT Rule

Function

This API is used to create an SNAT rule.

NOTE

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**.

URI

POST /v2.0/snat_rules

Request

Table 9-17 lists the request parameter.

Table 9-17 Request parameter

Parameter	Mandatory	Type	Description
snat_rule	Yes	Object	Specifies the SNAT rule object. For details, see **Table 9-18**.

Table 9-18 Description of the **snat_rule** field

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	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**.

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Parameter	Mandatory	Type	Description
cidr	No	String	Specifies a CIDR block, which can be in the format of a network segment 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 on-premises servers connected to the VPC through Direct Connect or Cloud Connect.
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, the default value **0** (VPC) is used.
floating_ip_id	Yes	String	Specifies the EIP ID. Use commas (,) to separate EIP IDs. The maximum length is 4,096 bytes. The number of EIP IDs cannot exceed 20.

Response

Table 9-19 lists response parameter.

Table 9-19 Response parameter

Parameter	Type	Description
snat_rule	Object	Specifies the SNAT rule object. For details, see Table 9-20.

Table 9-20 Description of the **snat_rule** field

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

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Parameter	Type	Description
network_id	String	Specifies the network ID used by the SNAT rule.
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of a Direct Connect connection.
source_type	Integer	**0**: VPC. Either **network_id** or **cidr** can be specified. **1**: Direct Connect/Cloud Connect. Only **cidr** can be specified. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	String	• Specifies the EIP ID. Use commas (,) to separate EIP IDs. • The maximum length is 4,096 bytes.
floating_ip_address	String	• Specifies the EIP. Use commas (,) to separate EIPs. • The maximum length is 1,024 bytes.
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 8-1**.
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.
created_at	String	Specifies when the SNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

- Example request

  a. Configure parameter **network_id** in a VPC.

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

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

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```
POST https://{Endpoint}/v2.0/snat_rules
{
  "snat_rule": {
       "nat_gateway_id": "a78fb3eb-1654-4710-8742-3fc49d5f04f8",
       "cidr": "192.168.1.10/32",
       "source_type":0,
       "floating_ip_id": "bdc10a4c-d81a-41ec-adf7-de857f7c812a"
    }
 }
```

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

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

- Example response

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

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

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

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

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

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

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Status Codes

See **Status Codes**.

9.1.2.2 Querying SNAT Rules

Function

This API is used to query SNAT rules.

URI

GET /v2.0/snat_rules

NOTE

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

Table 9-21 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the SNAT rule ID.
limit	No	Integer	Specifies the number of records on each page.
tenant_id	No	String	Specifies the project ID.
nat_gateway_id	No	String	Specifies the public NAT gateway ID.
network_id	No	String	Specifies the network ID used by the SNAT rule.
cidr	No	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of a Direct Connect connection.
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, the default value **0** (VPC) is used.
floating_ip_id	No	String	• Specifies the EIP ID. • Maximum length: 4,096 characters
floating_ip_address	No	String	• Specifies the EIP address. • Maximum length: 1,024 characters

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Parameter	Mandatory	Type	Description
status	No	String	• Specifies the status of the SNAT rule. • For details about all its values, see Table 8-1.
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.
created_at	No	String	Specifies when the SNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Request

None

Response

Table 9-22 lists response parameter.

Table 9-22 Response parameter

Parameter	Type	Description
snat_rules	List (SNAT rules)	Specifies objects of SNAT rules. For details, see Table 9-23.

Table 9-23 Description of the **snat_rule** field

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

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Parameter	Type	Description
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of a Direct Connect connection.
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, the default value **0** (VPC) is used.
floating_ip_id	String	• Specifies the EIP ID. Use commas (,) to separate EIP IDs. • The maximum length is 4,096 bytes. • The number of EIP IDs cannot exceed 20.
floating_ip_address	String	• Specifies the EIP. Use commas (,) to separate EIPs. • The maximum length is 1,024 bytes.
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 8-1**.
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.
created_at	String	Specifies when the SNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

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

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```
        "cidr": "null",
        "source_type":0,
        "tenant_id": "abc",
        "created_at": "2017-11-15 15:44:42.595173",
        "id": "79195d50-0271-41f1-bded-4c089b2502ff",
        "floating_ip_address": "5.21.11.242"
    },
    {
        "floating_ip_id": "6e496fba-abe9-4f5e-9406-2ad8c809ac8c",
        "status": "ACTIVE",
        "nat_gateway_id": "e824f1b4-4290-4ebc-8322-cfff370dbd1e",
        "admin_state_up": true,
        "network_id": "97e89905-f9c8-4ae3-9856-392b0b2fbe7f",
        "cidr": "null",
        "source_type":0,
        "tenant_id": "abc",
        "created_at": "2017-11-17 07:43:44.830845",
        "id": "4a1a10d7-0d9f-4846-8cda-24cffeffef5c",
        "floating_ip_address": "5.21.11.142"
    }
  ]
}
```


Status Codes

See **Status Codes**.

9.1.2.3 Querying Details About an SNAT Rule

Function

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

URI

GET /v2.0/snat_rules/{snat_rule_id}

Table 9-24 Parameter description

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

Request

None

Response

Table 9-25 lists response parameter.

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Table 9-25 Response parameter

Parameter	Type	Description
snat_rule	Object	Specifies the SNAT rule object. For details, see **Table 9-26**.

Table 9-26 Description of the **snat_rule** field

Parameter	Type	Description
id	String	Specifies the SNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
network_id	String	Specifies the network ID used by the SNAT rule.
cidr	String	Specifies a subset of the VPC subnet CIDR block or a CIDR block of a Direct Connect connection.
source_type	Integer	**0**: VPC. Either **network_id** or **cidr** can be specified. **1**: Direct Connect/Cloud Connect. Only **cidr** can be specified. If no value is entered, the default value **0** (VPC) is used.
floating_ip_id	String	• Specifies the EIP ID. Use commas (,) to separate EIP IDs. • The maximum length is 4,096 bytes. • The number of EIP IDs cannot exceed 20.
floating_ip_address	String	• Specifies the EIP. Use commas (,) to separate EIPs. • The maximum length is 1,024 bytes.

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Parameter	Type	Description
status	String	• Specifies the status of the SNAT rule. • For details about all its values, see **Table 8-1**.
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.
created_at	String	Specifies when the SNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

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

Status Codes

See **Status Codes**.

9.1.2.4 Deleting an SNAT Rule

Function

This API is used to delete an SNAT rule.

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URI

DELETE /v2.0/snat_rules/{snat_rule_id}

Table 9-27 Parameter description

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

Request

None

Response

None

Examples

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

Status Code

See **Status Codes**.

9.1.3 DNAT Rules

9.1.3.1 Creating a DNAT Rule

Function

This API is used to create a DNAT rule.

NOTE

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

URI

POST /v2.0/dnat_rules

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Request

Table 9-28 lists the request parameter.

Table 9-28 Request parameter

Parameter	Mandatory	Type	Description
dnat_rule	Yes	Object	Specifies the DNAT rule object. For details, see Table 9-29.

Table 9-29 Description of the **dnat_rule** field

Parameter	Mandatory	Type	Description
nat_gateway_id	Yes	String	Specifies the public NAT gateway ID.
port_id	No	String	Specifies the port ID of an ECS or BMS. Configure either **port_id** or **private_ip**.
private_ip	No	String	Specifies the private IP address of a user, for example, the IP address of a VPC connected by a Direct Connect connection. You can specify either this parameter or **port_id**.
internal_service_port	Yes	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems. The value ranges from **0** to **65535**.
floating_ip_id	Yes	String	Specifies the EIP ID.
external_service_port	Yes	Integer	Specifies the port for providing services for external systems. The value ranges from **0** to **65535**.
protocol	Yes	String	Specifies the protocol. Its value can be **tcp** (6), **udp** (17), or **any** (0).

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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 *x* is lower than *y*.
external_service_port_range	No	String	Specifies the port range used by the floating IP address for providing 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 *x* is lower than *y*.

Response

Table 9-30 lists response parameter.

Table 9-30 Response parameter

Parameter	Type	Description
dnat_rule	Object	Specifies the DNAT rule object. For details, see Table 9-31.

Table 9-31 Description of the **dnat_rule** field

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

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Parameter	Type	Description
port_id	String	Specifies the port ID of an ECS or BMS. This parameter is used in the VPC scenario. Configure either **port_id** or **private_ip**.
private_ip	String	Specifies the private IP address, for example, the IP address of a Direct Connect connection. This parameter is used in the Direct Connect scenario. 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.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. Its value can be **tcp** (6), **udp** (17), or **any** (0).
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 8-1**.
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.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

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Parameter	Type	Description
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 *x* is lower than *y*.
external_service_port_range	String	Specifies the port range used by the floating IP address for providing 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 *x* is lower than *y*.

Examples

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

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

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

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

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```
    "external_service_port": 0
  }
}
```

c. Creating a DNAT rule with specified **external_service_port_range** and **internal_service_port_range**

```
POST https://{Endpoint}/v2.0/dnat_rules
{
  "dnat_rule": {
    "floating_ip_id": "0cc38f0c-f26b-4556-b956-f5831061bb86",
    "nat_gateway_id": "dcb80bee-3e67-4282-8cc3-981431a63583",
    "private_ip": "172.16.1.197",
    "internal_service_port": 0,
    "internal_service_port_range": "55-66",
    "protocol": "udp",
    "external_service_port": 0,
    "external_service_port_range": "55-66",
    "description": "my dnat rule 01"
  }
}
```

- Example response

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

```
{
  "dnat_rule": {
    "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
    "status": "ACTIVE",
    "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
    "admin_state_up": true,
    "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
    "internal_service_port": 993,
    "protocol": "tcp",
    "tenant_id": "abc",
    "created_at": "2017-11-15 15:44:42.595173",
    "id": "79195d50-0271-41f1-bded-4c089b2502ff",
    "floating_ip_address": "5.21.11.226",
    "external_service_port": 242,
    "private_ip": ""
  }
}
```

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

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

c. Response to the request for creating a DNAT rule with specified **external_service_port_range** and **internal_service_port_range**

```
{
  "dnat_rule": {
    "floating_ip_id": "0cc38f0c-f26b-4556-b956-f5831061bb86",
    "status": "ACTIVE",
    "nat_gateway_id": "dcb80bee-3e67-4282-8cc3-981431a63583",
```

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```
        "admin_state_up": true,
        "private_ip": "172.16.1.197",
        "internal_service_port": 0,
        "protocol": "udp",
        "tenant_id": "057ef081ad80d2732fcec011fdbc01c0",
        "created_at": "2020-09-21 11:46:11.474729",
        "id": "0de17f1a-686a-4484-9d8b-973889f8654c",
        "external_service_port": 0,
        "floating_ip_address": "10.185.74.219",
        "port_id": "",
        "internal_service_port_range":"55-66",
        "external_service_port_range":"55-66"
    }
}
```


Status Codes

See **Status Codes**.

9.1.3.2 Querying DNAT Rules

Function

This API is used to query DNAT rules.

URI

GET /v2.0/dnat_rules

NOTE

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

Table 9-32 Parameter description

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
limit	Integer	Specifies the number of records on each page.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
port_id	String	Specifies the port ID of an ECS or BMS.
private_ip	String	Specifies the private IP address of a user, for example, the IP address of a VPC connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.

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Parameter	Type	Description
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. Its value can be **tcp** (6), **udp** (17), or **any** (0).
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Resource Status Description**.
admin_state_up	Boolean	• Specifies the unfrozen or frozen state. • The value can be: – **true**: indicates the unfrozen state. – **false**: indicates the frozen state.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Request

None

Response

Table 9-33 lists response parameter.

Table 9-33 Response parameter

Parameter	Type	Description
dnat_rules	Array(Object)	Specifies objects of DNAT rules. For details, see **Table 9-34**.

Table 9-34 Description of the **dnat_rule** field

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

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Parameter	Type	Description
nat_gateway_id	String	Specifies the public NAT gateway ID.
port_id	String	Specifies the port ID of an ECS or BMS.
private_ip	String	Specifies the private IP address of a user, for example, the IP address of a VPC connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. Its value can be **tcp** (6), **udp** (17), or **any** (0).
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies the unfrozen or frozen state. • The value can be: – **true**: indicates the unfrozen state. – **false**: indicates the frozen state.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

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Examples

- Example request
  ```
  GET https://{Endpoint}/v2.0/dnat_rules
  ```
- Example response
  ```
  {
     "dnat_rules": [
        {
           "floating_ip_id": "bf99c679-9f41-4dac-8513-9c9228e713e1",
           "status": "ACTIVE",
           "nat_gateway_id": "cda3a125-2406-456c-a11f-598e10578541",
           "admin_state_up": true,
           "port_id": "9a469561-daac-4c94-88f5-39366e5ea193",
           "internal_service_port": 993,
           "protocol": "tcp",
           "tenant_id": "abc",
           "created_at": "2017-11-15 15:44:42.595173",
           "id": "79195d50-0271-41f1-bded-4c089b2502ff",
           "floating_ip_address": "5.21.11.226",
           "external_service_port": 242,
           "private_ip": ""
        },
        {
           "floating_ip_id": "cf99c679-9f41-4dac-8513-9c9228e713e1",
           "status": "ACTIVE",
           "nat_gateway_id": "dda3a125-2406-456c-a11f-598e10578541",
           "admin_state_up": true,
           "port_id": "",
           "private_ip": "192.168.1.100",
           "internal_service_port": 0,
           "protocol": "any",
           "tenant_id": "abc",
           "created_at": "2017-11-16 15:44:42.595173",
           "id": "89195d50-0271-41f1-bded-4c089b2502ff",
           "floating_ip_address": "5.21.11.227",
           "external_service_port": 0
        }
     ]
  }
  ```

Status Codes

See **Status Codes**.

9.1.3.3 Querying Details About a DNAT Rule

Function

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

URI

GET /v2.0/dnat_rules/{dnat_rule_id}

Table 9-35 Parameter description

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

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Request

None

Response

Table 9-36 lists response parameter.

Table 9-36 Response parameter

Parameter	Type	Description
dnat_rule	Object	Specifies the DNAT rule object. For details, see Table 9-37.

Table 9-37 Description of the **dnat_rule** field

Parameter	Type	Description
id	String	Specifies the DNAT rule ID.
tenant_id	String	Specifies the project ID.
nat_gateway_id	String	Specifies the public NAT gateway ID.
port_id	String	Specifies the port ID of an ECS or BMS.
private_ip	String	Specifies the private IP address of a user, for example, the IP address of a VPC connected by a Direct Connect connection.
internal_service_port	Integer	Specifies the port used by ECSs or BMSs to provide services for external systems.
floating_ip_id	String	Specifies the EIP ID.
floating_ip_address	String	Specifies the EIP address.
external_service_port	Integer	Specifies the port for providing services for external systems.
protocol	String	Specifies the protocol. Its value can be **tcp** (6), **udp** (17), or **any** (0).

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Parameter	Type	Description
status	String	• Specifies the status of the DNAT rule. • For details about all its values, see **Table 8-1**.
admin_state_up	Boolean	• Specifies the unfrozen or frozen state. • The value can be: – **true**: indicates the unfrozen state. – **false**: indicates the frozen state.
created_at	String	Specifies when the DNAT rule was created (UTC time). Its value rounds to 6 decimal places for seconds. The format is yyyy-mm-dd hh:mm:ss.

Examples

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

Status Codes

See **Status Codes**.

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9.1.3.4 Deleting a DNAT Rule

Function

This API is used to delete a DNAT rule.

URI

DELETE /v2.0/dnat_rules/{dnat_rule_id}

Table 9-38 Parameter description

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

Request

None

Response

None

Examples

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

Status Code

See **Status Codes**.

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