

Elastic IP

# API Reference

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# 1 Before You Start

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## 1.1 Overview

Welcome to *Elastic IP API Reference*. The EIP service provides independent public IP addresses and bandwidth for Internet access. EIPs can be bound to or unbound from ECSs, BMSs, virtual IP addresses, load balancers, and NAT gateways. Various billing modes are provided to meet diverse service requirements.

This document describes how to use application programming interfaces (APIs) to perform operations on EIPs, such as creating, querying, deleting, and updating an EIP. For details about all supported operations, see [API Overview](#).

If you plan to access EIPs through an API, ensure that you are familiar with EIP concepts. For details, see [Service Overview](#) in the *Elastic IP User Guide*.

## 1.2 API Calling

EIP supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see [Calling APIs](#).

Additionally, EIPs offer software development kits (SDKs) for multiple programming languages. For details about how to use SDKs, log in at <https://developer.huaweicloud.com/en-us/sdk?VPC>.

## 1.3 EIP Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. Currently, EIP and VPC use same endpoints. For the endpoints of all services, see [Regions and Endpoints](#).

## 1.4 Notes and Constraints

The number of EIPs that you can assign is determined by your quota. To view or increase the quota, see [What Is a Quota?](#)

## 1.5 Concepts

- **Account**

An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. To ensure account security, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- **User**

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

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

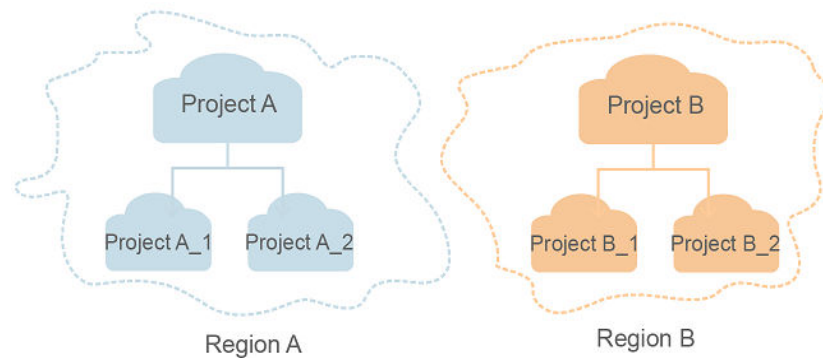
Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region.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

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

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

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

**Figure 1-1** Project isolation model



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

- Enterprise project

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

For details about enterprise projects and about how to obtain enterprise project IDs, see [Enterprise Management User Guide](#).

# 2 API Overview

APIs provided by the EIP service include native OpenStack APIs and EIP APIs.

A combination of these two types of APIs allows you to use all functions provided by the EIP service.

Enterprise project users can only use EIP APIs. For details about API permissions, see [Permissions Policies and Supported Actions](#).

## EIP APIs

Table 2-1 EIP APIs

Type	Description
<a href="#">Elastic IP</a>	APIs for assigning, querying, updating, and releasing EIPs
<a href="#">Bandwidth</a>	APIs for querying and updating bandwidth
<a href="#">Bandwidth (V2.0)</a>	<ul style="list-style-type: none"><li>• APIs for assigning and deleting shared bandwidth</li><li>• APIs for adding an EIP to or removing an EIP from a shared bandwidth</li></ul>
<a href="#">Quota</a>	API for querying quota values
<a href="#">EIP Tag Management</a>	APIs for adding tags to EIPs as well as querying and deleting EIP tags Currently, this type of API is available only in regions <b>CN North-Beijing4</b> , <b>CN East-Shanghai1</b> , <b>CN East-Shanghai2</b> , and <b>CN Southwest-Guiyang1</b> .

## Native OpenStack APIs

Table 2-2 Native OpenStack APIs

Type	Description
<b>API Version Information</b>	APIs for querying all available API versions and displaying the results in pages.
<b>Floating IP Address</b>	APIs for assigning, querying, updating, and releasing floating IP addresses

# 3 Calling APIs

## 3.1 Making an API Request

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

### Request URI

A request URI is in the following format:

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

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

**Table 3-1** URI parameter description

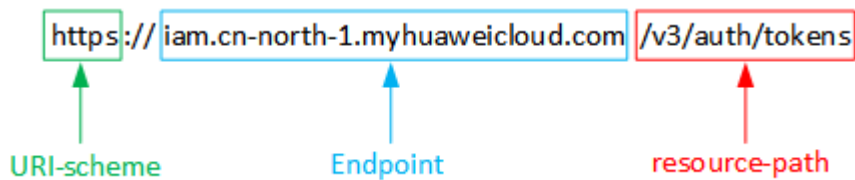
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from <a href="#">Regions and Endpoints</a> . For example, the endpoint of IAM in the <b>CN North-Beijing1</b> region is <b>iam.cn-north-1.myhuaweicloud.com</b> .
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the <b>resource-path</b> of the API used to obtain a user token is <b>/v3/auth/tokens</b> .

Parameter	Description
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of " <i>Parameter name=Parameter value</i> ". For example, <b>?limit=10</b> indicates that a maximum of 10 data records will be displayed.

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

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

**Figure 3-1** Example URI



**NOTE**

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

## Request Methods

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

**Table 3-2** HTTP methods

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

Method	Description
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

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

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

## Request Header

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

Common request header fields are as follows.

**Table 3-3** Common request header fields

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

Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in <a href="#">Obtaining a Project ID</a> .	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 a user token. It is a response to the API for <a href="#">obtaining a user token</a> (only this API does not require authentication). After the request is processed, the value of <b>X-Subject-Token</b> in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvcNAQcCo...ggg1BBIINPXsidG9rZ

 **NOTE**

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

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

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

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

## (Optional) Request Body

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

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

In the case of the API used to [obtain a user token](#), the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*,

*domainname*, *\*\*\*\*\** (login password), and *xxxxxxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from [Regions and Endpoints](#).

 **NOTE**

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

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

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

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

## 3.2 Authentication

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

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

### Token-based Authentication

 **NOTE**

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

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

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

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

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

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

## AK/SK-based Authentication

### NOTE

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

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

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

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

### NOTE

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

## 3.3 Response

### Status Code

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

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

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

### Response Header

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

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

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token
→ MIIVXQVJKoZIhvcNAQcCoIIYJCCEoCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6ijlwMTktMDItMTNUMC
fj3KIs6YgKnpVNRbW2eZ5eb78SZOkqjACgkklqO1wi4JlGzrpd18LGXK5tdfq4lqHCYb8P4NaY0NyejcAgzJVeFYtLWT1GSO0zxKZmlQHQj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRC9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jqglFkNPQuFSOUB+uSsttVwRtNfsC+qTp22Rkd5MCqFGQ8LcuUx3a+9CMBnOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUUpvGw-oPNFYxJECKnoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;
```

### (Optional) Response Body

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

The following is part of the response body for the API used to [obtain a user token](#).

```
{
  "token": {
```

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

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

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

In the response body, **error\_code** is an error code, and **error\_msg** provides information about the error.

# 4 APIs

---

## 4.1 Elastic IP

### 4.1.1 Assigning an EIP

#### Function

This API is used to assign an EIP. Both IPv4 and IPv6 addresses are supported.

The EIP service provides independent public IP addresses and bandwidth for Internet access. EIPs can be bound to or unbound from ECSs, BMSs, virtual IP addresses, load balancers, and NAT gateways. Various billing modes are provided to meet diversified service requirements.

#### URI

POST /v1/{project\_id}/publicips

[Table 4-1](#) describes the parameters.

**Table 4-1** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

#### Request Message

- Request parameter

**Table 4-2** Request parameter

Name	Mandatory	Type	Description
publicip	Yes	Object	Specifies the EIP object. For details, see <a href="#">Table 4-3</a> .
bandwidth	Yes	Object	Specifies the bandwidth object. For details, see <a href="#">Table 4-4</a> .
enterprise_project_id	No	String	<ul style="list-style-type: none"><li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li><li>When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li><li>If this parameter is not specified, the default value is 0.</li></ul> <b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a> .

**Table 4-3** Description of the **publicip** field

Name	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> </ul> </li> </ul>

Name	Mandator y	Type	Description
			<ul style="list-style-type: none"> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> <li>• Constraints:               <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- <b>publicip_id</b> is an IPv4 port. If <b>type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul> </li> </ul>
ip_version	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the EIP version.</li> <li>• The value can be <b>4</b> and <b>6</b>, indicating IPv4 address and IPv6 address, respectively.</li> <li>• Constraints:               <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- If this parameter is left blank or is an empty string, IPv4 address is created by default.</li> </ul> </li> </ul>

Name	Mandator y	Type	Description
ip_address	No	String	<ul style="list-style-type: none"><li>• Specifies the EIP to be assigned. The system automatically assigns an EIP if you do not specify it.</li><li>• The value must be a valid IPv4 address in the available IP address range.</li></ul>

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

Name	Mandator y	Type	Description
name	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li><li>• This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li></ul>

Name	Mandatory	Type	Description
size	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the bandwidth size.</li> <li>• The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)</li> <li>• This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li> <li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> <li>- The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li> <li>- The minimum increment is 50 Mbit/s if the allowed bandwidth</li> </ul> </li> </ul>

Name	Mandator y	Type	Description
			<p>ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</p> <ul style="list-style-type: none"><li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li></ul>
id	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth ID. You can specify an existing shared bandwidth when assigning an EIP.</li><li>• The value can be the ID of the shared bandwidth whose type is set to <b>WHOLE</b>.</li></ul>
share_type	Yes	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth type.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>- <b>PER</b>: Dedicated bandwidth</li><li>- <b>WHOLE</b>: Shared bandwidth</li></ul></li><li>• If this parameter is set to <b>WHOLE</b>, the bandwidth ID must be specified.</li></ul>

Name	Mandator y	Type	Description
charge_mode	No	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is billed by traffic or by bandwidth size.</li> <li>The value can be <b>traffic</b> or <b>bandwidth</b>. If this parameter is left blank or is null character string, default value <b>bandwidth</b> is used. For IPv6 addresses, the default parameter value is <b>bandwidth</b> outside China and is <b>traffic</b> in China.</li> </ul>

- Example request 1 (IPv4 EIP with dedicated bandwidth)

POST [https://{Endpoint}/v1/{project\\_id}/publicips](https://{Endpoint}/v1/{project_id}/publicips)

```
{
  "publicip": {
    "type": "5_bgp",
    "ip_version": 4
  },
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "share_type": "PER"
  },
  "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
}
```

- Example request 2 (IPv6 EIP with shared bandwidth)

```
{
  "publicip": {
    "type": "5_bgp",
    "ip_version": 6
  },
  "bandwidth": {
    "name": "bandwidth123",
    "size": 5,
    "share_type": "WHOLE",
    "id": "ebfa375c-3f93-465e-81a3-bd66e578ee9d"
  },
  "enterprise_project_id": "0"
}
```

## Response Message

- Response parameter

**Table 4-5** Response parameter

Name	Type	Description
publicip	Object	Specifies the EIP object. For details, see <a href="#">Table 4-6</a> .

**Table 4-6** Description of the **publicip** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> <li>• Specifies the EIP status.</li> <li>• Possible values are as follows: <ul style="list-style-type: none"> <li>- <b>FREEZED</b> (Frozen)</li> <li>- <b>BIND_ERROR</b> (Binding failed)</li> <li>- <b>BINDING</b> (Binding)</li> <li>- <b>PENDING_DELETE</b> (Releasing)</li> <li>- <b>PENDING_CREATE</b> (Assigning)</li> <li>- <b>PENDING_UPDATE</b> (Updating)</li> <li>- <b>DOWN</b> (Unbound)</li> <li>- <b>ACTIVE</b> (Bound)</li> <li>- <b>ELB</b> (Bound to a load balancer)</li> <li>- <b>ERROR</b> (Exceptions)</li> </ul> </li> </ul>

Name	Type	Description
type	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- <b>publicip_id</b> is an IPv4 port. If <b>type</b> is</li> </ul> </li> </ul>

Name	Type	Description
		not specified, the default value is <b>5_bgp</b> .
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
public_ipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	Specifies the IP address version. The value can be <b>4</b> or <b>6</b> . <ul style="list-style-type: none"> <li>• <b>4</b>: IPv4 address</li> <li>• <b>6</b>: IPv6 address</li> </ul>
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
enterprise_project_id	String	<ul style="list-style-type: none"> <li>• Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "<b>0</b>" or in UUID format with hyphens (-).</li> <li>• When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li> </ul>

- Example response 1 (IPv4 EIP with dedicated bandwidth)

```
{
  "publicip": {
    "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "161.xx.xx.7",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "ip_version": 4,
    "create_time": "2015-07-16 04:10:52",
    "bandwidth_size": 0,
  }
}
```

```
    "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
  }
}
```

- Example response 2 (IPv6 EIP with shared bandwidth)

```
{
  "publicip": {
    "id": "3ff2bf48-b82d-4bf3-88e7-9e55ecdcd34",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "10.154.79.48",
    "public_ipv6_address": "cdcd:910a:2222:5498::a9a:4f30",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-01-17 11:54:48",
    "bandwidth_size": 0,
    "enterprise_project_id": "0",
    "ip_version": 6
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.1.2 Querying an EIP

### Function

This API is used to query a specific EIP.

### URI

GET /v1/{project\_id}/publicips/{publicip\_id}

[Table 4-7](#) describes the parameters.

**Table 4-7** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

### Request Message

- Request parameter  
None

- Example request  
Get `https://{Endpoint}/v1/{project_id}/publicips/{publicip_id}`

## Response Message

- Response parameter

**Table 4-8** Response parameter

Name	Type	Description
publicip	Object	Specifies the EIP object. For details, see <a href="#">Table 4-9</a> .

**Table 4-9** Description of the **publicip** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> <li>• Specifies the EIP status.</li> <li>• Possible values are as follows: <ul style="list-style-type: none"> <li>- <b>FREEZED</b> (Frozen)</li> <li>- <b>BIND_ERROR</b> (Binding failed)</li> <li>- <b>BINDING</b> (Binding)</li> <li>- <b>PENDING_DELETE</b> (Releasing)</li> <li>- <b>PENDING_CREATE</b> (Assigning)</li> <li>- <b>PENDING_UPDATE</b> (Updating)</li> <li>- <b>DOWN</b> (Unbound)</li> <li>- <b>ACTIVE</b> (Bound)</li> <li>- <b>ELB</b> (Bound to a load balancer)</li> <li>- <b>ERROR</b> (Exceptions)</li> </ul> </li> </ul>

Name	Type	Description
profile	Object	Specifies the additional parameters, including the order ID and product ID. For details, see <a href="#">Table 4-10</a> . If <b>profile</b> is specified, the EIP is in yearly/monthly billing mode.

Name	Type	Description
type	String	<ul style="list-style-type: none"><li>• Specifies the EIP type.</li><li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>).<ul style="list-style-type: none"><li>– CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li><li>– CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li><li>– CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>– CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li><li>– CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>– AP-Hong Kong: <b>5_bgp</b></li><li>– AP-Bangkok: <b>5_bgp</b></li><li>– AP-Singapore: <b>5_bgp</b></li><li>– AF-Johannesburg: <b>5_bgp</b></li><li>– CN Southwest-Guiyang1: <b>5_sbgp</b></li><li>– CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li><li>– LA-Santiago: <b>5_bgp</b></li><li>– LA-Sao Paulo1: <b>5_bgp</b></li><li>– LA-Mexico City1: <b>5_bgp</b></li><li>– LA-Buenos Aires1: <b>5_bgp</b></li><li>– LA-Lima1: <b>5_bgp</b></li><li>– LA-Santiago2: <b>5_bgp</b></li></ul></li><li>• Constraints:<ul style="list-style-type: none"><li>– The configured value must be</li></ul></li></ul>

Name	Type	Description
		<p>supported by the system.</p> <ul style="list-style-type: none"> <li>- <b>publicip_id</b> is an IPv4 port. If <b>type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul>
public_ipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
ip_version	Integer	<p>Specifies the IP address version. The value can be <b>4</b> or <b>6</b>.</p> <ul style="list-style-type: none"> <li>• <b>4</b>: IPv4 address</li> <li>• <b>6</b>: IPv6 address</li> </ul>
private_ip_address	String	<ul style="list-style-type: none"> <li>• Specifies the private IP address bound to the EIP.</li> <li>• This parameter is returned only when a private IP address is bound to the EIP.</li> </ul>
port_id	String	<ul style="list-style-type: none"> <li>• Specifies the port ID.</li> <li>• This parameter is returned only when a port is associated with the EIP.</li> </ul>
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.
bandwidth_id	String	Specifies the ID of the EIP bandwidth.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).

Name	Type	Description
bandwidth_share_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP bandwidth type.</li> <li>The value can be <b>PER</b> or <b>WHOLE</b>. <ul style="list-style-type: none"> <li><b>PER</b>: Dedicated bandwidth</li> <li><b>WHOLE</b>: Shared bandwidth</li> </ul> </li> <li>IPv6 addresses do not support bandwidth whose type is <b>WHOLE</b>.</li> </ul>
bandwidth_name	String	Specifies the bandwidth name.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string <b>"0"</b> or in UUID format with hyphens (-).</li> <li>When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li> </ul>

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

Name	Type	Description
order_id	String	Specifies the order ID.
product_id	String	Specifies the product ID.
region_id	String	Specifies the region ID.
user_id	String	Specifies the user ID.

- Example response

```

{
  "publicip": {
    "id": "2ec9b78d-9368-46f3-8f29-d1a95622a568",
    "status": "DOWN",
    "profile": {
      "user_id": "35f2b308f5d64441a6fa7999fbcd4321",
      "product_id": "00301-48027-0--0",
      "region_id": "xxx",
      "order_id": "xxxxxxxx"
    },
    "type": "5_bgp",
  }
}

```

```
"public_ip_address": "161.xx.xx.12",
"tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
"private_ip_address": "192.168.10.5",
"create_time": "2015-07-16 04:32:50",
"bandwidth_id": "49c8825b-bed9-46ff-9416-704b96d876a2",
"bandwidth_share_type": "PER",
"bandwidth_size": 10, //The EIP bandwidth size is 10 Mbit/s.
"bandwidth_name": "bandwidth-test",
"enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439",
"ip_version": 4
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.1.3 Querying EIPs

### Function

This API is used to query EIPs.

### URI

GET /v1/{project\_id}/publicips

[Table 4-11](#) describes the parameters.

**Table 4-11** Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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.

Name	Mandatory	Type	Description
limit	No	Integer	<ul style="list-style-type: none"> <li>Specifies the number of records returned on each page.</li> <li>The value ranges from 0 to intmax.</li> </ul>
ip_version	No	Integer	<p>Specifies the IP address version.</p> <ul style="list-style-type: none"> <li><b>4:</b> IPv4 address</li> <li><b>6:</b> IPv6 address</li> </ul>
enterprise_project_id	No	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. This field can be used to filter the EIPs of an enterprise project.</li> <li>The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). Value "0" indicates the default enterprise project. To obtain the EIPs bound to all enterprise projects of the user, set <b>all_granted_eps</b>.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>

## Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v1/{project\_id}/publicips?limit={limit}&marker={marker}

## Response Message

- Response parameter

**Table 4-12** Response parameter

Name	Type	Description
publicips	Array of <b>publicips</b> objects	Specifies the EIP object. For details, see <a href="#">Table 4-13</a> .

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

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> <li>• Specifies the EIP status.</li> <li>• Possible values are as follows: <ul style="list-style-type: none"> <li>- <b>FREEZED</b> (Frozen)</li> <li>- <b>BIND_ERROR</b> (Binding failed)</li> <li>- <b>BINDING</b> (Binding)</li> <li>- <b>PENDING_DELETE</b> (Releasing)</li> <li>- <b>PENDING_CREATE</b> (Assigning)</li> <li>- <b>PENDING_UPDATE</b> (Updating)</li> <li>- <b>DOWN</b> (Unbound)</li> <li>- <b>ACTIVE</b> (Bound)</li> <li>- <b>ELB</b> (Bound to a load balancer)</li> <li>- <b>ERROR</b> (Exceptions)</li> </ul> </li> </ul>
profile	Object	<p>Specifies the additional parameters, including the order ID and product ID. For details, see <a href="#">Table 4-14</a>.</p> <p>If <b>profile</b> is specified, the EIP is in yearly/monthly billing mode.</p>

Name	Type	Description
type	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The configured value must be</li> </ul> </li> </ul>

Name	Type	Description
		<p>supported by the system.</p> <ul style="list-style-type: none"> <li>- <b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul>
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
public_ipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<p>Specifies the IP address version. The value can be <b>4</b> or <b>6</b>.</p> <ul style="list-style-type: none"> <li>• <b>4</b>: IPv4 address</li> <li>• <b>6</b>: IPv6 address</li> </ul>
private_ip_address	String	<ul style="list-style-type: none"> <li>• Specifies the private IP address bound to the EIP.</li> <li>• This parameter is returned only when a private IP address is bound to the EIP.</li> </ul>
port_id	String	<ul style="list-style-type: none"> <li>• Specifies the port ID.</li> <li>• This parameter is returned only when a port is associated with the EIP.</li> </ul>
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.
bandwidth_id	String	Specifies the ID of the EIP bandwidth.

Name	Type	Description
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
bandwidth_share_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP bandwidth type.</li> <li>The value can be <b>PER</b> or <b>WHOLE</b>. <ul style="list-style-type: none"> <li><b>PER</b>: Dedicated bandwidth</li> <li><b>WHOLE</b>: Shared bandwidth</li> </ul> </li> <li>IPv6 addresses do not support bandwidth whose type is <b>WHOLE</b>.</li> </ul>
bandwidth_name	String	Specifies the bandwidth name.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li> <li>When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li> </ul>

**Table 4-14** Description of the **profile** field

Name	Type	Description
order_id	String	Specifies the order ID.
product_id	String	Specifies the product ID.
region_id	String	Specifies the region ID.
user_id	String	Specifies the user ID.

- Example response

```
{
  "publicips": [
    {
      "id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
      "status": "DOWN",
      "profile": {
        "user_id": "35f2b308f5d64441a6fa7999fbcd4321",
        "product_id": "00301-48027-0--0",

```

```
    "region_id": "xxx",
    "order_id": "xxxxxxxx"
  },
  "type": "5_bgp",
  "public_ip_address": "161.xx.xx.9",
  "private_ip_address": "192.168.10.5",
  "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
  "create_time": "2015-07-16 04:22:32",
  "bandwidth_id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
  "bandwidth_share_type": "PER",
  "bandwidth_size": 5,
  "bandwidth_name": "bandwidth-test",
  "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439",
  "ip_version": 4
},
{
  "id": "80d5b82e-43b9-4f82-809a-37bec5793bd4",
  "status": "DOWN",

  "user_id": null,
  "type": "5_bgp",
  "public_ip_address": "161.xx.xx.10",
  "private_ip_address": "192.168.10.6",
  "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
  "create_time": "2015-07-16 04:23:03",
  "bandwidth_id": "a79fd11a-047b-4f5b-8f12-99c178cc780a",
  "bandwidth_share_type": "PER",
  "bandwidth_size": 5,
  "bandwidth_name": "bandwidth-test1",
  "enterprise_project_id": "0",
  "ip_version": 4
}
]
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.1.4 Updating an EIP

### Function

This API is used to update an EIP, for example, binding an EIP to a NIC, unbinding an EIP from a NIC, or converting the IP address version.

### URI

PUT /v1/{project\_id}/publicips/{publicip\_id}

[Table 4-15](#) describes the parameters.

**Table 4-15** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

## Request Message

- Request parameter

**Table 4-16** Request parameter

Name	Mandatory	Type	Description
publicip	Yes	Object	Specifies the EIP object. For details, see <a href="#">Table 4-17</a> .

**Table 4-17** Description of the **publicip** field

Name	Mandatory	Type	Description
port_id	No	String	<ul style="list-style-type: none"><li>Specifies the port ID.</li><li>The value must be an existing port ID. If this parameter is not included or the parameter value is left blank, the EIP is unbound. If the specified port ID does not exist or has already been bound with an EIP, an error message will be displayed. Either parameter <b>port_id</b> or <b>ip_version</b> can be updated.</li></ul>

Name	Mandatory	Type	Description
ip_version	No	Integer	<ul style="list-style-type: none"> <li>Specifies the IP address version.</li> <li>The value can be <b>4</b> or <b>6</b>.                             <ul style="list-style-type: none"> <li><b>4</b>: IPv4 address</li> <li><b>6</b>: IPv6 address</li> </ul> </li> <li>Constraints:                             <ul style="list-style-type: none"> <li>The IP version must be supported by the system.</li> <li>The <b>port_id</b> and <b>ip_version</b> fields cannot be set at the same time.</li> </ul> </li> </ul>

- Example request 1 (Binding an EIP to a NIC)  
PUT https://{Endpoint}/v1/{project\_id}/publicips/{publicip\_id}

```
{
  "publicip": {
    "port_id": "f588ccfa-8750-4d7c-bf5d-2ede24414706"
  }
}
```

- Example response 2 (Upgrading to IPv6 EIP)  
PUT https://{Endpoint}/v1/{project\_id}/publicips/{publicip\_id}

```
{
  "publicip": {
    "ip_version": 6
  }
}
```

## Response Message

- Response parameter

**Table 4-18** Response parameter

Name	Type	Description
publicip	<i>Object</i>	Specifies the EIP object. For details, see <a href="#">Table 4-19</a> .

**Table 4-19** Description of the **publicips** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> <li>• Specifies the EIP status.</li> <li>• Possible values are as follows:               <ul style="list-style-type: none"> <li>- <b>FREEZED</b> (Frozen)</li> <li>- <b>BIND_ERROR</b> (Binding failed)</li> <li>- <b>BINDING</b> (Binding)</li> <li>- <b>PENDING_DELETE</b> (Releasing)</li> <li>- <b>PENDING_CREATE</b> (Assigning)</li> <li>- <b>PENDING_UPDATE</b> (Updating)</li> <li>- <b>DOWN</b> (Unbound)</li> <li>- <b>ACTIVE</b> (Bound)</li> <li>- <b>ELB</b> (Bound to a load balancer)</li> <li>- <b>ERROR</b> (Exceptions)</li> </ul> </li> </ul>
profile	Object	<p>Specifies the additional parameters, including the order ID and product ID. For details, see <a href="#">Table 4-20</a>.</p> <p>If <b>profile</b> is specified, the EIP is in yearly/monthly billing mode.</p>

Name	Type	Description
type	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The configured value must be</li> </ul> </li> </ul>

Name	Type	Description
		<p>supported by the system.</p> <ul style="list-style-type: none"> <li>- <b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul>
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
public_ipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<p>Specifies the IP address version. The value can be <b>4</b> or <b>6</b>.</p> <ul style="list-style-type: none"> <li>• <b>4</b>: IPv4 address</li> <li>• <b>6</b>: IPv6 address</li> </ul>
private_ip_address	String	<ul style="list-style-type: none"> <li>• Specifies the private IP address bound to the EIP.</li> <li>• This parameter is returned only when a port is associated with the EIP.</li> </ul>
port_id	String	<ul style="list-style-type: none"> <li>• Specifies the port ID.</li> <li>• This parameter is returned only when a port is associated with the EIP.</li> </ul>
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.
bandwidth_id	String	Specifies the ID of the EIP bandwidth.

Name	Type	Description
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
bandwidth_share_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP bandwidth type.</li> <li>The value can be <b>PER</b> or <b>WHOLE</b>. <ul style="list-style-type: none"> <li><b>PER</b>: Dedicated bandwidth</li> <li><b>WHOLE</b>: Shared bandwidth</li> </ul> </li> <li>IPv6 addresses do not support bandwidth whose type is <b>WHOLE</b>.</li> </ul>
bandwidth_name	String	Specifies the bandwidth name.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li> <li>When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li> </ul>

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

Name	Type	Description
order_id	String	Specifies the order ID.
product_id	String	Specifies the product ID.
region_id	String	Specifies the region ID.
user_id	String	Specifies the user ID.

- Example response 1 (Binding an EIP to a NIC)

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "ACTIVE",
    "type": "5_bgp",
    "port_id": "a135e9b8-1630-40d2-a6c5-eb534a61efbe",
    "public_ip_address": "10.xx.xx.162",
    "private_ip_address": "192.168.1.131",
```

```
"tenant_id": "26ae5181a416420998eb2093aaed84d9",
"create_time": "2019-03-27 01:33:18",
"bandwidth_size": 7,
"ip_version": 4
}
```

- Example response 2 (Upgrading to IPv6 EIP)

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "DOWN",
    "type": "5_bgp",
    "public_ip_address": "10.xx.xx.162",
    "public_ipv6_address": "cdcd:xx:xx:xx::a9a:4aa2",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 01:33:18",
    "bandwidth_size": 7,
    "ip_version": 6
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.1.5 Releasing an EIP

### Function

This API is used to release an EIP.

### URI

DELETE /v1/{project\_id}/publicips/{publicip\_id}

[Table 4-21](#) describes the parameters.

**Table 4-21** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

## Request Message

- Request parameter  
None
- Example request  
DELETE https://{Endpoint}/v1/{project\_id}/publicips

## Response Message

- Response parameter  
None
  - Example response  
None
- Or

```
{  
  "code": "xxx",  
  "message": "xxxxx"  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.1.6 Assigning a Yearly/Monthly EIP

### Function

This API is used to assign a yearly/monthly EIP.

After assigning a yearly/monthly EIP by calling API successfully,

- If you need to pay for the order, see **Paying for the Order of Yearly/Monthly-Billed Resources**. If you want to use coupons to pay, set **isAutoPay** in the request to **false**.
- If you need to view the resource provisioning details in your order, see **Querying Resource Provisioning Details in an Order**.
- If you need to unsubscribe from a yearly/monthly resource, see **Unsubscribing from Year/Monthly Resources**.

### URI

POST /v2.0/{project\_id}/publicips

[Table 4-22](#) describes the parameters.

**Table 4-22** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request parameter

- Request parameter

**Table 4-23** Request parameter

Name	Mandatory	Type	Description
publicip	Yes	Object	Specifies the EIP object. For details, see <a href="#">Table 4-24</a> .
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-25</a> .
extendParameter	No	Object	Specifies the extended parameter, which is used to apply for resources in yearly/monthly billing mode. For details, see section <a href="#">Table 4-26</a> .

**Table 4-24** Description of the **publicip** field

Name	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> </ul> </li> </ul>

Name	Mandatory	Type	Description
			<ul style="list-style-type: none"> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> <li>• Constraints:               <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- <b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul> </li> </ul>
ip_version	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the EIP version.</li> <li>• The value can be <b>4</b> and <b>6</b>, indicating IPv4 address and IPv6 address, respectively.</li> <li>• Constraints:               <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- If this parameter is left blank or is an empty string, IPv4 address is created by default.</li> </ul> </li> </ul>

**Table 4-25** Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li><li>• Constraints:<ul style="list-style-type: none"><li>- This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>.</li><li>- This parameter will be ignored if the bandwidth has a specified ID.</li></ul></li></ul>

Name	Mandatory	Type	Description
size	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the bandwidth size.</li> <li>• The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li> <li>• This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored if the bandwidth has a specified ID.</li> <li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> <li>- The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li> <li>- The minimum increment is 50 Mbit/s if the allowed bandwidth</li> </ul> </li> </ul>

Name	Mandatory	Type	Description
			<p>ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</p> <ul style="list-style-type: none"> <li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li> </ul>
id	No	String	<ul style="list-style-type: none"> <li>• Use the existing shared bandwidth to assign an IP address.</li> <li>• Specifies the ID of the shared bandwidth.</li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The value must be the ID of bandwidth whose <b>share_type</b> is <b>WHOLE</b>.</li> <li>- This parameter does not need to be specified in prepayment mode. This parameter will be ignored if its value is left blank.</li> </ul> </li> </ul>

Name	Mandatory	Type	Description
share_type	Yes	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth type.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>PER</b>: Dedicated bandwidth</li><li>– <b>WHOLE</b>: Shared bandwidth</li></ul></li><li>• When the existing bandwidth is used to assign an IP address, the value of this parameter depends on the bandwidth type.</li><li>• The parameter value can only be <b>PER</b> in prepayment mode.</li></ul>
charge_mode	No	String	<ul style="list-style-type: none"><li>• Specifies whether the bandwidth is billed by traffic or by bandwidth size.</li><li>• The value can be <b>bandwidth</b> or <b>traffic</b>. The default value is <b>bandwidth</b>. If the value is <b>traffic</b>, the bandwidth is billed by traffic.</li><li>• A yearly/monthly EIP can only be billed by bandwidth.</li></ul>

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

Name	Mandatory	Type	Description
charge_mode	No	String	<ul style="list-style-type: none"><li>• Specifies the billing mode (postpayment: pay-per-use; prepayment: yearly/monthly).</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>prePaid</b>: prepayment. The billing mode is yearly/monthly.</li><li>– <b>postPaid</b>: postpayment. The billing mode is pay per use.</li><li>– The default value is <b>postPaid</b>.</li></ul></li><li>• In the postpayment mode, parameters in <b>extendParam</b> will be ignored.</li></ul>
period_type	No	String	<ul style="list-style-type: none"><li>• Specifies the subscription unit (yearly and monthly).</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>month</b>: indicates that resources are subscribed by month.</li><li>– <b>year</b>: indicates that resources are subscribed by year.</li></ul></li><li>• Constraints: If you assign an EIP that uses an existing yearly/monthly shared bandwidth (that is, you specify the shared bandwidth ID to assign an EIP), this parameter is optional. This parameter is mandatory when the billing mode is prepayment and the EIP does not use a shared bandwidth.</li></ul> <p>When an EIP is created using the shared bandwidth, the expiration time of the bandwidth is the same as that of the EIP.</p>

Name	Mandatory	Type	Description
period_num	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the subscription period.</li> <li>• The value range varies depending on the operation strategy. <ul style="list-style-type: none"> <li>– When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>.</li> <li>– When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</li> </ul> </li> <li>• The constraints for <b>period_num</b> are the same as those for <b>period_type</b>.</li> </ul>
is_auto_renew	No	boolean	<ul style="list-style-type: none"> <li>• Specifies whether to renew the subscription.</li> <li>• Possible values are as follows: The value <b>false</b> indicates that the automatic subscription renewal is enabled. The value <b>true</b> indicates that the automatic subscription renewal is disabled. The default value is <b>false</b>.</li> <li>• Constraints: After the subscription is expired, the system automatically renews the subscription for one month by default (the automatic renewal period may change). For details, contact the customer service personnel.</li> </ul>

Name	Mandatory	Type	Description
is_auto_pay	No	boolean	<ul style="list-style-type: none"> <li>Specifies whether the fee is automatically deducted from the customer's account balance after an order is submitted. The non-automatic payment mode is used by default.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>true</b>: indicates automatic payment. The system will automatically deduct fees from the account balance after an order is submitted.</li> <li><b>false</b>: indicates non-automatic payment. This is the default value. Customers need to pay manually.</li> </ul> </li> <li>Constraints: If you use the automatic payment mode, only your account balance can be used. If you want to use a voucher, do not use the automatic payment mode, and select the voucher for the payment in the Billing Center.</li> </ul>

- Example request 1

Assign an EIP that uses a new yearly/monthly dedicated bandwidth. The bandwidth size is 1 Mbit/s and the required duration is 1 month. The system does not automatically renew the subscription and deduct the fee after an order is submitted.

POST [https://{{Endpoint}}/v2.0/{{project\\_id}}/publicips](https://{{Endpoint}}/v2.0/{{project_id}}/publicips)

```
{
  "publicip": {
    "type": "5_bgp"
  },
  "bandwidth": {
    "name": "bw_666",
    "size": 1,
    "share_type": "PER",
    "charge_mode": "bandwidth"
  },
  "extendParam": {
    "charge_mode": "prePaid",
    "period_type": "month",
    "period_num": 1,
    "is_auto_renew": "false",
    "is_auto_pay": "true"
  }
}
```

- Example request 2  
Assign an EIP that uses a pay-per-use bandwidth. Leave the parameter **extendParam** blank.

POST `https://{Endpoint}/v2.0/{project_id}/publicips`

```
{
  "publicip": {
    "type": "5_bgp"
  },
  "bandwidth": {
    "name": "bw_666",
    "size": 1,
    "share_type": "PER",
    "charge_mode": "bandwidth"
  }
}
```

## Response Message

- Response parameter

Name	Type	Description
publicip	Object	Specifies the EIP object. (This parameter is returned in the pay-per-use scenario.)
order_id	String	Specifies the order ID. (This parameter is returned parameter in the yearly/monthly scenario.) <b>NOTE</b> <ul style="list-style-type: none"> <li>• If you need to pay for the order, see <b>Paying for the Order of Yearly/Monthly-Billed Resources</b>.</li> <li>• If you need to view the resource provisioning details in your order, see <b>Querying Resource Provisioning Details in an Order</b>.</li> <li>• If you need to unsubscribe from a yearly/monthly resource, see <b>Unsubscribing from Year/Monthly Resources</b>.</li> </ul>
publicip_id	String	Specifies the EIP ID. (This parameter is returned parameter in the yearly/monthly scenario.)

**Table 4-27** Description of the **publicip** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.

Name	Type	Description
status	String	<ul style="list-style-type: none"><li>• Specifies the EIP status.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>- <b>FREEZED</b> (Frozen)</li><li>- <b>BIND_ERROR</b> (Binding failed)</li><li>- <b>BINDING</b> (Binding)</li><li>- <b>PENDING_DELETE</b> (Releasing)</li><li>- <b>PENDING_CREATE</b> (Assigning)</li><li>- <b>PENDING_UPDATE</b> (Updating)</li><li>- <b>DOWN</b> (Unbound)</li><li>- <b>ACTIVE</b> (Bound)</li><li>- <b>ELB</b> (Bound to a load balancer)</li><li>- <b>ERROR</b> (Exceptions)</li></ul></li></ul>

Name	Type	Description
type	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- <b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li> </ul> </li> </ul>
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
public_ipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.

Name	Type	Description
ip_version	Integer	Specifies the IP address version. The value can be 4 or 6. <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul>
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.
bandwidth_size	Integer	Specifies the bandwidth size.
enterprise_project_id	String	<ul style="list-style-type: none"><li>• Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li><li>• When assigning an EIP, you need to associate an enterprise project ID with the EIP.</li></ul>

- Example response 1

Yearly/monthly

```
{
  "order_id": "CS1802081410IMDRN",
  "publicip_id": "4eaf3b63-48ca-4410-ab85-bdfddf4b35fd"
}
```

- Example response 2

Pay-per-use

```
{
  "publicip": {
    "id": "4eaf3b63-48ca-4410-ab85-bdfddf4b35fd",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "10.xx.xx.238",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 13:11:58",
    "bandwidth_size": 0,
    "enterprise_project_id": "0",
    "ip_version": 4
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.2 Bandwidth

### 4.2.1 Querying a Bandwidth

#### Function

This API is used to query details about a bandwidth.

#### URI

GET /v1/{project\_id}/bandwidths/{bandwidth\_id}

[Table 4-28](#) describes the parameters.

**Table 4-28** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

#### Request Message

- Request parameter  
None
- Example request  
Get `https://{Endpoint}/v1/{project_id}/bandwidths/{bandwidth_id}`

#### Response Message

- Response parameter

**Table 4-29** Response parameter

Name	Type	Description
bandwidth	Object	Specifies the bandwidth object.

**Table 4-30** Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li></ul>
size	Integer	<ul style="list-style-type: none"><li>• Specifies the bandwidth size.</li><li>• The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)</li></ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"><li>• Specifies whether the bandwidth is shared or dedicated.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>PER</b>: Dedicated bandwidth</li><li>– <b>WHOLE</b>: Shared bandwidth</li></ul></li></ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"><li>• Specifies information about the EIP that uses the bandwidth. For details, see <a href="#">Table 4-31</a>.</li><li>• The bandwidth, whose type is <b>WHOLE</b>, can be used by up to 20 EIPs. The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li></ul>
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth type.</li><li>• The value can be <b>bgp</b>, <b>sbgp</b>, <b>telcom</b>, or <b>share</b>.<ul style="list-style-type: none"><li>– <b>share</b>: Shared bandwidth</li><li>– <b>bgp</b>: Dynamic BGP</li><li>– <b>telcom</b>: China Unicom</li><li>– <b>sbgp</b>: Static BGP</li></ul></li></ul>

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on traffic, bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth), <b>traffic</b> (billed by traffic), or <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you use the enhanced 95th percentile bandwidth, you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>
billing_info	String	Specifies the bill information. If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li> <li>When creating a bandwidth, associate the enterprise project ID with the bandwidth.</li> </ul>
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>
created_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
updated_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>

Name	Type	Description
enable_bandwidth_rules	boolean	<ul style="list-style-type: none"><li>• Specifies whether to enable QoS.</li><li>• The value can be <b>true</b> or <b>false</b>.</li></ul>
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of <b>bandwidth_rules</b> objects	Specifies the bandwidth rules.

**Table 4-31 publicip\_info** object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_addresses	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"><li>• Specifies the IP address version.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>- <b>4</b>: IPv4 address</li><li>- <b>6</b>: IPv6 address</li></ul></li></ul>

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP type.</li> <li>Possible values are <b>5_telcom</b> (<i>China Telecom</i>), <b>5_union</b> (<i>China Unicom</i>), <b>5_bgp</b> (<i>dynamic BGP</i>), and <b>5_sbgp</b> (<i>static BGP</i>). <ul style="list-style-type: none"> <li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>AP-Hong Kong: <b>5_bgp</b></li> <li>AP-Bangkok: <b>5_bgp</b></li> <li>AP-Singapore: <b>5_bgp</b></li> <li>AF-Johannesburg: <b>5_bgp</b></li> <li>CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>LA-Santiago: <b>5_bgp</b></li> <li>LA-Sao Paulo1: <b>5_bgp</b></li> <li>LA-Mexico City1: <b>5_bgp</b></li> <li>LA-Buenos Aires1: <b>5_bgp</b></li> <li>LA-Lima1: <b>5_bgp</b></li> <li>LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>The configured value must be supported by the system.</li> </ul>

**Table 4-32 bandwidth\_rules** object

Name	Type	Description
id	string	Specifies the bandwidth rule ID.
name	string	Specifies the name of the bandwidth rule.
admin_state_up	boolean	Specifies the configuration status. The value <b>False</b> indicates that the configuration does not take effect.

Name	Type	Description
egress_size	integer	<ul style="list-style-type: none"><li>Specifies the maximum outbound bandwidth in Mbit/s.</li><li>The value range ranges from <b>0</b> to <math>n</math>, where <math>n</math> indicates the shared bandwidth size. If the value is set to <b>0</b>, the maximum bandwidth, that is the shared bandwidth size will be used.</li></ul>
egress_guarented_size	integer	<ul style="list-style-type: none"><li>Specifies the guaranteed outbound bandwidth in Mbit/s.</li><li>The value ranges from <b>0</b> to <math>x</math>, where <math>x</math> indicates the remaining bandwidth.</li></ul>
publicip_info	array	<ul style="list-style-type: none"><li>Specifies the EIP associated with the bandwidth.</li><li>The bandwidth, whose type is set to <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is set to <b>PER</b>, can be used by only one EIP.</li></ul>

- Example response

```
{
  "bandwidth": {
    "id": "a97a827c-3636-4eda-82ce-7aabeeacd2af",
    "name": "bandwidth-fd7fE3",
    "size": 6,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "ff156c26-bcc9-4541-a75c-42baf8b9748f",
        "publicip_address": "114.xx.xx.244",
        "ip_version": 4,
        "publicip_type": "5_sbgp"
      }
    ],
    "tenant_id": "b3292dde618e40408e30cd87455a0652",
    "bandwidth_type": "sbgp",
    "charge_mode": "bandwidth",
    "enterprise_project_id": "0",
    "status": "NORMAL",
    "created_at": "2020-04-21T07:58:02Z",
    "updated_at": "2020-04-21T07:58:02Z"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.2.2 Querying Bandwidths

### Function

This API is used to query bandwidths using search criteria.

### URI

GET /v1/{project\_id}/bandwidths

[Table 4-33](#) describes the parameters.

**Table 4-33** Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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.
limit	No	Integer	<ul style="list-style-type: none"><li>• Specifies the number of records returned on each page.</li><li>• The value ranges from 0 to intmax.</li></ul>
share_type	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth type.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>PER</b>: Dedicated bandwidth</li><li>– <b>WHOLE</b>: Shared bandwidth</li></ul></li><li>• If this parameter is not set, the list of all bandwidths will be returned by default.</li></ul>

Name	Mandatory	Type	Description
enterprise_project_id	No	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. This field can be used to filter out the VPCs associated with a specified enterprise project.</li> <li>The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). Value "0" indicates the default enterprise project. To obtain the VPCs bound to all enterprise projects of the user, set <b>all_granted_eps</b>.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>

## Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v1/{project\_id}/bandwidths?limit={limit}&marker={marker}

## Response Message

- Response parameter

**Table 4-34** Response parameter

Name	Type	Description
bandwidths	Array of <a href="#">bandwidths</a> objects	Specifies the bandwidth objects. For details, see <a href="#">Table 4-35</a> .

**Table 4-35** Description of the **bandwidths** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth name.</li> <li>The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>

Name	Type	Description
size	Integer	<ul style="list-style-type: none"> <li>Specifies the bandwidth size in Mbit/s.</li> <li>The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li> </ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is shared or dedicated.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>PER</b>: Dedicated bandwidth</li> <li><b>WHOLE</b>: Shared bandwidth</li> </ul> </li> </ul> <p>If this parameter is not set, the list of all bandwidths will be returned by default.</p>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"> <li>Specifies the bandwidth information. For details, see <a href="#">Table 4-36</a>.</li> <li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs (currently up to 20 EIPs). The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li> </ul>
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth type.</li> <li>The value can be <b>bgp</b>, <b>sbgp</b>, <b>telcom</b>, or <b>share</b>. <ul style="list-style-type: none"> <li><b>share</b>: Shared bandwidth</li> <li><b>bgp</b>: Dynamic BGP</li> <li><b>telcom</b>: China Unicom</li> <li><b>sbgp</b>: Static BGP</li> </ul> </li> </ul>

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on traffic, bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth), <b>traffic</b> (billed by traffic), or <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you use the enhanced 95th percentile bandwidth, you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>
billing_info	String	<p>Specifies the bill information.</p> <p>If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.</p>
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). To obtain the bandwidth bound to all enterprise projects of the user, set <b>all_granted_eps</b>.</li> <li>When creating a bandwidth, associate the enterprise project ID with the bandwidth.</li> </ul>
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>
created_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>

Name	Type	Description
updated_at	String	<ul style="list-style-type: none"><li>Specifies the time (UTC) when the bandwidth is created.</li><li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li></ul>
enable_bandwidth_rules	boolean	<ul style="list-style-type: none"><li>Specifies whether to enable QoS.</li><li>The value can be <b>true</b> or <b>false</b>.</li></ul>
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of <a href="#">bandwidth_rules</a> objects	Specifies the bandwidth rules.

**Table 4-36 publicip\_info** object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_addresses	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"><li>Specifies the IP address version.</li><li>Possible values are as follows:<ul style="list-style-type: none"><li>4: IPv4 address</li><li>6: IPv6 address</li></ul></li></ul>

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none"><li>Specifies the EIP type.</li><li>Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP).<ul style="list-style-type: none"><li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li><li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>AP-Hong Kong: <b>5_bgp</b></li><li>AP-Bangkok: <b>5_bgp</b></li><li>AP-Singapore: <b>5_bgp</b></li><li>AF-Johannesburg: <b>5_bgp</b></li><li>CN Southwest-Guiyang1: <b>5_sbgp</b></li><li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li><li>LA-Santiago: <b>5_bgp</b></li><li>LA-Sao Paulo1: <b>5_bgp</b></li><li>LA-Mexico City1: <b>5_bgp</b></li><li>LA-Buenos Aires1: <b>5_bgp</b></li><li>LA-Lima1: <b>5_bgp</b></li><li>LA-Santiago2: <b>5_bgp</b></li></ul></li><li>The configured value must be supported by the system.</li></ul>

**Table 4-37 bandwidth\_rules** object

Name	Type	Description
id	string	Specifies the bandwidth rule ID.
name	string	Specifies the name of the bandwidth rule.
admin_state_up	boolean	Specifies the configuration status. The value <b>False</b> indicates that the configuration does not take effect.

Name	Type	Description
egress_size	integer	<ul style="list-style-type: none"><li>Specifies the maximum outbound bandwidth in Mbit/s.</li><li>The value range ranges from <b>0</b> to <i>n</i>, where <i>n</i> indicates the shared bandwidth size. If the value is set to <b>0</b>, the maximum bandwidth, that is the shared bandwidth size will be used.</li></ul>
egress_guarented_size	integer	<ul style="list-style-type: none"><li>Specifies the guaranteed outbound bandwidth in Mbit/s.</li><li>The value ranges from <b>0</b> to <i>x</i>, where <i>x</i> indicates the remaining bandwidth.</li></ul>
publicip_info	array	<ul style="list-style-type: none"><li>Specifies the EIP associated with the bandwidth.</li><li>The bandwidth, whose type is set to <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is set to <b>PER</b>, can be used by only one EIP.</li></ul>

- Example response

```
{
  "bandwidths": [
    {
      "id": "a97a827c-3636-4eda-82ce-7aaeeaacd2af",
      "name": "bandwidth-fd7fE3",
      "size": 6,
      "share_type": "PER",
      "publicip_info": [
        {
          "publicip_id": "ff156c26-bcc9-4541-a75c-42baf8b9748f",
          "publicip_address": "114.xx.xx.244",
          "ip_version": 4,
          "publicip_type": "5_sbgp"
        }
      ]
    },
    {
      "tenant_id": "b3292dde618e40408e30cd87455a0652",
      "bandwidth_type": "sbgp",
      "charge_mode": "bandwidth",
      "enterprise_project_id": "0",
      "status": "NORMAL",
      "created_at": "2020-04-21T07:58:02Z",
      "updated_at": "2020-04-21T07:58:02Z"
    }
  ],
  {
    "id": "f1ea5294-7c6f-44aa-8b9f-c80d057b903b",
    "name": "bandwidth-67FG53",
    "size": 5,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "1bf8e81d-5c44-4502-8e7e-d81b5fbad02b",
        "publicip_address": "114.xx.xx.133",
        "ip_version": 4,
        "publicip_type": "5_sbgp"
      }
    ]
  }
}
```

```
],
  "tenant_id": "b3292dde618e40408e30cd87455a0652",
  "bandwidth_type": "sbgp",
  "charge_mode": "traffic",
  "enterprise_project_id": "0",
  "status": "NORMAL",
  "created_at": "2020-04-21T11:51:59Z",
  "updated_at": "2020-04-21T11:51:59Z"
}
]
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.2.3 Updating a Bandwidth

### Function

This API is used to update information about a bandwidth.

### URI

PUT /v1/{project\_id}/bandwidths/{bandwidth\_id}

[Table 4-38](#) describes the parameters.

**Table 4-38** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

### Request Message

- Request parameter

**Table 4-39** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-40</a> .

**Table 4-40** Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.). If the value is left blank, the name of the bandwidth is not changed.</li><li>• Either parameter <b>name</b> or <b>size</b> must be specified.</li></ul>

Name	Mandatory	Type	Description
size	No	Integer	<ul style="list-style-type: none"> <li>• Specifies the bandwidth size in Mbit/s.</li> <li>• The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.) If the parameter is not included, the bandwidth size is not changed.</li> <li>• Either parameter <b>name</b> or <b>size</b> must be specified.</li> <li>• If a decimal fraction (for example <b>10.2</b>) or a character string (for example <b>"10"</b>) is specified, the specified value will be automatically converted to an integer.</li> <li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> <li>- The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li> <li>- The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</li> <li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li> </ul> </li> </ul>

Name	Mandatory	Type	Description
charge_mode	No	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on traffic, bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth), <b>traffic</b> (billed by traffic), or <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you use the enhanced 95th percentile bandwidth, you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>

- Example request

PUT https://{Endpoint}/v1/{project\_id}/bandwidths/{bandwidth\_id}

```
{
  "bandwidth":
    {"name": "bandwidth123",
     "size": 10,
     "charge_mode": "traffic"
    }
}
```

## Response Message

- Response parameter

**Table 4-41** Response parameter

Name	Type	Description
bandwidth	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-42</a> .

**Table 4-42** Description of the **bandwidths** field

Name	Type	Description
name	String	<ul style="list-style-type: none"><li>Specifies the bandwidth name.</li><li>The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li></ul>
size	Integer	<ul style="list-style-type: none"><li>Specifies the bandwidth size in Mbit/s.</li><li>The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li></ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"><li>Specifies whether the bandwidth is shared or dedicated.</li><li>Possible values are as follows:<ul style="list-style-type: none"><li><b>PER</b>: Dedicated bandwidth</li><li><b>WHOLE</b>: Shared bandwidth</li></ul></li></ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"><li>Specifies the bandwidth information. For details, see <a href="#">Table 4-43</a>.</li><li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs (currently up to 20 EIPs). The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li></ul>
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"><li>Specifies the bandwidth type.</li><li>The value can be <b>bgp</b>, <b>sbgp</b>, <b>telcom</b>, or <b>share</b>.<ul style="list-style-type: none"><li><b>share</b>: Shared bandwidth</li><li><b>bgp</b>: Dynamic BGP</li><li><b>telcom</b>: China Unicom</li><li><b>sbgp</b>: Static BGP</li></ul></li></ul>

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is billed by traffic or by bandwidth size.</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth) and <b>traffic</b> (billed by traffic). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> </ul>
billing_info	String	Specifies the bill information. If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). To obtain the bandwidth bound to all enterprise projects of the user, set <b>all_granted_eps</b>.</li> <li>When creating a bandwidth, associate the enterprise project ID with the bandwidth.</li> </ul>
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>
created_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
updated_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
enable_bandwidth_rules	boolean	<ul style="list-style-type: none"> <li>Specifies whether to enable QoS.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of <b>bandwidth_rules</b> objects	Specifies the bandwidth rules.

**Table 4-43 publicip\_info** objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_addresses	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"><li>• Specifies the IP address version.</li><li>• Possible values are as follows:<ul style="list-style-type: none"><li>– <b>4</b>: IPv4 address</li><li>– <b>6</b>: IPv6 address</li></ul></li></ul>

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP type.</li> <li>Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP). <ul style="list-style-type: none"> <li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>AP-Hong Kong: <b>5_bgp</b></li> <li>AP-Bangkok: <b>5_bgp</b></li> <li>AP-Singapore: <b>5_bgp</b></li> <li>AF-Johannesburg: <b>5_bgp</b></li> <li>CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>LA-Santiago: <b>5_bgp</b></li> <li>LA-Sao Paulo1: <b>5_bgp</b></li> <li>LA-Mexico City1: <b>5_bgp</b></li> <li>LA-Buenos Aires1: <b>5_bgp</b></li> <li>LA-Lima1: <b>5_bgp</b></li> <li>LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>The configured value must be supported by the system.</li> </ul>

**Table 4-44 bandwidth\_rules** object

Name	Type	Description
id	string	Specifies the bandwidth rule ID.
name	string	Specifies the name of the bandwidth rule.
admin_state_up	boolean	Specifies the configuration status. The value <b>False</b> indicates that the configuration does not take effect.

Name	Type	Description
egress_size	integer	<ul style="list-style-type: none"><li>Specifies the maximum outbound bandwidth in Mbit/s.</li><li>The value range ranges from <b>0</b> to <i>n</i>, where <i>n</i> indicates the shared bandwidth size. If the value is set to <b>0</b>, the maximum bandwidth, that is the shared bandwidth size will be used.</li></ul>
egress_guarented_size	integer	<ul style="list-style-type: none"><li>Specifies the guaranteed outbound bandwidth in Mbit/s.</li><li>The value ranges from <b>0</b> to <i>x</i>, where <i>x</i> indicates the remaining bandwidth.</li></ul>
publicip_info	array	<ul style="list-style-type: none"><li>Specifies the EIP associated with the bandwidth.</li><li>The bandwidth, whose type is set to <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is set to <b>PER</b>, can be used by only one EIP.</li></ul>

- Example response

```
{
  "bandwidth": {
    "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
        "publicip_address": "161.xx.xx.9",
        "publicip_type": "5_bgp",
        "ip_version": 4
      }
    ],
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "bandwidth_type": "bgp",
    "charge_mode": "bandwidth",
    "billing_info": "CS1712121146TSQOJ:0616e2a5dc9f4985ba52ea8c0c7e273c:southchina:35f2b308f5d64441a6fa7999fbc4321",
    "status": "NORMAL"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3 Bandwidth (V2.0)

### 4.3.1 Assigning a Shared Bandwidth

#### Function

This API is used to assign a shared bandwidth.

#### URI

POST /v2.0/{project\_id}/bandwidths

[Table 4-45](#) describes the parameters.

**Table 4-45** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

#### Request Message

- Request parameter

**Table 4-46** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-47</a> .

**Table 4-47** Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	Yes	String	Specifies the bandwidth name. The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).

Name	Mandatory	Type	Description
size	Yes	Integer	<ul style="list-style-type: none"><li>• Specifies the bandwidth size. The shared bandwidth has a minimum limit, which may vary depending on sites. The default minimum value is 5 Mbit/s.</li><li>• The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li><li>• If a decimal fraction (for example <b>10.2</b>) or a character string (for example <b>"10"</b>) is specified, the specified value will be automatically converted to an integer.</li><li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>– The minimum increment is 1 Mbit/s if the allowed</li></ul></li></ul>

Name	Mandatory	Type	Description
			<p>bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</p> <ul style="list-style-type: none"> <li>- The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</li> <li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li> </ul>
enterprise_project_id	No	String	<ul style="list-style-type: none"> <li>• Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-).</li> <li>• When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>

Name	Mandatory	Type	Description
charge_mode	No	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth) and <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you choose to be billed by 95th percentile bandwidth (enhanced), you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>

- Example request

POST [https://{Endpoint}/v2.0/{project\\_id}/bandwidths](https://{Endpoint}/v2.0/{project_id}/bandwidths)

```
{
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
  }
}
```

## Response Message

- Response parameter

**Table 4-48** Response parameter

Name	Type	Description
bandwidth	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-49</a> .

**Table 4-49** Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li></ul>
size	Integer	<ul style="list-style-type: none"><li>• Specifies the bandwidth size.</li><li>• The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li></ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"><li>• Specifies whether the bandwidth is shared or dedicated.</li><li>• The value can be <b>PER</b> or <b>WHOLE</b>.<ul style="list-style-type: none"><li>– <b>WHOLE</b>: Shared bandwidth</li><li>– <b>PER</b>: Dedicated bandwidth</li></ul></li></ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"><li>• Specifies information about the EIP that uses the bandwidth. For details, see <a href="#">Table 4-50</a>.</li><li>• The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li></ul>
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth type. The default value for the shared bandwidth is <b>share</b>.</li> <li>The value can be <b>share</b>, <b>bgp</b>, <b>telcom</b>, or <b>sbgp</b>. <ul style="list-style-type: none"> <li><b>share</b>: Shared bandwidth</li> <li><b>bgp</b>: Dynamic BGP</li> <li><b>telcom</b>: China Unicom</li> <li><b>sbgp</b>: Static BGP</li> </ul> </li> </ul>
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth) and <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you choose to be billed by 95th percentile bandwidth (enhanced), you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>
billing_info	String	<p>Specifies the bill information.</p> <p>If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.</p>
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>

Name	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>
created_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
updated_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
enable_bandwidth_rules	boolean	<ul style="list-style-type: none"> <li>Specifies whether to enable QoS.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of <a href="#">bandwidth_rules</a> objects	Specifies the bandwidth rules.

**Table 4-50 publicip\_info** object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_addresses	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"> <li>Specifies the IP address version.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>4</b>: IPv4 address</li> <li><b>6</b>: IPv6 address</li> </ul> </li> </ul>

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP type.</li> <li>Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP). <ul style="list-style-type: none"> <li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>AP-Hong Kong: <b>5_bgp</b></li> <li>AP-Bangkok: <b>5_bgp</b></li> <li>AP-Singapore: <b>5_bgp</b></li> <li>AF-Johannesburg: <b>5_bgp</b></li> <li>CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>LA-Santiago: <b>5_bgp</b></li> <li>LA-Sao Paulo1: <b>5_bgp</b></li> <li>LA-Mexico City1: <b>5_bgp</b></li> <li>LA-Buenos Aires1: <b>5_bgp</b></li> <li>LA-Lima1: <b>5_bgp</b></li> <li>LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>The configured value must be supported by the system.</li> </ul>

**Table 4-51 bandwidth\_rules** object

Name	Type	Description
id	string	Specifies the bandwidth rule ID.
name	string	Specifies the name of the bandwidth rule.
admin_state_up	boolean	Specifies the configuration status. The value <b>False</b> indicates that the configuration does not take effect.

Name	Type	Description
egress_size	integer	<ul style="list-style-type: none"><li>Specifies the maximum outbound bandwidth in Mbit/s.</li><li>The value range ranges from <b>0</b> to <math>n</math>, where <math>n</math> indicates the shared bandwidth size. If the value is set to <b>0</b>, the maximum bandwidth, that is the shared bandwidth size will be used.</li></ul>
egress_guarented_size	integer	<ul style="list-style-type: none"><li>Specifies the guaranteed outbound bandwidth in Mbit/s.</li><li>The value ranges from <b>0</b> to <math>x</math>, where <math>x</math> indicates the remaining bandwidth.</li></ul>
publicip_info	array	<ul style="list-style-type: none"><li>Specifies the EIP associated with the bandwidth.</li><li>The bandwidth, whose type is set to <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is set to <b>PER</b>, can be used by only one EIP.</li></ul>

- Example response

```
{
  "bandwidth": {
    "id": "1bffc5f2-ff19-45a6-96d2-dfdca49cc387",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "WHOLE",
    "publicip_info": [],
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "bandwidth_type": "share",
    "charge_mode": "bandwidth",
    "enterprise_project_id": "0",
    "status": "NORMAL",
    "created_at": "2020-04-21T07:58:02Z",
    "updated_at": "2020-04-21T07:58:02Z"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3.2 Assigning Multiple Shared Bandwidths

### Function

This API is used to assign multiple shared bandwidths at a time.

## URI

POST /v2.0/{project\_id}/batch-bandwidths

[Table 4-52](#) describes the parameters.

**Table 4-52** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request Message

- Request parameter

**Table 4-53** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-54</a> .

**Table 4-54** Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth name.</li> <li>The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>

Name	Mandatory	Type	Description
size	Yes	Integer	<ul style="list-style-type: none"> <li>• Specifies the bandwidth size. The shared bandwidth has a minimum limit, which may vary depending on sites. The default minimum value is 5 Mbit/s.</li> <li>• The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li> <li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> <li>- The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li> <li>- The minimum increment is 50 Mbit/s if the allowed bandwidth</li> </ul> </li> </ul>

Name	Mandator y	Type	Description
			<p>ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</p> <ul style="list-style-type: none"> <li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li> </ul>
count	Yes	Integer	<ul style="list-style-type: none"> <li>• Specifies the number of shared bandwidths that can be assigned at a time.</li> <li>• The value is a positive integer.</li> <li>• If a decimal fraction (for example 2.2) or a character string (for example "2") is specified, the specified value will be automatically converted to an integer.</li> </ul>

- Example request

POST https://{Endpoint}/v2.0/{project\_id}/batch-bandwidths

```
{
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "count": 2
  }
}
```

## Response Message

- Response parameter

**Table 4-55** Response parameter

Name	Type	Description
bandwidths	List. The elements in the list are dictionaries.	Specifies the bandwidth objects. For details, see <a href="#">Table 4-56</a> .

**Table 4-56** Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"><li>Specifies the bandwidth name.</li><li>The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li></ul>
size	Integer	<ul style="list-style-type: none"><li>Specifies the bandwidth size.</li><li>The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li></ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"><li>Specifies whether the bandwidth is shared or dedicated.</li><li>The value can be <b>PER</b> or <b>WHOLE</b>.<ul style="list-style-type: none"><li><b>WHOLE</b>: Shared bandwidth</li><li><b>PER</b>: Dedicated bandwidth</li></ul></li></ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"><li>Specifies information about the EIP that uses the bandwidth. For details, see <a href="#">Table 4-57</a>.</li><li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li></ul>
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth type. The default value for the shared bandwidth is <b>share</b>.</li> <li>The value can be <b>share</b>, <b>bgp</b>, <b>telcom</b>, or <b>sbgp</b>. <ul style="list-style-type: none"> <li><b>share</b>: Shared bandwidth</li> <li><b>bgp</b>: Dynamic BGP</li> <li><b>telcom</b>: China Unicom</li> <li><b>sbgp</b>: Static BGP</li> </ul> </li> </ul>
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is billed by traffic or by bandwidth size.</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth) and <b>traffic</b> (billed by traffic). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>The shared bandwidth can be billed only by bandwidth.</li> </ul>
billing_info	String	Specifies the bill information. If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>

**Table 4-57 publicip\_info** object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_addresses	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.

Name	Type	Description
ip_version	Integer	<ul style="list-style-type: none"> <li>Specifies the IP address version.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>4</b>: IPv4 address</li> <li><b>6</b>: IPv6 address</li> </ul> </li> </ul>
publicip_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP type.</li> <li>Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP). <ul style="list-style-type: none"> <li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>AP-Hong Kong: <b>5_bgp</b></li> <li>AP-Bangkok: <b>5_bgp</b></li> <li>AP-Singapore: <b>5_bgp</b></li> <li>AF-Johannesburg: <b>5_bgp</b></li> <li>CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>LA-Santiago: <b>5_bgp</b></li> <li>LA-Sao Paulo1: <b>5_bgp</b></li> <li>LA-Mexico City1: <b>5_bgp</b></li> <li>LA-Buenos Aires1: <b>5_bgp</b></li> <li>LA-Lima1: <b>5_bgp</b></li> <li>LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>The configured value must be supported by the system.</li> </ul>

- Example response

```
{
  "bandwidths": [
    {
      "id": "7e5a1a30-6e88-4ce5-b5fa-1d6c6864e084",
      "name": "bandwidth123",
      "size": 10,
      "share_type": "WHOLE",
      "publicip_info": [],
    }
  ]
}
```

```
"tenant_id": "26ae5181a416420998eb2093aaed84d9",
"bandwidth_type": "share",
"charge_mode": "bandwidth",
"billing_info": "",
"status": "NORMAL"
},
{
  "id": "ed2da50a-3ce9-4d86-9f17-e8f3801299a5",
  "name": "bandwidth123",
  "size": 10,
  "share_type": "WHOLE",
  "publicip_info": [],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "share",
  "charge_mode": "bandwidth",
  "billing_info": "",
  "status": "NORMAL"
}
]
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3.3 Deleting a Shared Bandwidth

### Function

This API is used to delete a shared bandwidth.

### URI

DELETE /v2.0/{project\_id}/bandwidths/{bandwidth\_id}

[Table 4-58](#) describes the parameters.

**Table 4-58** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth. Currently, only the shared bandwidth can be deleted.

## Request Message

- Request parameter  
None
- Example request  
DELETE https://{Endpoint}/v2.0/{project\_id}/bandwidths/{bandwidth\_id}

## Response Message

- Response parameter  
None
- Example response  
Or  

```
{  
  "code": "xxx",  
  "message": "xxxxx"  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3.4 Adding an EIP to a Shared Bandwidth

### Function

This API is used to add an EIP to a shared bandwidth.

### URI

POST /v2.0/{project\_id}/bandwidths/{bandwidth\_id}/insert

[Table 4-59](#) describes the parameters.

**Table 4-59** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

## Request Message

- Request parameter

**Table 4-60** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-61</a> .

**Table 4-61** Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"><li>• Specifies information about the EIP to be added to the shared bandwidth. For details, see <a href="#">Table 4-62</a>.</li><li>• The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The number of EIPs varies depending on the tenant quota. By default, a shared bandwidth can be used by up to 20 EIPs.</li></ul>

**Table 4-62** **publicip\_info** object

Name	Mandatory	Type	Description
publicip_id	Yes	String	Specifies the ID of the EIP that uses the bandwidth.

Name	Mandatory	Type	Description
publicip_type	No	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP). <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b>, <b>5_sbgp</b>, and <b>5_dualStack</b></li> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• Constraints: <ul style="list-style-type: none"> <li>- The configured value must be supported by the system.</li> <li>- <b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li> <li>- If the <b>publicip_id</b> value is the EIP ID, this parameter will be ignored. If <b>publicip_id</b> is the ID of the IPv6 port, this parameter must be set to <b>5_dualStack</b>. This only applies</li> </ul> </li> </ul>

Name	Mandator y	Type	Description
			to the <b>CN North-Beijing4</b> region.

- Example request

POST [https://{Endpoint}/v2.0/{project\\_id}/bandwidths/{bandwidth\\_id}/insert](https://{Endpoint}/v2.0/{project_id}/bandwidths/{bandwidth_id}/insert)

```
{
  "bandwidth": {
    "publicip_info": [
      {
        "publicip_id": "1d184b2c-4ec9-49b5-a3f9-27600a76ba3f",
        "publicip_type": "5_bgp"
      }
    ]
  }
}
```

## Response Message

- Response parameter

**Table 4-63** Response parameter

Name	Type	Description
bandwidth	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-64</a> .

**Table 4-64** Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> <li>• Specifies the bandwidth name.</li> <li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>
size	Integer	<ul style="list-style-type: none"> <li>• Specifies the bandwidth size.</li> <li>• The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li> </ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Name	Type	Description
share_type	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is shared or dedicated.</li> <li>The value can be <b>PER</b> or <b>WHOLE</b>. <ul style="list-style-type: none"> <li><b>WHOLE</b>: Shared bandwidth</li> <li><b>PER</b>: Dedicated bandwidth</li> </ul> </li> </ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"> <li>Specifies information about the EIP that uses the bandwidth. For details, see <a href="#">Table 4-65</a>.</li> <li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li> </ul>
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth type. The default value for the shared bandwidth is <b>share</b>.</li> <li>The value can be <b>share</b>, <b>bgp</b>, <b>telcom</b>, or <b>sbgp</b>. <ul style="list-style-type: none"> <li><b>share</b>: Shared bandwidth</li> <li><b>bgp</b>: Dynamic BGP</li> <li><b>telcom</b>: China Unicom</li> <li><b>sbgp</b>: Static BGP</li> </ul> </li> </ul>
charge_mode	String	<ul style="list-style-type: none"> <li>Specifies whether the billing is based on traffic, bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>Possible values can be <b>bandwidth</b> (billed by bandwidth), <b>traffic</b> (billed by traffic), or <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you use the enhanced 95th percentile bandwidth, you need to specify the guaranteed bandwidth percentage. The default value is 20%.</li> </ul>

Name	Type	Description
billing_info	String	Specifies the bill information. If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>

**Table 4-65 publicip\_info** objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.
publicipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"> <li>Specifies the IP address version.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>4</b>: IPv4 address</li> <li><b>6</b>: IPv6 address</li> </ul> </li> </ul>

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none"> <li>Specifies the EIP type.</li> <li>Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP). <ul style="list-style-type: none"> <li>CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>AP-Hong Kong: <b>5_bgp</b></li> <li>AP-Bangkok: <b>5_bgp</b></li> <li>AP-Singapore: <b>5_bgp</b></li> <li>AF-Johannesburg: <b>5_bgp</b></li> <li>CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>LA-Santiago: <b>5_bgp</b></li> <li>LA-Sao Paulo1: <b>5_bgp</b></li> <li>LA-Mexico City1: <b>5_bgp</b></li> <li>LA-Buenos Aires1: <b>5_bgp</b></li> <li>LA-Lima1: <b>5_bgp</b></li> <li>LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>The configured value must be supported by the system.</li> </ul>

- Example response

```

{
  "bandwidth": {
    "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "WHOLE",
    "publicip_info": [
      {
        "publicip_id": "d91b0028-6f6b-4478-808a-297b75b6812a",
        "publicip_address": "::ffff:192.168.89.9",
        "publicip_type": "5_dualStack",
        "ip_version": 6
      },
      {
        "publicip_id": "1d184b2c-4ec9-49b5-a3f9-27600a76ba3f",
        "publicip_address": "99.xx.xx.82",

```

```
        "publicip_type": "5_bgp",
        "ip_version": 4
      }
    ],
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "charge_mode": "traffic",
    "bandwidth_type": "share",
    "billing_info": "CS1712121146TSQOJ:0616e2a5dc9f4985ba52ea8c0c7e273c:southchina:
35f2b308f5d64441a6fa7999fbc4321"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3.5 Removing an EIP from a Shared Bandwidth

### Function

This API is used to remove an EIP from a shared bandwidth.

### URI

POST /v2.0/{project\_id}/bandwidths/{bandwidth\_id}/remove

[Table 4-66](#) describes the parameters.

**Table 4-66** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

### Request Message

- Request parameter

**Table 4-67** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-68</a> .

**Table 4-68** Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"> <li>Specifies information about the EIP to be removed from the bandwidth. For details, see <a href="#">Table 4-69</a>.</li> <li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The number of EIPs varies depending on the tenant quota. By default, a shared bandwidth can be used by up to 20 EIPs.</li> </ul>
charge_mode	Yes	String	<p>After an EIP is removed from a shared bandwidth, a dedicated bandwidth will be allocated to the EIP, and you will be billed for the dedicated bandwidth.</p> <p>Specifies whether the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth is billed by traffic or by bandwidth.</p> <p>The value can be <b>bandwidth</b> or <b>traffic</b>.</p>
size	Yes	Integer	<p>After an EIP is removed from a shared bandwidth, a dedicated bandwidth will be allocated to the EIP, and you will be billed for the dedicated bandwidth.</p> <p>Specifies the size (Mbit/s) of the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth.</p> <p>The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</p>

**Table 4-69 publicip\_info object**

Name	Mandatory	Type	Description
publicip_id	Yes	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_type	No	String	If the <b>publicip_id</b> value is the EIP ID, this parameter will be ignored. If <b>publicip_id</b> is the ID of the IPv6 port, this parameter must be set to <b>5_dualStack</b> . This only applies to the <b>CN North-Beijing4</b> region.

- Example request

POST [https://{Endpoint}/v2.0/{project\\_id}/bandwidths/{bandwidth\\_id}/remove](https://{Endpoint}/v2.0/{project_id}/bandwidths/{bandwidth_id}/remove)

```
{
  "bandwidth": {
    "publicip_info": [
      {
        "publicip_id": "d91b0028-6f6b-4478-808a-297b75b6812a"
      },
      {
        "publicip_id": "1d184b2c-4ec9-49b5-a3f9-27600a76ba3f"
      }
    ],
    "charge_mode": "traffic",
    "size": 22
  }
}
```

## Response Message

- Response parameter

None

- Example response

None

Or

```
{
  "code": "xxx",
  "message": "xxxxx"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.3.6 Updating a Yearly/Monthly Bandwidth

### Function

This API is used to update information about a bandwidth in yearly/monthly billing mode.

### URI

PUT /v2.0/{project\_id}/bandwidths/{bandwidth\_id}

[Table 4-70](#) describes the parameters.

**Table 4-70** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth. You can obtain it in <a href="#">Querying an EIP</a> .

### Request Message

- Request parameter

**Table 4-71** Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	Object	Specifies the bandwidth objects. For details, see <a href="#">Table 4-72</a> .
extendParam	No	Object	Specifies the extended parameter, which is used to apply for resources in yearly/monthly billing mode. For details, see <a href="#">Table 4-73</a> .

**Table 4-72** Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.). If the value is left blank, the name of the bandwidth is not changed.</li><li>• Either <b>name</b> or <b>size</b> must be specified.</li></ul>
size	No	Integer	<ul style="list-style-type: none"><li>• Specifies the bandwidth size. The size of the bandwidth in yearly/monthly billing mode can only be changed to a larger value.</li><li>• The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.) If the parameter is not included, the bandwidth size is not changed.</li><li>• Either <b>name</b> or <b>size</b> must be specified.</li><li>• The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>- The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li><li>- The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</li><li>- The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li></ul></li></ul>

**Table 4-73** Description of the `extendParam` field

Name	Mandatory	Type	Description
<code>is_auto_pay</code>	No	boolean	<ul style="list-style-type: none"> <li>Specifies whether an order is automatically paid from the customer's account without manual operations. By default, the system will not automatically pay the order.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>true</b>: Yes (The order will be automatically paid.)</li> <li><b>false</b>: No (Default value. You must manually pay the order.)</li> </ul> </li> <li>Constraints: If you use the automatic payment mode, only your account balance can be used. If you want to use a voucher, do not use the automatic payment mode, and select the voucher for the payment in the Billing Center.</li> </ul>

• Example request

PUT `https://{Endpoint}/v2.0/{project_id}/bandwidths/{bandwidth_id}`

```
{
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10
  },
  "extendParam": {
    "is_auto_pay": "false"
  }
}
```

## Response Message

- Response parameter

**Table 4-74** Response parameter

Name	Type	Description
<code>bandwidth</code>	Object	Specifies the bandwidth object. This object is returned only when the value of the <b>name</b> parameter in the <b>bandwidth</b> fields is updated in the pay-per-use or yearly/monthly billing mode. For details, see <a href="#">Table 4-75</a> .

Name	Type	Description
order_id	String	Specifies the order ID. (yearly/monthly billing mode) <b>NOTE</b> If you need to pay for the order, see <b>Paying for the Order of Yearly/Monthly-Billed Resources</b> .

**Table 4-75** Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth name.</li> <li>The value is a string of 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>
size	Integer	<ul style="list-style-type: none"> <li>Specifies the bandwidth size.</li> <li>The value ranges from 5 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</li> </ul>
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> <li>Specifies whether the bandwidth is shared or dedicated.</li> <li>The value can be <b>PER</b> or <b>WHOLE</b>. <ul style="list-style-type: none"> <li><b>WHOLE</b>: Shared bandwidth</li> <li><b>PER</b>: Dedicated bandwidth</li> </ul> </li> </ul>
publicip_info	Array of <a href="#">publicip_info</a> objects	<ul style="list-style-type: none"> <li>Specifies information about the EIP that uses the bandwidth. For details, see <a href="#">Table 4-76</a>.</li> <li>The bandwidth, whose type is <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is <b>PER</b>, can be used by only one EIP.</li> </ul>
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	<ul style="list-style-type: none"> <li>• Specifies the bandwidth type. The default value for the shared bandwidth is <b>share</b>.</li> <li>• The value can be <b>share</b>, <b>bgp</b>, <b>telcom</b>, or <b>sbgp</b>. <ul style="list-style-type: none"> <li>- <b>share</b>: Shared bandwidth</li> <li>- <b>bgp</b>: Dynamic BGP</li> <li>- <b>telcom</b>: China Unicom</li> <li>- <b>sbgp</b>: Static BGP</li> </ul> </li> </ul>
charge_mode	String	<ul style="list-style-type: none"> <li>• Specifies whether the bandwidth is billed by traffic, bandwidth, or 95th percentile bandwidth (enhanced).</li> <li>• Possible values can be <b>bandwidth</b> (billed by bandwidth), <b>traffic</b> (billed by traffic), or <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If the value is an empty character string or no value is specified, value <b>bandwidth</b> is used.</li> <li>• Only the shared bandwidth supports <b>95peak_plus</b> (billed by enhanced 95th percentile bandwidth). If you use the enhanced 95th percentile bandwidth, you need to specify the guaranteed bandwidth percentage. The default value is 20%. Shared bandwidth does not support billing by traffic. Yearly/monthly shared bandwidth does not support billing by enhanced 95th percentile bandwidth.</li> </ul>
billing_info	String	<p>Specifies the bill information.</p> <p>If <b>billing_info</b> is specified, the bandwidth is in yearly/monthly billing mode.</p>

Name	Type	Description
enterprise_project_id	String	<ul style="list-style-type: none"> <li>Specifies the enterprise project ID. The value can contain a maximum of 36 characters. It is string "0" or in UUID format with hyphens (-). When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth.</li> </ul> <p><b>NOTE</b> For more information about enterprise projects and how to obtain enterprise project IDs, see the <a href="#">Enterprise Management User Guide</a>.</p>
status	String	<ul style="list-style-type: none"> <li>Specifies the bandwidth status.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>FREEZED</b> (Frozen)</li> <li><b>NORMAL</b> (Normal)</li> </ul> </li> </ul>
created_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
updated_at	String	<ul style="list-style-type: none"> <li>Specifies the time (UTC) when the bandwidth is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>
enable_bandwidth_rules	boolean	<ul style="list-style-type: none"> <li>Specifies whether to enable QoS.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of <a href="#">bandwidth_rules</a> objects	Specifies the bandwidth rules.

**Table 4-76 publicip\_info** object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP or IPv6 port that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available. Specifies the IPv4 address corresponding to the IPv6 address if IPv6 EIPs are available.

Name	Type	Description
publicipv6_address	String	Specifies the obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available.
ip_version	Integer	<ul style="list-style-type: none"> <li>• Specifies the IP address version.</li> <li>• Possible values are as follows:               <ul style="list-style-type: none"> <li>- <b>4</b>: IPv4 address</li> <li>- <b>6</b>: IPv6 address</li> </ul> </li> </ul>
publicip_type	String	<ul style="list-style-type: none"> <li>• Specifies the EIP type.</li> <li>• Possible values are <b>5_telcom</b> (China Telecom), <b>5_union</b> (China Unicom), <b>5_bgp</b> (dynamic BGP), and <b>5_sbgp</b> (static BGP).               <ul style="list-style-type: none"> <li>- CN Northeast-Dalian: <b>5_telcom</b> and <b>5_union</b></li> <li>- CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- AP-Hong Kong: <b>5_bgp</b></li> <li>- AP-Bangkok: <b>5_bgp</b></li> <li>- AP-Singapore: <b>5_bgp</b></li> <li>- AF-Johannesburg: <b>5_bgp</b></li> <li>- CN Southwest-Guiyang1: <b>5_sbgp</b></li> <li>- CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li> <li>- LA-Santiago: <b>5_bgp</b></li> <li>- LA-Sao Paulo1: <b>5_bgp</b></li> <li>- LA-Mexico City1: <b>5_bgp</b></li> <li>- LA-Buenos Aires1: <b>5_bgp</b></li> <li>- LA-Lima1: <b>5_bgp</b></li> <li>- LA-Santiago2: <b>5_bgp</b></li> </ul> </li> <li>• The configured value must be supported by the system.</li> </ul>

**Table 4-77 bandwidth\_rules** object

Name	Type	Description
id	string	Specifies the bandwidth rule ID.
name	string	Specifies the name of the bandwidth rule.
admin_state_up	boolean	Specifies the configuration status. The value <b>False</b> indicates that the configuration does not take effect.
egress_size	integer	<ul style="list-style-type: none"><li>Specifies the maximum outbound bandwidth in Mbit/s.</li><li>The value range ranges from <b>0</b> to <i>n</i>, where <i>n</i> indicates the shared bandwidth size. If the value is set to <b>0</b>, the maximum bandwidth, that is the shared bandwidth size will be used.</li></ul>
egress_guaranteed_size	integer	<ul style="list-style-type: none"><li>Specifies the guaranteed outbound bandwidth in Mbit/s.</li><li>The value ranges from <b>0</b> to <i>x</i>, where <i>x</i> indicates the remaining bandwidth.</li></ul>
publicip_info	array	<ul style="list-style-type: none"><li>Specifies the EIP associated with the bandwidth.</li><li>The bandwidth, whose type is set to <b>WHOLE</b>, can be used by multiple EIPs. The bandwidth, whose type is set to <b>PER</b>, can be used by only one EIP.</li></ul>

- Example response 1 (only the value of the **name** parameter in the **bandwidth** field is updated in the pay-per-use or yearly/monthly billing mode.)

```
{
  "bandwidth": {
    "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
        "publicip_address": "161.xx.xx.9",
        "publicip_type": "5_bgp",
        "ip_version": 4
      }
    ]
  },
  "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
  "created_at": "2020-04-21T08:56:42Z",
  "updated_at": "2020-04-21T08:56:42Z",
  "bandwidth_type": "bgp"
}
```

- Example response 2 (yearly/monthly bandwidth)

```
{
  "order_id": "xxxx"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 4.4 Quota

## 4.4.1 Querying the Quota

### Function

This API is used to query network resource quotas of a tenant. The network resources include VPCs, subnets, security groups, security group rules, EIPs, and VPNs.

#### NOTE

This API is used to query both the EIP and VPC quotas.

### URI

GET /v1/{project\_id}/quotas

Example:

```
GET https://{Endpoint}/v1/{project_id}/quotas?type={type}
```

[Table 4-78](#) describes the parameters.

**Table 4-78** Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
type	No	String	Specifies the resource type. The value can be <b>vpc</b> , <b>subnet</b> , <b>securityGroup</b> , <b>securityGroupRule</b> , <b>publicIp</b> , <b>vpn</b> , <b>vpngw</b> , <b>vpcPeer</b> , <b>firewall</b> , <b>shareBandwidth</b> , <b>shareBandwidthIP</b> , <b>loadbalancer</b> , or <b>listener</b> .

## Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v1/{project\_id}/quotas

## Response Message

- Response parameter

**Table 4-79** Response parameter

Name	Type	Description
quotas	Object	Specifies the quota object. For details, see <a href="#">Table 4-80</a> .

**Table 4-80** Description of the **quotas** field

Name	Type	Description
resources	Array of <b>resource</b> objects	Specifies the resource objects. For details, see <a href="#">Table 4-81</a> .

**Table 4-81** Description of the **resource** field

Name	Type	Description
type	String	<ul style="list-style-type: none"><li>• Specifies the resource type.</li><li>• The value can be <b>vpc</b>, <b>subnet</b>, <b>securityGroup</b>, <b>securityGroupRule</b>, <b>publicIp</b>, <b>vpn</b>, <b>vpngw</b>, <b>vpcPeer</b>, <b>firewall</b>, <b>shareBandwidth</b>, or <b>shareBandwidthIP</b>.</li></ul>
used	Integer	<ul style="list-style-type: none"><li>• Specifies the number of created network resources.</li><li>• The value ranges from <b>0</b> to the value of <b>quota</b>.</li></ul>

Name	Type	Description
quota	Integer	<ul style="list-style-type: none"> <li>Specifies the maximum quota values for the resources.</li> <li>The value ranges from the default quota value to the maximum quota value.</li> <li>The default resource quota values can be changed. You must configure the quota values in the underlying system in advance. The default quota values of network resources are as follows:  VPC: <b>5</b>  Subnet: <b>100</b>  Security group: <b>100</b>  Security group rule: <b>5000</b>  EIP: <b>10</b>  VPN: <b>5</b>  VPN gateway: <b>2</b>  VPC peering connection: <b>50</b>  Firewall: <b>200</b>  Shared bandwidth: <b>5</b>  IP address with shared bandwidth: <b>20</b></li> </ul>
min	Integer	Specifies the minimum quota value allowed.

- Example response

```

{
  "quotas": {
    "resources": [
      {
        "type": "vpc",
        "used": 4,
        "quota": 150,
        "min": 0
      },
      {
        "type": "subnet",
        "used": 5,
        "quota": 400,
        "min": 0
      },
      {
        "type": "securityGroup",
        "used": 1,
        "quota": 100,
        "min": 0
      },
      {
        "type": "securityGroupRule",
        "used": 6,
        "quota": 5000,
        "min": 0
      },
      {
        "type": "publicIp",

```

```
    "used": 2,  
    "quota": 10,  
    "min": 0  
  },  
  {  
    "type": "vpn",  
    "used": 0,  
    "quota": 5,  
    "min": 0  
  },  
  {  
    "type": "vpngw",  
    "used": 0,  
    "quota": 2,  
    "min": 0  
  },  
  {  
    "type": "vpcPeer",  
    "used": 0,  
    "quota": 50,  
    "min": 0  
  },  
  {  
    "type": "firewall",  
    "used": 0,  
    "quota": 200,  
    "min": 0  
  },  
  {  
    "type": "shareBandwidth",  
    "used": 0,  
    "quota": 5,  
    "min": 0  
  },  
  {  
    "type": "shareBandwidthIP",  
    "used": 0,  
    "quota": 20,  
    "min": 0  
  },  
  {  
    "type": "loadbalancer",  
    "used": 0,  
    "quota": 10,  
    "min": 0  
  },  
  {  
    "type": "listener",  
    "used": 0,  
    "quota": 10,  
    "min": 0  
  }  
]  
}
```

## Status Codes

See [Status Codes](#).

## Error Codes

See [Error Codes](#).

## 4.5 EIP Tag Management

### 4.5.1 Creating a Tag for an EIP

#### Function

This API is used to create a tag for an EIP.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

#### URI

POST /v2.0/{project\_id}/publicips/{publicip\_id}/tags

[Table 4-82](#) describes the parameters.

**Table 4-82** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

#### Request Message

- Request parameter

**Table 4-83** Request parameter

Parameter	Type	Mandatory	Description
tag	Object	Yes	Specifies the <b>tag</b> objects. For details, see <a href="#">Table 4-84</a> .

**Table 4-84 tag objects**

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"><li>• Specifies the tag key.</li><li>• Cannot be left blank.</li><li>• Can contain a maximum of 36 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a VPC must be unique.</li></ul>
value	String	Yes	<ul style="list-style-type: none"><li>• Specifies the tag value.</li><li>• Can contain a maximum of 43 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>

- **Example request**

POST `https://{Endpoint}/v2.0/{project_id}/publicips/{publicip_id}/tags`

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

## Response Message

- Response parameter

None

- Example response

None

Or

```
{
  "code": "xxx",
  "message": "xxxxx"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.5.2 Querying EIP Tags

### Function

This API is used to query tags of a specified EIP.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

### URI

GET /v2.0/{project\_id}/publicips/{publicip\_id}/tags

[Table 4-85](#) describes the parameters.

**Table 4-85** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

### Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v2.0/{project\_id}/publicips/{publicip\_id}/tags

### Response Message

- Response parameter

**Table 4-86** Response parameter

Parameter	Type	Description
tags	Array of <a href="#">tag</a> objects	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 4-87</a> .

**Table 4-87 tag objects**

Attribute	Type	Description
key	String	<ul style="list-style-type: none"><li>• Specifies the tag key.</li><li>• Cannot be left blank.</li><li>• Can contain a maximum of 36 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a VPC must be unique.</li></ul>
value	String	<ul style="list-style-type: none"><li>• Specifies the tag value.</li><li>• Can contain a maximum of 43 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>

- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.5.3 Deleting an EIP Tag

### Function

This API is used to delete an EIP tag.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

### URI

DELETE /v2.0/{project\_id}/publicips/{publicip\_id}/tags/{key}

[Table 4-88](#) describes the parameters.

**Table 4-88** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.
key	Yes	Specifies the tag key.

## Request Message

- Request parameter  
None
- Example request  
DELETE https://{Endpoint}/v2.0/{project\_id}/publicips/{publicip\_id}/tags/{key}

## Response Message

- Response parameter  
None
- Example response  
None  
Or  

```
{  
  "code": "xxx",  
  "message": "xxxxx"  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.5.4 Batch Creating or Deleting EIP Tags

### Function

This API is used to add multiple tags to or delete multiple tags from an EIP at a time.

This API is idempotent.

If there are duplicate keys in the request body when you add tags, 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 do not exist, the operation is considered to be successful by default. The character set of the tags will not be checked. When you delete tags, the tag structure cannot be missing, and the key cannot be left blank or be an empty string.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

## URI

POST /v2.0/{project\_id}/publicips/{publicip\_id}/tags/action

[Table 4-89](#) describes the parameters.

**Table 4-89** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
publicip_id	Yes	Specifies the unique identifier of an EIP.

## Request Message

- Request parameter

**Table 4-90** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <a href="#">tag</a> objects	Yes	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 4-91</a> .
action	String	Yes	Specifies the operation. Possible values are as follows: <ul style="list-style-type: none"><li><b>create</b></li><li><b>delete</b></li></ul>

**Table 4-91 tag objects**

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"> <li>Specifies the tag key.</li> <li>Cannot be left blank.</li> <li>Can contain a maximum of 36 characters.</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>The tag key of a VPC must be unique.</li> </ul>
value	String	Yes (when the value of <b>action</b> is <b>create</b> ) No (when the value of <b>action</b> is <b>delete</b> )	<ul style="list-style-type: none"> <li>Specifies the tag value.</li> <li>Can contain a maximum of 43 characters.</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

- Request example 1: Creating tags in batches

POST [https://{Endpoint}/v2.0/{project\\_id}/publicips/{publicip\\_id}/tags/action](https://{Endpoint}/v2.0/{project_id}/publicips/{publicip_id}/tags/action)

```
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

- Request example 2: Deleting tags in batches

POST [https://{Endpoint}/v2.0/{project\\_id}/publicips/{publicip\\_id}/tags/action](https://{Endpoint}/v2.0/{project_id}/publicips/{publicip_id}/tags/action)

```
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
```

```
    "value": "value1"
  },
  {
    "key": "key2",
    "value": "value3"
  }
]
```

## Response Message

- Response parameter

None

- Example response

None

Or

```
{
  "code": "xxx",
  "message": "xxxxx"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.5.5 Querying EIPs by Tag

### Function

This API is used to query EIPs by tag.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

### URI

POST /v2.0/{project\_id}/publicips/resource\_instances/action

[Table 4-92](#) describes the parameters.

**Table 4-92** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request Message

- Request parameter

**Table 4-93** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <b>tag</b> objects	No	Specifies the included tags. A maximum of 10 tag keys are allowed for each query operation. Each tag key can have up to 10 tag values. The structure body must be included. The tag 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.
limit	String	No	Sets the page size. This parameter is not available when <b>action</b> is set to <b>count</b> . The default value is <b>1000</b> when <b>action</b> is set to <b>filter</b> . The maximum value is <b>1000</b> , and the minimum value is <b>1</b> . The value cannot be a negative number.
offset	String	No	Specifies the index position. The query starts from the next piece of data indexed by this parameter. 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 <b>action</b> is set to <b>count</b> . If <b>action</b> is set to <b>filter</b> , the value must be a number, and the default value is <b>0</b> . The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be <b>filter</b> (filtering) or <b>count</b> (querying the total number). The value <b>filter</b> indicates pagination query. The value <b>count</b> indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of <b>match</b> objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only <b>resource_name</b> is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

**Table 4-94** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 127 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)
values	Yes	Array of strings	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value. The values are in the OR relationship.

**Table 4-95** Description of the **match** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Currently, the tag key can only be the resource name.
value	Yes	String	Specifies the tag value. A value contains a maximum of 255 Unicode characters.

- Example request 1: Setting **action** to **filter**

POST https://{Endpoint}/v2.0/{project\_id}/publicips/resource\_instances/action

```
{
  "offset": "0",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
        "*value1",
        "value2"
      ]
    }
  ]
}
```

- Example request 2: Setting **action** to **count**

```
{
  "action": "count",
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ],
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ]
}
```

## Response Message

- Response parameter

**Table 4-96** Response parameter

Name	Type	Description
resources	Array of <b>resource</b> objects	Specifies the <b>resource</b> object list. For details, see <a href="#">Table 4-97</a> .
total_count	Integer	Specifies the total number of query records.

**Table 4-97** resource objects

Name	Type	Description
resource_id	String	Specifies the resource ID.
resource_detail	Object	Specifies the resource details. Resource details are used for extension. This parameter is left blank by default.

Name	Type	Description
tags	Array of <b>tag</b> objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see <a href="#">Table 4-98</a> .
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

**Table 4-98** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 127 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)
values	Yes	Array of strings	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value. The values are in the OR relationship.

- Example response 1: Setting **action** to **filter**

```

{
  "resources": [
    {
      "resource_detail": null,
      "resource_id": "cdfs_cefs_wesas_12_dsad",
      "resource_name": "resouece1",
      "tags": [
        {
          "key": "key1",
          "value": "value1"
        },
        {
          "key": "key2",
          "value": "value1"
        }
      ]
    }
  ],
  "total_count": 1000
}

```

- Example response 2: Setting **action** to **count**

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

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 4.5.6 Querying EIP Tags in a Specified Project

### Function

This API is used to query all EIP tags of a tenant in a specified region.

Currently, this type of API is available only in regions **CN North-Beijing4**, **CN East-Shanghai1**, **CN East-Shanghai2**, and **CN Southwest-Guiyang1**.

### URI

GET /v2.0/{project\_id}/publicips/tags

[Table 4-99](#) describes the parameters.

**Table 4-99** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

### Request Message

- Request parameter  
None
- Example request  
GET /v2.0/{project\_id}/publicips/tags

### Response Message

- Response parameter

**Table 4-100** Response parameter

Parameter	Type	Description
tags	Array of <b>tag</b> objects	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 4-101</a> .

**Table 4-101** Description of the **tag** field

Name	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none"> <li>Cannot be left blank.</li> <li>Can contain a maximum of 36 characters.</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> </ul>
values	Array of strings	Specifies the tag value list. <ul style="list-style-type: none"> <li>Can contain a maximum of 43 characters.</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

- Example response

```

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

```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 5 Application Examples

## 5.1 Binding an EIP to an ECS

### Scenarios

This section describes how to bind an EIP to an ECS by calling APIs.

### Prerequisites

- You have purchased an ECS. For details, see [Overview](#).
- 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 following instructions in section [Authentication](#).

#### NOTE

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

### Procedure

1. Obtain the NIC information based on the ECS ID.
  - a. Send **GET** `https://VPC endpoint/v1/project_id/ports?device_id=ecs_id`. Parameter **project\_id** indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response message.
    - The request is successful if the following response is displayed.

```
{
  "ports": [{
    "id": "02c72193-efec-42fb-853b-c33f2b802467",
    "name": "",
    "status": "ACTIVE",
    "admin_state_up": true,
    "fixed_ips": [{
      "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
      "ip_address": "192.168.0.75"
    }],
    "mac_address": "fa:16:3e:47:5f:c1",
    "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
```

```
"tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
"project_id": "db82c9e1415a464ea68048baa8acc6b8",
"device_id": "ea61f836-b52f-41bf-9d06-685644001d6f",
"device_owner": "compute:br-iaas-odin1a",
"security_groups": [
  "e0598d96-9451-4f8a-8de0-b8b4d451d9e7"
],
"extra_dhcp_opts": [],
"allowed_address_pairs": [],
"binding:vnic_type": "normal",
"binding:vif_details": {
  "primary_interface": true
},
"binding:profile": {},
"port_security_enabled": true,
"created_at": "2020-06-20T08:07:29",
"updated_at": "2020-06-20T08:07:29"
}}
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).

## 2. Assign an EIP.

- Send **POST** `https://Endpoint/v1/project_id/publicips`. Parameter **project\_id** indicates the project ID.
- Add **X-Auth-Token** to the request header.
- Specify the following parameters in the request body:

```
{
  "publicip": {
    "type": "5_bgp",
    "ip_version": 6
  },
  "bandwidth": {
    "name": "bandwidth123",
    "size": 5,
    "share_type": "WHOLE",
    "id": "ebfa375c-3f93-465e-81a3-bd66e578ee9d"
  },
  "enterprise_project_id": "0"
}
```

- Check the response message.

- The request is successful if the following response is displayed.

```
{
  "publicip": {
    "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "161.xx.xx.7",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "ip_version": 4,
    "create_time": "2015-07-16 04:10:52",
    "bandwidth_size": 0,
    "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
  }
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).

## 3. Bind the EIP to the ECS NIC.

- Send **PUT** `/v1/project_id/publicips/publicip_id`. Parameter **project\_id** indicates the project ID.

- b. Add **X-Auth-Token** to the request header.
- c. Specify the following parameters in the request body:

```
{
  "publicip": {
    "port_id": "f588ccfa-8750-4d7c-bf5d-2ede24414706"
  }
}
```

- d. Check the response message.
  - The request is successful if the following response is displayed.

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "ACTIVE",
    "type": "5_bgp",
    "port_id": "a135e9b8-1630-40d2-a6c5-eb534a61efbe",
    "public_ip_address": "10.xx.xx.162",
    "private_ip_address": "192.168.1.131",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 01:33:18",
    "bandwidth_size": 7,
    "ip_version": 4
  }
}
```
  - For details about the error codes when the request is abnormal, see [Error Codes](#).

## 5.2 Unbinding an EIP from an ECS

### Scenarios

This section describes how to unbind an EIP from an ECS by calling APIs.

### Prerequisites

- You have purchased an ECS. For details, see [Overview](#).
- 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 following instructions in section [Authentication](#).

#### NOTE

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

### Procedure

1. Query EIP details.
  - a. Send **GET /v1/project\_id/publicips/publicip\_id**. Parameter **project\_id** indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response message.

- The request is successful if the following response is displayed.

```
{
  "publicip": {
```

```
"id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
"status": "ACTIVE",
"type": "5_bgp",
"port_id": "a135e9b8-1630-40d2-a6c5-eb534a61efbe",
"public_ip_address": "10.xx.xx.162",
"private_ip_address": "192.168.1.131",
"port_id": "a135e9b8-1630-40d2-a6c5-eb534a61efbe",
"tenant_id": "26ae5181a416420998eb2093aaed84d9",
"create_time": "2019-03-27 01:33:18",
"bandwidth_size": 7,
"ip_version": 4
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).
2. Unbind the EIP from the ECS NIC.
    - a. Send **PUT** `/v1/project_id/publicips/publicip_id`. Parameter **project\_id** indicates the project ID.
    - b. Add **X-Auth-Token** to the request header.
    - c. Specify the following parameters in the request body:

```
{
  "publicip": {
    "port_id": ""
  }
}
```

- a. Check the response message.
  - The request is successful if the following response is displayed.

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "ACTIVE",
    "type": "5_bgp",
    "public_ip_address": "10.xx.xx.162",
    "private_ip_address": "192.168.1.131",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 01:33:18",
    "bandwidth_size": 7,
    "ip_version": 4
  }
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).

## 5.3 Assigning an EIP with a Specific Shared Bandwidth

### Scenarios

This section describes how to assign an EIP with a specific shared bandwidth by calling APIs.

### Prerequisites

You have planned the region where you want to assign the EIP and obtained the endpoint required for calling APIs. For details, see [EIP Endpoints](#).

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 following instructions in section [Authentication](#).

#### NOTE

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

## Procedure

1. Assign a shared bandwidth.
  - a. Send **POST** [https://Endpoint/v2.0/project\\_id/bandwidths](https://Endpoint/v2.0/project_id/bandwidths). Parameter **project\_id** indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Specify the following parameters in the request body:

```
{
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
  }
}
```
  - d. Check the response message.
    - The request is successful if the following response is displayed. In the response, **id** indicates the bandwidth ID.

```
{
  "bandwidth": {
    "id": "1bffc5f2-ff19-45a6-96d2-dfdca49cc387",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "WHOLE",
    "publicip_info": [],
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "bandwidth_type": "share",
    "charge_mode": "bandwidth",
    "enterprise_project_id": "0",
    "status": "NORMAL",
    "created_at": "2020-04-21T07:58:02Z",
    "updated_at": "2020-04-21T07:58:02Z"
  }
}
```
    - For details about the error codes when the request is abnormal, see [Error Codes](#).
2. Query the shared bandwidth details.
  - a. Send **Get** [https://Endpoint/v1/project\\_id/bandwidths/bandwidth\\_id](https://Endpoint/v1/project_id/bandwidths/bandwidth_id). Parameter **project\_id** indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response message.
    - The request is successful if the following response is displayed. In the response, **id** indicates the bandwidth ID.

```
{
  "bandwidth": {
    "id": "a97a827c-3636-4eda-82ce-7aaeeaac2af",
    "name": "bandwidth-fd7fE3",
    "size": 6,

```

```
"share_type": "PER",
"publicip_info": [
  {
    "publicip_id": "ff156c26-bcc9-4541-a75c-42baf8b9748f",
    "publicip_address": "114.xx.xx.244",
    "ip_version": 4,
    "publicip_type": "5_sbgp"
  }
],
"tenant_id": "b3292dde618e40408e30cd87455a0652",
"bandwidth_type": "sbgp",
"charge_mode": "bandwidth",
"enterprise_project_id": "0",
"status": "NORMAL",
"created_at": "2020-04-21T07:58:02Z",
"updated_at": "2020-04-21T07:58:02Z"
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).

3. Assign an EIP using the shared bandwidth.

- Send **POST** `https://Endpoint/v1/project_id/publicips`. Parameter **project\_id** indicates the project ID.
- Add **X-Auth-Token** to the request header.
- Specify the following parameters in the request body:

```
{
  "publicip": {
    "type": "5_bgp",
    "ip_version": 6
  },
  "bandwidth": {
    "name": "bandwidth123",
    "size": 5,
    "share_type": "WHOLE",
    "id": "ebfa375c-3f93-465e-81a3-bd66e578ee9d"
  },
  "enterprise_project_id": "0"
}
```

d. Check the response message.

- The request is successful if the following response is displayed.

```
{
  "publicip": {
    "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "161.xx.xx.7",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "ip_version": 4,
    "create_time": "2015-07-16 04:10:52",
    "bandwidth_size": 0,
    "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439"
  }
}
```

- For details about the error codes when the request is abnormal, see [Error Codes](#).

4. Query EIP details.

- Send **GET** `/v1/project_id/publicips/publicip_id`. Parameter **project\_id** indicates the project ID.

- b. Add **X-Auth-Token** to the request header.
- c. Check the response message.

```
{
  "publicip": {
    "id": "3ec9fea0-2d4c-49e2-8aca-ce883eae547d",
    "type": "5_bgp",
    "public_ip_address": "10.246.164.87",
    "status": "DOWN",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "create_time": "2020-08-13 12:55:27",
    "bandwidth_id": "1f570558-46cc-4f78-8a70-db108a617494",
    "bandwidth_name": "bandwidth-zzzzzz",
    "bandwidth_share_type": "WHOLE",
    "bandwidth_size": 6,
    "profile": {},
    "enterprise_project_id": "a380829c-db6f-4db3-b5b6-cc377f7a3ff8",
    "ip_version": 4
  }
}
```

# 6 Permissions Policies and Supported Actions

---

## 6.1 Introduction

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

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

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

### NOTE

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

An account has all 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 that have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user queries EIPs using an API, the user must have been granted permissions that allow the **vpc:publicips:list** action.

## Supported Actions

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

- **Permission:** A statement in a policy that allows or denies certain operations.

- API: REST APIs that can be called by a user who has been granted specific permissions.
- Action: Specific operations that are allowed or denied.
- IAM or enterprise projects: Type of projects for which an action will take effect. Policies that contain actions for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and only take effect for IAM. For details about the differences between IAM and enterprise projects, see [What Are the Differences Between IAM and Enterprise Management](#).

 NOTE

√: supported; x: not supported

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

**Elastic IP** actions that supported by EIP APIs include assigning an EIP, querying an EIP, querying EIPs, updating an EIP, and deleting an EIP.

## 6.2 Elastic IP

Permissi on	API	Action	IAM Project	Enterprise Project
Assigns an EIP.	POST /v1/{project_id}/publicips	vpc:publicips:create	√	√
Queries an EIP.	GET /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:get	√	√
Queries EIPs.	GET /v1/{project_id}/publicips	vpc:publicips:list	√	√
Updates an EIP.	PUT /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:update	√	√
Release an EIP.	DELETE /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:delete	√	√
Assigns a yearly/monthly EIP.	POST /v2.0/{project_id}/publicips	vpc:publicips:create	√	√

## 6.3 Bandwidth

Permission	API	Action	IAM Project	Enterprise Project
Queries a bandwidth.	GET /v1/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:get	√	√
Queries bandwidths.	GET /v1/{project_id}/bandwidths	vpc:bandwidths:list	√	√
Updates a bandwidth.	PUT /v1/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:update	√	√

## 6.4 Bandwidth (V2.0)

Permission	API	Action	IAM Project	Enterprise Project
Allocates a shared bandwidth.	POST /v2.0/{project_id}/bandwidths	vpc:bandwidths:create	√	√
Deletes a shared bandwidth.	DELETE /v2.0/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:delete	√	√
Adds an EIP to a shared bandwidth.	POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/insert	vpc:publicips:insert	√	√
Removes an EIP from a shared bandwidth.	POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/remove	vpc:publicips:remove	√	√

Permission	API	Action	IAM Project	Enterprise Project
Updates a yearly/monthly bandwidth.	PUT /v2.0/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:update	√	√

## 6.5 EIP Tags

Permission	API	Action	IAM Project	Enterprise Project
Creating a Tag for an EIP	POST /v2.0/{project_id}/publicips/{publicip_id}/tags	vpc:publicipTags:create	√	×
Querying EIP Tags	GET /v2.0/{project_id}/publicips/{publicip_id}/tags	vpc:publicipTags:get	√	×
Deleting an EIP Tag	DELETE /v2.0/{project_id}/publicips/{publicip_id}/tags/{key}	vpc:publicipTags:delete	√	×
Batch Creating or Deleting EIP Tags	POST /v2.0/{project_id}/publicips/{publicip_id}/tags/action	vpc:publicipTags:create vpc:publicipTags:delete	√	×
Querying EIPs by Tag	POST /v2.0/{project_id}/publicips/resource_instances/action	vpc:publicipTags:get	√	×
Querying EIP Tags in a Specified Project	GET /v2.0/{project_id}/publicips/tags	vpc:publicipTags:get	√	×

## 6.6 Floating IP Address (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise Project
Queries floating IP addresses.	GET /v2.0/floatingips	vpc:floatingips:get	√	×
Queries a floating IP address.	GET /v2.0/floatingips/{floatingip_id}	vpc:floatingips:get	√	×
Creates a floating IP address.	POST /v2.0/floatingips	vpc:floatingips:create	√	×
Updates a floating IP address.	PUT /v2.0/floatingips/{floatingip_id}	vpc:floatingips:update	√	×
Deletes a floating IP address.	DELETE /v2.0/floatingips/{floatingip_id}	vpc:floatingips:delete	√	×

## 6.7 Precautions for API Permissions

Currently, this function is available only in the East China, South China, and North China regions.

If you have insufficient permissions, response code **200** will be returned when you query network resources and an empty list will be displayed.

# 7 Public Parameters

## 7.1 Status Codes

Table 7-1 Normal values

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

Table 7-2 Abnormal values

Returned Value	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.

Returned Value	Description
406 Not Acceptable	The response generated by the server could not be accepted by the client.
407 Proxy Authentication Required	You must use the proxy server for authentication so that the request can be processed.
408 Request Timeout	The request timed out.
409 Conflict	The request could not 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 service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

## 7.2 Error Codes

### Description

If an error occurs when an API is called, error information is returned. This section describes the error information for EIP APIs (excluding native OpenStack APIs).

### Example of Returned Error Information

```
{
  "code": "VPC.0504",
  "message": "Floating IP could not be found."
}
```

### Error Code Description

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [Error Codes](#).

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
Public	400	VPC.0002	The AZ is left blank.	Available zone Name is null.	Check whether the <b>availability_zone</b> field in the request body for creating a subnet is left blank.
	404	VPC.0003	The VPC does not exist.	VPC does not exist.	Check whether the VPC ID is correct or whether the VPC exists under the tenant.
	400	VPC.0004	The VPC status is abnormal.	VPC is not active, please try later.	Try again later or contact technical support.
	401	VPC.0009	Real-name authentication fails.	real-name authentication fail.	Contact technical support.
Public	400	VPC.0007	Inconsistent tenant IDs.	urlTenantId is not equal tokenTenantId	The tenant ID in the URL is different from that parsed in the token.
	401	VPC.0008	Invalid token.	Invalid token in the header.	Check whether the token in the request header is valid.
	403	VPC.2701	You do not have permission to perform this operation, or your account balance is insufficient.	Token not allowed to do this action.	Check whether the account balance is insufficient or whether your account has been frozen.
Public	403	VPC.0010	Insufficient permissions to make calls to the underlying system.	Rules on xx by ** disallowed by policy	Obtain the required permissions.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	403	VPC.2201	Insufficient fine-grained permissions.	Policy doesn't allow <x:x:x> to be performed	Obtain the required permissions.
Public	400	VPC.0014	The enterprise project is unavailable.	This enterpriseProject status is disable.	Use the ID of another available enterprise project.
	400	VPC.0011	Invalid enterprise project ID.	EnterpriseProjectId is invalid	Enter a valid enterprise project ID.
	500 409	VPC.0304	An internal error occurs when operations are being performed on the bandwidth.	createBandwidth error. NO QUOTAS for shareBandwidthIP! Query routers fail.	Contact technical support for handling the error based on the displayed error message.
Assigning an EIP	400	VPC.0301	The specified bandwidth parameter for assigning an EIP is invalid.	Bandwidth name or share_type is invalid.	Check whether the specified bandwidth parameter is valid.
	400	VPC.0501	Invalid EIP parameters.	Bandwidth share_type is invalid.	Check whether the parameter values are valid based on the returned error message and API reference document.
	403	VPC.0502	You are not allowed to assign the EIP.	Tenant status is op_restricted.	Check whether the account balance is insufficient or whether your account has been frozen.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	500	VPC.0503	Failed to assign the EIP.	Creating publicip failed.	Contact technical support.
	500	VPC.0504	Failed to assign the EIP because no IP address is found.	FloatIp is null.	Contact technical support.
	500	VPC.0508	Port-related resources could not be found.	Port is invalid.	Contact technical support.
	409	VPC.0510	The EIP has already been bound to another ECS.	Floatingip has already associated with port.	Unbind the EIP from the ECS.
	409	VPC.0511	The port has already been bound with an EIP.	Port has already associated with floatingip.	Unbind the port from the EIP.
	409	VPC.0521	Insufficient EIP quota.	Quota exceeded for resources : ['floating ip'].	Release the unbound EIPs or request to increase the EIP quota.
	409	VPC.0522	The IP address is invalid or in use.	The IP address is in use.	Check whether the IP address format is valid or replace it with another IP address.
	409	VPC.0532	Failed to assign the IP address because no IP addresses are available.	No more IP addresses available on network.	Release unbound EIPs or try again later.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	400	VPC.0011	The enterprise project ID must be a UUID.	EnterpriseProjectId is invalid.	Check whether the specified enterprise project ID is a valid UUID.
	404	VPC.0012	The enterprise project ID does not exist.	Requested resources not found.	Check whether an enterprise project with this ID exists for the tenant.
	400	VPC.0531	Invalid parameter when creating a yearly/monthly EIP.	invalid value: period_type or period_num.	Check whether the parameter <b>period_type</b> or <b>period_num</b> is valid.
Querying an EIP	400	VPC.0501	Invalid EIP parameters.	Invalid floatingip_id.	Check whether the EIP ID is valid.
	404	VPC.0504	The EIP could not be found.	Floating IP could not be found.	Check whether the specified EIP ID is valid.
	500	VPC.0514	An exception occurs in the IaaS OpenStack system.	Neutron Error.	Check whether the Neutron service is normal or contact technical support.
Querying EIPs	400	VPC.0501	Invalid EIP parameters.	Invalid limit.	Check whether the parameter values are valid based on the returned error message and API reference document.
Releasing an EIP	400	VPC.0501	Invalid EIP parameters.	Invalid param.	Contact technical support.
	404	VPC.0504	The EIP could not be found.	Floating IP could not be found.	Check whether the specified EIP ID is valid.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	409	VPC.0512	The EIP status is abnormal.	Resource status is busy, try it again later.	Try again later or contact technical support.
	500	VPC.0513	Network resources cannot be found.	getElementByKey error.	Contact technical support.
	500	VPC.0516	Failed to release the EIP because it is being used by a load balancer.	Publicip is in used by ELB.	Unbind the EIP from the load balancer.
	409	VPC.0517	Failed to release the EIP because it is bound to an ECS.	Floatingip has associated with port, please disassociate it firstly.	Unbind the EIP from the ECS.
	500	VPC.0518	Failed to release the EIP because it is being used by a network ACL.	Public IP has firewall rules.	Contact technical support.
	409	VPC.0525	An EIP whose billing mode is yearly/ monthly cannot be deleted directly.	The Floatingip is billing, can not delete.	Perform rollback operations.
Updating an EIP	400	VPC.0501	Invalid EIP parameters.	Port id is invalid.	Check whether the port ID is valid.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	404	VPC.0504	The EIP could not be found.	Floating IP could not be found.	Check whether the specified EIP ID is valid.
	500	VPC.0509	The port has already been associated with an EIP.	Floating ip double status is invalid.	Disassociate the port from the EIP.
	409	VPC.0510	The EIP has already been bound to another ECS.	Floating ip has already associated with port.	Unbind the EIP from the ECS.
	409	VPC.0511	Failed to bind the EIP to the ECS because another EIP has already been bound to the ECS.	Port has already associated with floating ip.	Unbind the EIP from the ECS.
	409	VPC.0512	The EIP status is abnormal.	Resource status is busy, try it again later.	Try again later or contact technical support.
	404/500	VPC.0514	An exception occurs in the IaaS OpenStack system.	Neutron Error.	Check whether the Neutron service is normal or contact technical support.
Querying a bandwidth	400	VPC.0301	The bandwidth parameters are incorrect.	getBandwidth error bandwidth id is invalid.	Check whether the bandwidth ID is valid.
	404	VPC.0306	The bandwidth object does not exist.	No EIP bandwidth exist with id.	The bandwidth object to be queried does not exist.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
	500	VPC.0302	An exception occurs in the IaaS OpenStack system.	Neutron Error.	Check whether the Neutron service is normal or contact technical support.
Querying bandwidths	400	VPC.0301	The bandwidth parameters are incorrect.	Get bandwidths error limit is invalid.	Check whether the parameter values are valid based on the returned error message and API reference document.
	404	VPC.0306	The bandwidth object does not exist.	No EIP bandwidth exist with id.	The bandwidth object to be queried does not exist.
	500	VPC.0302	An exception occurs in the IaaS OpenStack system.	Neutron Error.	Check whether the Neutron service is normal or contact technical support.
Updating a bandwidth	400	VPC.0301	The bandwidth parameters are incorrect.	updateBandwidth input param is invalid.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0302	Failed to obtain underlying resources.	Neutron Error.	Check whether the Neutron service is normal or contact technical support.
	500	VPC.0305	An internal error occurs during the bandwidth update.	updateBandwidth error.	Contact technical support.
Assigning a shared bandwidth	400	VPC.0310	Insufficient shared bandwidth quota.	NO QUOTAS for shareBandwidth!	Delete the shared bandwidth that is no longer required or contact technical support.
Adding an EIP to	400	VPC.0301	Invalid EIP.	Invalid publicip_id	Check whether the value of <b>publicip_id</b> in <b>publicip_info</b> is valid.

Module	HTTP Status Code	Error Code	Description	Error Message	Handling Measure
or removing an EIP from a shared bandwidth	400	VPC.0323	Failed to add an EIP to or remove an EIP from a shared bandwidth.	publicip can not be operate with this bandwidth	Check whether the shared bandwidth or EIP is normal.
Querying the Quota	400	VPC.1207	The specified resource type does not exist.	resource type is invalid.	Use an existing resource type.

# 8 Out-of-Date APIs

---

## 8.1 Native OpenStack Neutron APIs V2.0

### 8.1.1 API Version Information

#### 8.1.1.1 Querying API Versions

##### Function

This API is used to query all available versions of a native OpenStack API.

##### URI

GET /

##### Request Message

Request parameter

None

Example request

```
GET https://{Endpoint}/
```

##### Response Message

Response parameter

**Table 8-1** Response parameter

Parameter	Type	Description
versions	Array of <a href="#">version</a> objects	Specifies the API version list. For details, see <a href="#">Table 8-2</a> .

**Table 8-2** version objects

Parameter	Type	Description
status	String	Specifies the API version status. Possible values are as follows: <ul style="list-style-type: none"><li>• <b>CURRENT</b></li><li>• <b>STABLE</b></li><li>• <b>DEPRECATED</b></li></ul>
id	String	Specifies the API version.
links	Array of <a href="#">link</a> objects	Specifies the link list. For details, see <a href="#">Table 8-3</a> .

**Table 8-3** link objects

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

#### Example response

```
{
  "versions": [
    {
      "status": "CURRENT",
      "id": "v2.0",
      "links": [
        {
          "href": "https://None/v2.0",
          "rel": "self"
        }
      ]
    }
  ]
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.1.2 Pagination

### Function

Neutron APIs v2.0 provides the pagination function. You can set parameters **limit** and **marker** in the URL to enable the desired number of items to be returned. All returned items are displayed in the ascending order of ID.

- To access the next page of the request, perform the following configurations:
  - Replace the value of **marker** in the original access request URL. Replace the value of **marker** to the value of **marker** in the value of **herf** if the value of **rel** in the response is **next**.
  - Set the value of **page\_reverse** to **False**.
- To access the previous page of the request, perform the following configurations:
  - Replace the value of **marker** in the original access request URL. Replace the value of **marker** to the value of **marker** in the value of **herf** if the value of **rel** in the response is **previous**.
  - Set the value of **page\_reverse** to **True**.

### Request Message

Request parameter

**Table 8-4** Request parameter

Parameter	Type	Mandatory	Description
limit	String	No	Specifies the number of items displayed per page.
marker	String	No	Specifies the ID of the last item in the previous list. If the marker value is invalid, error code 400 will be returned.
page_reverse	Boolean	No	Specifies the page direction. The value can be <b>True</b> or <b>False</b> .

#### Example request 1

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=3d42a0d4-a980-4613-ae76-a2cddecff054&page_reverse=False
```

#### Example request 2

```
GET https://{Endpoint}/v2.0/vpc/peerings?limit=2&marker=e5a0c88e-228e-4e62-a8b0-90825b1b7958&page_reverse=True
```

### Response Message

Response parameter

None

## Example response 1

```
{
  "networks": [
    {
      "status": "ACTIVE",
      "subnets": [],
      "name": "liudongtest ",
      "admin_state_up": false,
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "id": "60c809cb-6731-45d0-ace8-3bf5626421a9"
    },
    {
      "status": "ACTIVE",
      "subnets": [
        "132dc12d-c02a-4c90-9cd5-c31669aace04"
      ],
      "name": "publicnet",
      "admin_state_up": true,
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
    }
  ],
  "networks_links": [
    {
      "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=9daeac7c-a98f-430f-8e38-67f9c044e299",
      "rel": "next"
    },
    {
      "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=60c809cb-6731-45d0-ace8-3bf5626421a9&page_reverse=True",
      "rel": "previous"
    }
  ]
}
```

## Example response 2

```
{
  "peerings_links": [
    {
      "marker": "dd442819-5638-401c-bd48-a82703cf0464",
      "rel": "next"
    },
    {
      "marker": "1e13cbaf-3ce4-413d-941f-66d855dbfa7f",
      "rel": "previous"
    }
  ],
  "peerings": [
    {
      "status": "ACTIVE",
      "accept_vpc_info": {
        "vpc_id": "83a48834-b9bc-4f70-aa46-074568594650",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "request_vpc_info": {
        "vpc_id": "db8e7687-e43b-4fc1-94cf-16f69f484d6d",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "name": "peering1",
      "id": "1e13cbaf-3ce4-413d-941f-66d855dbfa7f"
    },
    {
      "status": "ACTIVE",
      "accept_vpc_info": {
        "vpc_id": "83a48834-b9bc-4f70-aa46-074568594650",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "request_vpc_info": {
        "vpc_id": "db8e7687-e43b-4fc1-94cf-16f69f484d6d",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "name": "peering1",
      "id": "1e13cbaf-3ce4-413d-941f-66d855dbfa7f"
    }
  ]
}
```

```
"request_vpc_info": {
  "vpc_id": "bd63cc9e-e7b8-4d4e-a0e9-055031470ffc",
  "tenant_id": "e41a43bf06e249678413c6d61536eff9"
},
"name": "peering2",
"id": "dd442819-5638-401c-bd48-a82703cf0464"
}
]
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.2 Floating IP Address

### 8.1.2.1 Querying Floating IP Addresses

#### Function

This API is used to query all floating IP addresses accessible to the tenant submitting the request. A maximum of 2000 records can be returned for each query operation. If the number of records exceeds 2000, the pagination marker will be returned. For details, see section [Pagination](#).

You can query the detailed information about a specified floating IP address using the API for [Querying a Floating IP Address](#).

#### URI

GET /v2.0/floatingips

[Table 8-5](#) describes the parameters.

**Table 8-5** Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the floating IP address ID.
floating_ip_addresses	No	String	Specifies the floating IPv6 address.

Parameter	Mandatory	Type	Description
floating_network_id	No	String	Specifies the external network ID. You can only use fixed external network. You can use <b>GET /v2.0/networks?router:external=True</b> or <b>GET /v2.0/networks?name={floating_network}</b> or run the <b>neutron net-external-list</b> command to obtain information about the external network.
router_id	No	String	Specifies the ID of the belonged router.
port_id	No	String	Specifies the port ID.
fixed_ip_address	No	String	Specifies the private IP address of the associated port.
tenant_id	No	String	Specifies the project ID.
limit	String	No	Specifies the number of items displayed on each page.
marker	String	No	Specifies the ID of the last item on the previous page. If the marker value is invalid, error code 400 will be returned.

Parameter	Mandatory	Type	Description
page_reverse	Boolean	No	Specifies the page direction. The value can be <b>True</b> or <b>False</b> .

Example:

```
GET https://{Endpoint}/v2.0/floatingips?id={fip_id}&router_id={router_id}&floating_network_id={net_id}&floating_ip_address={floating_ip}&port_id={port_id}&fixed_ip_address={fixed_ip}&tenant_id={tenant_id}
```

## Request Message

None

## Response Message

**Table 8-6** Response parameter

Parameter	Type	Description
floatingips	Array of <b>floatingip</b> objects	Specifies the floating IP address list. For details, see <a href="#">Table 8-7</a> .
floatingips_links	Array of <b>floatingips_link</b> objects	Specifies the floating IP address object list. For details, see <a href="#">Table 8-8</a> .

**Table 8-7 floatingip objects**

Parameter	Type	Description
status	String	Specifies the floating IP address status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> . <ul style="list-style-type: none"><li>• <b>DOWN</b> indicates that the floating IP address has not been bound.</li><li>• <b>ACTIVE</b> indicates that the floating IP address has been bound.</li><li>• <b>ERROR</b> indicates that the floating IP address is abnormal.</li></ul>
id	String	Specifies the floating IP address ID.
project_id	String	Specifies the project ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.
dns_name	String	Specifies the DNS name. This parameter is available only in the <b>CN South-Guangzhou</b> region.
dns_domain	String	Specifies the DNS domain. This parameter is available only in the <b>CN South-Guangzhou</b> region.

Parameter	Type	Description
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

**Table 8-8** floatingips\_link object

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

### Example:

#### Example request

```
GET https://{Endpoint}/v2.0/floatingips?limit=1
```

#### Example response

```
{
  "floatingips": [
    {
      "id": "03a9abc0-bd98-4cb1-b0bd-58dda3dfd675",
      "status": "DOWN",
      "router_id": null,
      "tenant_id": "b3292dde618e40408e30cd87455a0652",
      "project_id": "b3292dde618e40408e30cd87455a0652",
      "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
      "fixed_ip_address": null,
      "floating_ip_address": "49.4.29.131",
      "port_id": null,
      "created_at": "2020-04-21T13:22:15",
      "updated_at": "2020-04-21T13:22:17"
    }
  ],
  "floatingips_links": [
    {
      "href": "https://vpc.cn-north-1.myhuaweicloud.com/v2.0/floatingips?limit=1&marker=03a9abc0-bd98-4cb1-b0bd-58dda3dfd675",
      "rel": "next"
    }
  ]
}
```

```
"href": "https://vpc.cn-north-1.myhuaweicloud.com/v2.0/floatingips?limit=1&marker=03a9abc0-  
bd98-4cb1-b0bd-58dda3dfd675&page_reverse=true",  
"rel": "previous"  
}  
]  
}
```

See [Status Codes](#).

## Error Code

See [Error Codes](#).

### 8.1.2.2 Querying a Floating IP Address

#### Function

This API is used to query details about a specified floating IP address, including the floating IP address status, ID of the router to which the floating IP address belongs, and external network ID of the floating IP address.

#### URI

GET /v2.0/floatingips/{floatingip\_id}

#### Request Message

None

#### Response Message

Table 8-9 Response parameter

Parameter	Type	Description
floatingip	Object	Specifies the floating IP address list. For details, see <a href="#">Table 8-10</a> .

**Table 8-10 floatingip** objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> . <ul style="list-style-type: none"><li>• <b>DOWN</b> indicates that the floating IP address has not been bound.</li><li>• <b>ACTIVE</b> indicates that the floating IP address has been bound.</li><li>• <b>ERROR</b> indicates that the floating IP address is abnormal.</li></ul>
id	String	Specifies the floating IP address ID.
project_id	String	Specifies the project ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.
dns_name	String	Specifies the DNS name. This parameter is available only in the <b>CN South-Guangzhou</b> region.
dns_domain	String	Specifies the DNS domain. This parameter is available only in the <b>CN South-Guangzhou</b> region.

Attribute	Type	Description
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

## Example:

Example request

```
GET https://{Endpoint}/v2.0/floatingips/1a3a2818-d9b4-4a9c-8a19-5252c499d1cd
```

Example response

```
{
  "floatingip": {
    "id": "1a3a2818-d9b4-4a9c-8a19-5252c499d1cd",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "99.99.99.84",
    "port_id": null,
    "created_at": "2017-10-19T12:21:28",
    "updated_at": "2018-07-30T12:52:13"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

### 8.1.2.3 Assigning a Floating IP Address

#### Function

When assigning a floating IP address, you need to obtain the external network ID **floating\_network\_id** of the floating IP address.

You can use **GET /v2.0/networks?router:external=True** or run the **neutron net-external-list** command to obtain the UUID of the external network required for assigning a floating IP address.

## URI

POST /v2.0/floatingips

## Request Message

**Table 8-11** Request parameter

Parameter	Type	Mandatory	Description
floatingip	Object	Yes	Specifies the floating IP address list. For details, see <a href="#">Table 8-12</a> .

**Table 8-12** floatingip objects

Parameter	Mandatory	Type	Description
floating_ip_address	No	String	Specifies the floating IP address.
floating_network_id	Yes	String	Specifies the external network ID. You can only use fixed external network. You can use <b>GET /v2.0/networks?router:external=True</b> or <b>GET /v2.0/networks?name={floating_network}</b> or run the <b>neutron net-external-list mode</b> command to obtain information about the external network.
port_id	No	String	Specifies the port ID.
fixed_ip_address	No	String	Specifies the private IP address of the associated port.

## Response Message

**Table 8-13** Response parameter

Parameter	Type	Description
floatingip	Object	Specifies the floating IP address list. For details, see <a href="#">Table 8-14</a> .

**Table 8-14** floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> . <ul style="list-style-type: none"><li>• <b>DOWN</b> indicates that the floating IP address has not been bound.</li><li>• <b>ACTIVE</b> indicates that the floating IP address has been bound.</li><li>• <b>ERROR</b> indicates that the floating IP address is abnormal.</li></ul>
id	String	Specifies the floating IP address ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
dns_name	String	Specifies the DNS name. This parameter is available only in the <b>CN South-Guangzhou</b> region.
dns_domain	String	Specifies the DNS domain. This parameter is available only in the <b>CN South-Guangzhou</b> region.

## Example:

### Example request

POST https://{Endpoint}/v2.0/floatingips

```
{
  "floatingip": {
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975"
  }
}
```

### Example response

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "88.88.215.205",
    "port_id": null,
    "created_at": "2018-09-20T02:10:02",
    "updated_at": "2018-09-20T02:10:02"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.2.4 Updating a Floating IP Address

### Function

This API is used to update a floating IP address.

During the update, the ID of the floating IP address must be provided in the URL.

If **port\_id** is left blank, the floating IP address has been unbound from the port.

Restrictions

When you bind a floating IP address, if the floating IP address is in the **error** state, try unbinding the address first.

You are not allowed to bind a floating IP address that has been bound to a port to another port. You must first unbind the IP address from its original port and bind it to the required port.

### URI

PUT /v2.0/floatingips/{floatingip\_id}

[Table 8-15](#) describes the parameters.

**Table 8-15** Parameter description

Parameter	Mandatory	Type	Description
floatingip_id	Yes	String	Specifies the floating IP address ID.  This parameter is not required when you assign a floating IP address. This parameter is mandatory when you query, update, or delete a floating IP address.

### Request Message

**Table 8-16** Request parameter

Parameter	Type	Mandatory	Description
floatingip	Object	Yes	Specifies the floating IP address list. For details, see <a href="#">Table 8-17</a> .

**Table 8-17 floatingip** objects

Parameter	Mandatory	Type	Description
port_id	No	String	Specifies the port ID.

## Response Message

**Table 8-18** Response parameter

Parameter	Type	Description
floatingip	Object	Specifies the floating IP address list. For details, see <a href="#">Table 8-19</a> .

**Table 8-19 floatingip** objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> . <ul style="list-style-type: none"><li>• <b>DOWN</b> indicates that the floating IP address has not been bound.</li><li>• <b>ACTIVE</b> indicates that the floating IP address has been bound.</li><li>• <b>ERROR</b> indicates that the floating IP address is abnormal.</li></ul>
id	String	Specifies the floating IP address ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.

Attribute	Type	Description
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.
dns_name	String	Specifies the DNS name. This parameter is available only in the <b>CN South-Guangzhou</b> region.
dns_domain	String	Specifies the DNS domain. This parameter is available only in the <b>CN South-Guangzhou</b> region.

## Example:

### Example request 1 (Binding a floating IP address to a port)

```
PUT https://{Endpoint}/v2.0/floatingips/b997e0d4-3359-4c74-8f88-bc0af81cd5a2
```

```
{
  "floatingip": {
    "port_id": "f91f5763-c5a2-4458-979d-61e48b3c3fac"
  }
}
```

### Example response 1 (Binding a floating IP address to a port)

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": "192.168.10.3",
    "floating_ip_address": "88.88.215.205",
    "port_id": "00587256-27e3-489b-96bf-ea80c1da4aeb",
    "created_at": "2018-09-20T02:10:02",
    "updated_at": "2018-09-20T02:10:07"
  }
}
```

### Example request 2 (Unbinding a floating IP address from a port)

```
PUT https://{Endpoint}/v2.0/floatingips/b997e0d4-3359-4c74-8f88-bc0af81cd5a2
```

```
{
  "floatingip": {
    "port_id": null
  }
}
```

Example response 2 (Unbinding a floating IP address from a port)

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "88.88.215.205",
    "port_id": null,
    "created_at": "2018-09-20T02:10:02",
    "updated_at": "2018-09-20T02:10:07"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.2.5 Deleting a Floating IP Address

### Function

This API is used to delete a floating IP address.

### URI

DELETE /v2.0/floatingips/{floatingip\_id}

[Table 8-20](#) describes the parameters.

**Table 8-20** Parameter description

Parameter	Mandatory	Type	Description
floatingip_id	Yes	String	Specifies the floating IP address ID.

### Request Message

None

### Response Message

None

## Example:

Example request

```
DELETE https://{Endpoint}/v2.0/floatingips/a95ec431-8473-463b-aede-34fb048ee3a7
```

Example response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# A Appendix

## A.1 VPC Monitoring Metrics

### Description

This section describes monitoring metrics reported by VPC to Cloud Eye as well as their namespaces and dimensions. You can use APIs provided by Cloud Eye to query the monitoring metrics of the monitored object and alarms generated for VPC.

### Namespace

SYS.VPC

### Metrics

**Table A-1** EIP and Bandwidth metrics

Metric	Metric Name	Description	Value Range	Measurement Object & Dimension	Monitoring Interval (Raw Data)
upstream_bandwidth	Outbound Bandwidth	Network rate of outbound traffic (Previously called "Upstream Bandwidth") Unit: bit/s	$\geq 0$ bit/s	Object: Bandwidth or EIP Dimension <sup>a</sup> : bandwidth_id, publicip_id	1 minute

Metric	Metric Name	Description	Value Range	Measurement Object & Dimension	Monitoring Interval (Raw Data)
downstream_bandwidth	Inbound Bandwidth	Network rate of inbound traffic (Previously called "Downstream Bandwidth") Unit: bit/s	$\geq 0$ bit/s	Object: Bandwidth or EIP Dimension: bandwidth_id, publicip_id	1 minute
upstream_bandwidth_usage	Outbound Bandwidth Usage	Usage of outbound bandwidth in the unit of percent.	0% to 100%	Object: Bandwidth or EIP Dimension: bandwidth_id, publicip_id	1 minute
upstream	Outbound Traffic	Network traffic going out of the cloud platform (Previously called "Upstream Traffic") Unit: byte	$\geq 0$ bytes	Object: Bandwidth or EIP Dimension: bandwidth_id, publicip_id	1 minute
downstream	Inbound Traffic	Network traffic going into the cloud platform (Previously called "Downstream Traffic") Unit: byte	$\geq 0$ bytes	Object: Bandwidth or EIP Dimension: bandwidth_id, publicip_id	1 minute

Metric	Metric Name	Description	Value Range	Measurement Object & Dimension	Monitoring Interval (Raw Data)
<p><b>a:</b> If a service has multiple dimensions, all dimensions are mandatory when you use APIs to query the metrics.</p> <ul style="list-style-type: none"> <li>Query a monitoring metric: dim.0=bandwidth_id,530cd6b0-86d7-4818-837f-935f6a27414d&amp;dim.1=publicip_id,3773b058-5b4f-4366-9035-9bbd9964714a</li> <li>Query monitoring metrics in batches: "dimensions": [           <pre>{             "name": "bandwidth_id",             "value": "530cd6b0-86d7-4818-837f-935f6a27414d"           }           {             "name": "publicip_id",             "value": "3773b058-5b4f-4366-9035-9bbd9964714a"           }         ],</pre> </li> </ul>					

## Dimension

Key	Value
publicip_id	Specifies the EIP ID.
bandwidth_id	Specifies the bandwidth ID.

## A.2 Obtaining a Project ID

### Scenarios

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

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

### Obtain the Project ID by Calling an API

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

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

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

```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "project_name",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
      },
      "id": "a4a5d4098fb4474fa22cd05f897d6b99",
      "enabled": true
    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}
```

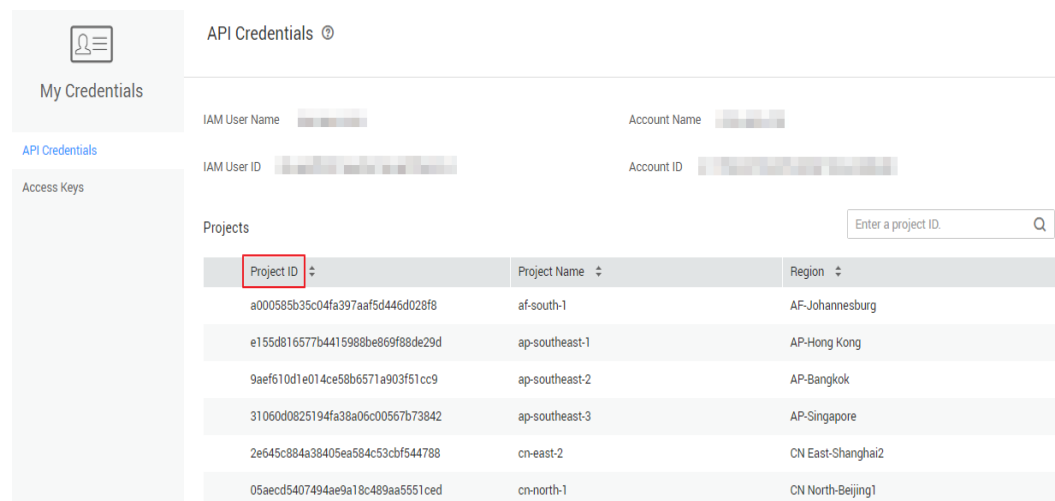
## Obtain a Project ID from the Console

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

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

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

**Figure A-1** Viewing the project ID



The screenshot shows the IAM console interface. On the left, there are navigation tabs for 'My Credentials', 'API Credentials', and 'Access Keys'. The main content area is titled 'API Credentials' and displays fields for 'IAM User Name', 'Account Name', 'IAM User ID', and 'Account ID'. Below these fields is a 'Projects' table with a search bar. The table has three columns: 'Project ID', 'Project Name', and 'Region'. The 'Project ID' column is highlighted with a red box. The table contains the following data:

Project ID	Project Name	Region
a000585b35c04fa397aaf5d446d028f8	af-south-1	AF-Johannesburg
e155d816577b4415988be869f88de29d	ap-southeast-1	AP-Hong Kong
9aef610d1e014ce58b6571a903f51cc9	ap-southeast-2	AP-Bangkok
31060d0825194fa38a06c00567b73842	ap-southeast-3	AP-Singapore
2e645c884a38405ea584c53cbf544788	cn-east-2	CN East-Shanghai2
05aec5407494ae9a18c489aa5551ced	cn-north-1	CN North-Beijing1

# B Change History

Released On	Description
2020-08-26	<p>This issue is the tenth official release, which incorporates the following change:</p> <ul style="list-style-type: none"><li>• Modified parameter types of <b>is_auto_renew</b> and <b>is_auto_pay</b> and added the <b>publicip_id</b> parameter in section <a href="#">Assigning a Yearly/Monthly EIP</a>.</li><li>• Deleted the description of API region restrictions and deleted the billing by traffic from the <b>charge_mode</b> parameter in section <a href="#">Assigning a Shared Bandwidth</a>.</li><li>• Deleted the <b>enable_bandwidth_rules</b>, <b>rule_quota</b>, and <b>bandwidth_rules</b> fields and the <b>bandwidth_rules</b> object table in section <a href="#">Adding an EIP to a Shared Bandwidth</a>.</li><li>• Added parameter <b>publicip_type</b> in section <a href="#">Removing an EIP from a Shared Bandwidth</a>.</li><li>• Modified the <b>is_auto_pay</b> parameter type and added the <b>publicip_id</b> parameter in section <a href="#">Updating a Yearly/Monthly Bandwidth</a>.</li><li>• Added section <a href="#">Application Examples</a>.</li></ul>
2020-08-06	<p>This issue is the ninth official release, which incorporates the following change:</p> <p>Adjusted the document structure and added section <a href="#">Out-of-Date APIs</a>.</p>

Released On	Description
2020-07-08	<p>This issue is the eighth official release, which incorporates the following change:</p> <ul style="list-style-type: none"> <li>• Added parameters <b>enable_bandwidth_rules</b>, <b>rule_quota</b>, and <b>bandwidth_rules</b> and object <b>bandwidth_rules</b> in sections <a href="#">Bandwidth</a> and <a href="#">Bandwidth (V2.0)</a>.</li> <li>• Added parameters <b>limit</b>, <b>marker</b>, and <b>page_reverse</b> in section <a href="#">Querying Floating IP Addresses</a>.</li> <li>• Added parameter <b>project_id</b> in sections <a href="#">Querying Floating IP Addresses</a> and <a href="#">Querying a Floating IP Address</a>.</li> <li>• Deleted parameters <b>dns_name</b> and <b>dns_domain</b> in sections <a href="#">Querying Floating IP Addresses</a>, <a href="#">Querying a Floating IP Address</a>, <a href="#">Assigning a Floating IP Address</a>, and <a href="#">Updating a Floating IP Address</a>.</li> <li>• Deleted parameters <b>created_at</b> and <b>updated_at</b> in sections <a href="#">Assigning a Floating IP Address</a> and <a href="#">Updating a Floating IP Address</a>.</li> <li>• Modified request examples and response examples in sections <a href="#">Elastic IP</a>, <a href="#">Bandwidth</a>, <a href="#">Bandwidth (V2.0)</a>, and <a href="#">EIP Tag Management</a>.</li> </ul>
2020-06-02	<p>This issue is the seventh official release, which incorporates the following change:</p> <ul style="list-style-type: none"> <li>• Adjusted the table in section <a href="#">Permissions Policies and Supported Actions</a>.</li> <li>• Added description about API Gateway error codes in section <a href="#">Error Codes</a>.</li> </ul>

Released On	Description
2020-05-13	<p>This issue is the sixth official release, which incorporates the following change:</p> <ul style="list-style-type: none"> <li>• Modified the <b>Example response 2 (IPv6 EIP with shared bandwidth)</b> in section <a href="#">Assigning an EIP</a>.</li> <li>• Added parameter <b>public_ip_address</b> in section <a href="#">Querying an EIP</a>.</li> <li>• Modified the following content in section <a href="#">Assigning a Yearly/Monthly EIP</a>: <ul style="list-style-type: none"> <li>– Added restrictions on the <b>charge_mode</b> parameter.</li> <li>– Changed the value range of parameter <b>period_num</b>.</li> <li>– Change parameter <b>publicip_type</b> to <b>type</b>.</li> <li>– Added parameter <b>enterprise_project_id</b>.</li> </ul> </li> <li>• Added the <b>created_at</b> and <b>updated_at</b> parameters in sections <a href="#">Querying a Bandwidth</a>, <a href="#">Querying Bandwidths</a>, <a href="#">Updating a Bandwidth</a>, <a href="#">Assigning a Shared Bandwidth</a>, and <a href="#">Updating a Yearly/Monthly Bandwidth</a>.</li> <li>• Added parameter <b>charge_mode</b> in sections <a href="#">Querying Bandwidths</a>, <a href="#">Updating a Bandwidth</a>, <a href="#">Assigning a Shared Bandwidth</a>, <a href="#">Adding an EIP to a Shared Bandwidth</a>, and <a href="#">Updating a Yearly/Monthly Bandwidth</a>.</li> <li>• Modified the <b>charge_mode</b> parameter description and the response example in section <a href="#">Querying a Bandwidth</a>.</li> <li>• Added the <b>share_type</b> parameter and modified the response example in section <a href="#">Querying Bandwidths</a>.</li> <li>• Added the <b>status</b> parameter and modified the request example in section <a href="#">Updating a Bandwidth</a>.</li> <li>• Added the <b>floatingips_links</b> parameter and modified the response example in section <a href="#">Querying Floating IP Addresses</a>.</li> <li>• Modified the response example in section <a href="#">Assigning a Shared Bandwidth</a>.</li> <li>• Added the <b>type</b> parameter and modified the request example in section <a href="#">Adding an EIP to a Shared Bandwidth</a>.</li> <li>• Modified the response example in section <a href="#">Updating a Yearly/Monthly Bandwidth</a>.</li> </ul>
2020-04-21	<p>This issue is the fifth official release, which incorporates the following change:</p> <p>Added <a href="#">Quota</a>.</p>
2020-02-24	<p>This issue is the fourth official release, which incorporates the following change:</p> <ul style="list-style-type: none"> <li>• Added section <a href="#">EIP Tag Management</a>.</li> <li>• Added error codes related to resource tags in section <a href="#">Error Codes</a>.</li> </ul>

Released On	Description
2020-01-20	This issue is the third official release, which incorporates the following change: Modified content in <a href="#">Introduction</a> .
2019-12-26	This issue is the second official release, which incorporates the following change: Added section <a href="#">EIP Tags</a> .
2019-12-10	This issue is the first official release.