Elastic IP

API Reference

Issue 02

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1 Before You Start

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, NAT gateways, or load balancers. 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 *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**.

1.3 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?**

1.4 Concepts

- Account

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

- User

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

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

- Region

  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. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

- Enterprise project

  Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated.

  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.

EIP APIs

Table 2-1 EIP APIs

Type	Description
Elastic IP	APIs for assigning, querying, updating, and releasing EIPs
Bandwidth	APIs for querying and updating bandwidth
Quota	API for querying quota values
EIP Tag Management	APIs for adding tags to EIPs as well as querying and deleting EIP tags

Native OpenStack APIs

Table 2-2 Native OpenStack APIs

Type	Description
API Version Information	APIs for querying all available API versions and displaying the results in pages.
Floating IP Address	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 Regions and Endpoints. For example, the endpoint of IAM in region **Dublin** is **iam.myhuaweicloud.eu**.
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the **resource-path** of the API used to obtain a user token is **/v3/auth/tokens**.

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 *Parameter name*=*Parameter value*. For example, **?limit=10** indicates that a maximum of 10 data records will be displayed.

For example, to obtain an IAM token in the **Dublin** region, obtain the endpoint of IAM (**iam.myhuaweicloud.eu**) 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.myhuaweicloud.eu/v3/auth/tokens
```

NOTE

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

Request Methods

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

Table 3-2 HTTP methods

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

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

```
POST https://iam.myhuaweicloud.eu/v3/auth/tokens
```


Request Header

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

Common request header fields are as follows.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of *Hostname:Port number*. If the port number is not specified, the default port is used. The default port number for **https** is **443**.	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value **application/json** is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in **Obtaining a Project ID**.	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbaa340f9c0f4

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

NOTE

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

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

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

```
POST https://iam.myhuaweicloud.eu/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 *xxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from Regions and Endpoints.

NOTE

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

```
POST https://iam.myhuaweicloud.eu/v3/auth/tokens
Content-Type: application/json
```



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

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

3.2 Authentication

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

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

Token Authentication

NOTE

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

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

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

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



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

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

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

AK/SK Authentication

NOTE

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

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

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

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

NOTE

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

3.3 Response

Status Code

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

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

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

Response Header

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

Figure 3-1 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

Figure 3-1 Header fields of the response to the request for obtaining a user token

(Optional) Response Body

The body of a response is often returned in 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 Job Status

4.1.1 Querying Job Status

Function

This API is used to query job status.

URI

GET /v1/{project_id}/jobs/{job_id}

Table 4-1 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID
job_id	Yes	String	Job ID returned by the batch operation

Request Parameters

None

Response Parameters

Status code: 200

Table 4-2 Response body parameters

Parameter	Type	Description
job_id	String	Job ID
job_type	String	Job type
begin_time	String	Creation start time
end_time	String	Creation end time
status	String	Job status
error_code	String	Error code
fail_reason	String	Error message
entities	**SubJobsInfo** object	Job information body, which is the loop body.

Table 4-3 SubJobsInfo

Parameter	Type	Description
sub_jobs	Array of objects	Sub-job information. The type is the same as that of the main job.

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation

```
{
  "job_id" : "ff808082843684110184e155fdb36461",
  "job_type" : "createBatchPublicip",
  "begin_time" : "2022-12-05T08:10:19.951Z",
  "end_time" : "2022-12-05T08:10:21.864Z",
  "status" : "SUCCESS",
  "error_code" : null,
  "fail_reason" : null,
  "entities" : {
    "sub_jobs" : [ ]
  }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2 EIP

4.2.1 Assigning an EIP

Function

This API is used to assign an EIP.

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.

URI

POST /v1/{project_id}/publicips

Table 4-4 describes the parameters.

Table 4-4 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Request Parameters

Table 4-5 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-6 Request body parameter

Name	Mandatory	Type	Description
publicip	Yes	**publicip** object	Specifies the EIP object. For details, see **Table 4-7**.
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth object. For details, see **Table 4-8**.
enterprise_project_id	No	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When you assign an EIP, associate an enterprise project ID with the EIP. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE**

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

Name	Mandatory	Type	Description
type	Yes	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

Name	Mandatory	Type	Description
ip_address	No	String	• Specifies the EIP to be assigned. The system automatically assigns an EIP if you do not specify it. • The value must be a valid IPv4 address in the available IP address range.
alias	No	String	• Specifies the EIP name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
port_id	No	String	• Specifies the port ID. The EIP to be assigned is bound to this port. • The value must be an ID of an existing port. If the port does not exist or has been bound to an EIP, an error message is displayed.

Table 4-8 Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	No	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • This parameter is mandatory when **share_type** is set to **PER**. This parameter will be ignored when **share_type** is set to **WHOLE** with an ID specified.

Name	Mandatory	Type	Description
size	No	Integer	• Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 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.) • This parameter is mandatory when **share_type** is set to **PER**. This parameter will be ignored when **share_type** is set to **WHOLE** with an ID specified. • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: – 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). – The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with

Name	Mandatory	Type	Description
			1000 Mbit/s included). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
id	No	String	• Specifies the bandwidth ID. You can specify an existing shared bandwidth when assigning an EIP. • The value can be the ID of the shared bandwidth whose type is set to **WHOLE**.
share_type	Yes	String	• Specifies the bandwidth type. • Possible values are as follows: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • If this parameter is set to **WHOLE**, the bandwidth ID must be specified.
charge_mode	No	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • The value **bandwidth** indicates that you will be billed by bandwidth, and the value **traffic** indicates that you will be billed by traffic.

- Example request (IPv4 EIP with dedicated bandwidth)

```
POST https://{Endpoint}/v1/{project_id}/publicips

{
    "publicip": {
        "type": "5_bgp",
        "ip_version": 4
    },
    "bandwidth": {
        "name": "bandwidth123",
        "size": 10,
        "share_type": "PER"
    }
}
```

Response Message

- Response parameter

Table 4-9 Response parameter

Name	Type	Description
publicip	**publicip** object	Specifies the EIP object. For details, see **Table 4-10**.

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

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

Name	Type	Description
status	String	• Specifies the EIP status. • Possible values are as follows: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **PENDING_UPDATE** (Updating) – **NOTIFYING** (Assigning) – **NOTIFY_DELETE** (Release) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** (Exceptions)
type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.
public_ip_address	String	Specifies the obtained EIP if only IPv4 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**. • **4**: IPv4 • **6**: IPv6
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).
alias	String	Specifies the EIP name.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When you assign an EIP, associate an enterprise project ID with the EIP. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE**

- Example response (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"
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2.2 Querying an EIP

Function

This API is used to query a specific EIP.

URI

GET /v1/{project_id}/publicips/{publicip_id}

Table 4-11 describes the parameters.

Table 4-11 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

  Table 4-12 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request

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

Response Message

- Response parameter

Table 4-13 Response parameter

Name	Type	Description
publicip	**publicip** object	Specifies the EIP object. For details, see **Table 4-14**.

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

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	• Specifies the EIP status. • Possible values are as follows: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **PENDING_UPDATE** (Updating) – **NOTIFYING** (Assigning) – **NOTIFY_DELETE** (Releasing) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** (Exceptions)
profile	**profile** object	Specifies the additional parameters, including the order ID and product ID. For details, see **Table 4-15**.

Name	Type	Description
type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.
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	Specifies the IP address version. The value can be **4** or **6**. • **4**: IPv4 • **6**: IPv6
private_ip_address	String	• Specifies the private IP address bound to the EIP. • This parameter is returned only if the private IP address is bound to the EIP.
port_id	String	• Specifies the port ID. • This parameter is returned only when a port is associated with the EIP.
tenant_id	String	Specifies the project ID.

Name	Type	Description
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).
bandwidth_share_type	String	• Specifies the EIP bandwidth type. • The value can be **PER** or **WHOLE**. – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth
bandwidth_name	String	Specifies the bandwidth name.
alias	String	Specifies the EIP name.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When assigning an EIP, you need to associate an enterprise project ID with the EIP. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the *Enterprise Management User Guide*.

Name	Type	Description
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.
allow_share_bandwidth_types	Array of strings	• Specifies the types of the shared bandwidth to which the EIP can be added. • If the list is empty, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types.

Table 4-15 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": "xxxxxxxxx"
      },
      "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",
        "ip_version": 4
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2.3 Querying EIPs

Function

This API is used to query EIPs.

URI

GET /v1/{project_id}/publicips

Table 4-16 describes the parameters.

Table 4-16 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Name	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.
port_id	No	Array of strings	Specifies the port ID of the EIP.
public_ip_address	No	Array of strings	Specifies the obtained EIP if only IPv4 EIPs are available, or the IPv4 EIP corresponding to the IPv6 EIP if IPv6 EIPs are available.
private_ip_address	No	Array of strings	• Specifies the private IP address bound to the EIP. • This parameter is returned only if the private IP address is bound to the EIP.
id	No	Array of strings	Specifies the ID of the EIP, which uniquely identifies the EIP.

Request Message

- Request parameter

Table 4-17 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request
  GET https://{Endpoint}/v1/{project_id}/publicips?limit={limit}&marker={marker}

Response Message

- Response parameter

Table 4-18 Response parameter

Name	Type	Description
publicips	Array of **publicips** objects	Specifies the EIP object. For details, see **Table 4-19**.

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

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	• Specifies the EIP status. • Possible values are as follows: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **PENDING_UPDATE** (Updating) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **ERROR** (Exceptions)
profile	Object	Specifies the additional parameters, including the order ID and product ID. For details, see **Table 4-20**.

Name	Type	Description
type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.
public_ip_address	String	Specifies the obtained EIP if only IPv4 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 **4** or **6**. • **4**: IPv4 • **6**: IPv6
private_ip_address	String	• Specifies the private IP address bound to the EIP. • This parameter is returned only if the private IP address is bound to the EIP.
port_id	String	• Specifies the port ID. • This parameter is returned only when a port is associated with the EIP.
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned.

Name	Type	Description
bandwidth_id	String	Specifies the ID of the EIP bandwidth.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
bandwidth_share_type	String	• Specifies the EIP bandwidth type. • The value can be **PER** or **WHOLE**. – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth
bandwidth_name	String	Specifies the bandwidth name.
alias	String	Specifies the EIP name.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When assigning an EIP, you need to associate an enterprise project ID with the EIP. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the *Enterprise Management User Guide*.

Name	Type	Description
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.
allow_share_bandwidth_types	Array of strings	• Specifies the types of the shared bandwidth to which the EIP can be added. • If the list is empty, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types.

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

```
{
   "publicips": [
      {
         "id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
         "status": "DOWN",
         "profile": {
         "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",
            "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**.

4.2.4 Updating an EIP

Function

This API is used to bind an EIP to a NIC, or unbind an EIP from a NIC.

URI

PUT /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 **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

Table 4-22 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-23 Request parameter

Name	Mandatory	Type	Description
publicip	Yes	**publicip** object	Specifies the EIP object. For details, see **Table 4-24**.

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

Name	Mandatory	Type	Description
port_id	No	String	• Specifies the port ID. • 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.

- 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"
    }
}
```

Response Message

- Response parameter

Table 4-25 Response parameter

Name	Type	Description
publicip	**publicip** object	Specifies the EIP object. For details, see **Table 4-26**.

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

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	• Specifies the EIP status. • Possible values are as follows: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **PENDING_UPDATE** (Updating) – **NOTIFYING** (Assigning) – **NOTIFY_DELETE** (Releasing) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** (Exceptions)

Name	Type	Description
profile	**profile** object	Specifies the additional parameters, including the order ID and product ID. For details, see **Table 4-27**.
type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.
public_ip_address	String	Specifies the obtained EIP if only IPv4 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 **4** or **6**. • **4**: IPv4 • **6**: IPv6
private_ip_address	String	• Specifies the private IP address bound to the EIP. • This parameter is returned only when a port is associated with the EIP.
port_id	String	• Specifies the port ID. • This parameter is returned only when a port is associated with the EIP.

Name	Type	Description
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).
bandwidth_share_type	String	• Specifies the EIP bandwidth type. • The value can be **PER** or **WHOLE**. – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth
bandwidth_name	String	Specifies the bandwidth name.
alias	String	Specifies the EIP name.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When you assign an EIP, associate an enterprise project ID with the EIP. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the *Enterprise Management User Guide*.

Table 4-27 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 (Binding an EIP to a NIC)

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "ACTIVE",
    "profile": {},
    "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,
    "bandwidth_name": "bandwidth-2aef",
    "enterprise_project_id": "0",
    "bandwidth_share_type": "PER",
    "bandwidth_id": "7a258fff-10d8-44b8-8124-c59079eb8f4c"
  }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2.5 Releasing an EIP

Function

This API is used to release an EIP.

URI

DELETE /v1/{project_id}/publicips/{publicip_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 **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

  Table 4-29 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request

```
DELETE https://{Endpoint}/v1/{project_id}/publicips/{publicip_id}
```

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 Batch Operations on EIPs

4.3.1 Assigning EIPs in Batches

Function

This API is used to assign EIPs in batches.

URI

POST /v2/{project_id}/batchpublicips

Table 4-30 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

Table 4-31 Request body parameters

Parameter	Mandatory	Type	Description
bandwidth	Yes	**BatchBandwidth** object	Bandwidth information
publicip	Yes	**BatchPublicIp** object	EIP information
publicip_number	Yes	Integer	Number of EIPs to be created in batches
enterprise_project_id	Yes	String	Enterprise project ID

Table 4-32 BatchBandwidth

Parameter	Mandatory	Type	Description
charge_mode	No	String	• Whether the billing is based on traffic or bandwidth For IPv6 addresses, the default value is **bandwidth** outside China and is **traffic** in China. If the value is **traffic**, the billing is based on traffic. Enumerated values: • **bandwidth** • **traffic**
name	No	String	• Bandwidth name • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • This parameter is mandatory if **share_type** is set to **PER**. This parameter will be ignored if **share_type** is set to **WHOLE** with an ID specified. Minimum length: 1 character Maximum length: 64 characters
share_type	No	String	• Bandwidth type. • The value can be **PER** or **WHOLE**. IPv6 addresses do not support bandwidth whose type is **WHOLE**. Enumerated values: • **PER** • **WHOLE**

Parameter	Mandatory	Type	Description
size	Yes	Integer	• Bandwidth size (Mbit/s). • 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.) • This parameter is mandatory if **share_type** is set to **PER**. This parameter will be ignored if **share_type** is set to **WHOLE** with an ID specified. • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: – 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). – 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). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
id	No	String	• Bandwidth ID. You can specify an existing shared bandwidth ID when assigning an EIP that uses the bandwidth whose type is **WHOLE**. • Value: ID of the bandwidth of type **WHOLE**

Table 4-33 BatchPublicIp

Parameter	Mandatory	Type	Description
id	No	String	Assigning an EIP by specifying an ID
ip_version	No	String	EIP version, for example, IPv4 and IPv6. The default value is **ipv4**.
enterprise_project_id	No	String	Enterprise project ID
tags	No	Array of strings	EIP tag
profile	No	**BatchProfile** object	Order information

Table 4-34 BatchProfile

Parameter	Mandatory	Type	Description
user_id	No	String	User ID
product_id	No	String	Product ID
region_id	No	String	Region ID
order_id	No	String	Order ID

Response Parameters

Status code: 200

Table 4-35 Response body parameters

Parameter	Type	Description
job_id	String	Job ID. The netAPI needs to be called to view the job execution status. netAPI: /v1/{project_id}/jobs/{job_id}

Example Request

```
POST /v2/{project_id}/batchpublicips

{
```



```
 "bandwidth" : {
   "name" : "",
   "size" : 5,
   "charge_mode" : "bandwidth",
   "share_type" : "PER"
 },
 "publicip" : {
   "type" : "5_bgp",
   "tags" : [ ]
 },
 "publicip_number" : 2,
 "enterprise_project_id" : 0
}
```

Example Response

Status code: 200

OK

```
{
  "job_id" : "ff8080828436722c0184cdb88e9200a5"
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.3.2 Releasing EIPs in Batches

Function

This API is used to release EIPs in batches.

URI

DELETE /v2/{project_id}/batchpublicips

Table 4-36 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

Table 4-37 Request body parameters

Parameter	Mandatory	Type	Description
publicip_ids	Yes	Array of strings	EIP IDs

Response Parameters

Status code: 200

Table 4-38 Response body parameters

Parameter	Type	Description
job_ids	Array of strings	Job ID. The netAPI needs to be called to view the job execution status. netAPI: /v1/{project_id}/jobs/{job_id}

Example Request

```
DELETE /v2/{project_id}/batchpublicips

{
  "publicip_ids" : [ "59e55560-4d2c-40d5-b757-0f5c97b701e4", "e83cae01-e68f-4627-84b3-d2d5c4c836bd" ]
}
```

Example Response

Status code: 200

OK

```
{
  "job_ids" : [ "ff8080828436722c0184cdb88e9200a5" ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.3.3 Unbinding EIPs in Batches

Function

This API is used to unbind EIPs in batches.

URI

PATCH /v2/{project_id}/batchpublicips

Table 4-39 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

Table 4-40 Request body parameters

Parameter	Mandatory	Type	Description
publicip_ids	Yes	Array of strings	EIP IDs

Response Parameters

Status code: 200

Table 4-41 Response body parameters

Parameter	Type	Description
job_ids	Array of strings	Job ID. The netAPI needs to be called to view the job execution status. netAPI: /v1/{project_id}/jobs/{job_id}

Example Request

```
/v2/{project_id}/batchpublicips

{
  "publicip_ids" : [ "59e55560-4d2c-40d5-b757-0f5c97b701e4", "e83cae01-e68f-4627-84b3-d2d5c4c836bd" ]
}
```

Example Response

Status code: 200

OK

```
{
  "job_ids" : [ "ff8080828436722c0184cdb88e9200a5" ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.4 Bandwidth

4.4.1 Querying a Bandwidth

Function

This API is used to query details about a bandwidth.

URI

GET /v1/{project_id}/bandwidths/{bandwidth_id}

Table 4-42 describes the parameters.

Table 4-42 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 4-43 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request
  Get https://{Endpoint}//v1/{project_id}/bandwidths/{bandwidth_id}

Response Message

- Response parameter

Table 4-44 Response parameter

Name	Type	Description
bandwidth	**bandwidth** object	Specifies the bandwidth object.

Table 4-45 Description of the **bandwidth** field

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • Possible values are as follows: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth
publicip_info	Array of **publicip_info** objects	• Specifies information about the EIP that uses the bandwidth. For details, see **Table 4-46**. • The bandwidth, whose type is **WHOLE**, can be used by up to 20 EIPs. The bandwidth, whose type is **PER**, can be used by only one EIP.

Name	Type	Description
tenant_id	String	Specifies the project ID.
bandwidth_type	String	• Specifies the bandwidth type. • The value can be: – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP
charge_mode	String	• Specifies whether the billing is based on traffic or bandwidth. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). • When creating a bandwidth, associate the enterprise project ID with the bandwidth. • If this parameter is not specified, the default value is **0**, which indicates that the default enterprise project is used. **NOTE**
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)
created_at	String	• Specifies the time (UTC) when the bandwidth is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the bandwidth is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Name	Type	Description
enable_bandwidth_rules	boolean	• Specifies whether to enable QoS. • The value can be **true** or **false**.
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of **bandwidth_rules** objects	Specifies the bandwidth rules.
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.

Table 4-46 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 – **6**: IPv6
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

Table 4-47 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 **False** indicates that the configuration does not take effect.
egress_size	integer	• Specifies the maximum outbound bandwidth in Mbit/s. • The value range ranges from **0** to *n*, where *n* indicates the shared bandwidth size. If the value is set to **0**, the maximum bandwidth, that is the shared bandwidth size will be used.
egress_guarented_size	integer	• Specifies the guaranteed outbound bandwidth in Mbit/s. • The value ranges from **0** to *x*, where *x* indicates the remaining bandwidth.
publicip_info	Array of **publicip_info** objects	• Specifies the EIP associated with the bandwidth. • The bandwidth, whose type is set to **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is set to **PER**, can be used by only one EIP.

- Example response

```
{
 "bandwidth": {
  "id": "3cbd5ae9-368f-4bc8-8841-f2ecc322c64a",
  "name": "EIPResourceSetup_1553594229",
  "size": 5,
  "share_type": "PER",
  "publicip_info": [
   {
    "publicip_id": "22b02f40-b95f-465a-ae9b-7c8b0f042a41",
    "publicip_address": "10.xx.xx.62",
    "ip_version": 4,
    "publicip_type": "5_bgp",
   }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
  "enterprise_project_id": "0",
  "status": "NORMAL",
  "created_at": "2020-04-21T07:58:02Z",
  "updated_at": "2020-04-21T07:58:02Z",
  "enable_bandwidth_rules": false,
  "rule_quota": 0,
```

```
    "bandwidth_rules": [],
  }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.4.2 Querying Bandwidths

Function

This API is used to query bandwidths using search criteria.

URI

GET /v1/{project_id}/bandwidths

Table 4-48 describes the parameters.

Table 4-48 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Name	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.
share_type	No	String	• Specifies the bandwidth type. • Possible values are as follows: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • If this parameter is not set, the list of all bandwidths will be returned by default.

Name	Mandatory	Type	Description
enterprise_project_id	No	String	• Specifies the enterprise project ID. This field can be used to filter out the VPCs associated with a specified enterprise project. • The value is **0** or a string that contains a maximum of 36 characters 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 **all_granted_eps**. **NOTE**

Request Message

- Request parameter

  Table 4-49 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request

```
GET https://{Endpoint}/v1/{project_id}/bandwidths?limit={limit}&marker={marker}
```

Response Message

- Response parameter

  Table 4-50 Response parameter

Name	Type	Description
bandwidths	Array of **bandwidths** objects	Specifies the bandwidth objects. For details, see **Table 4-51**.

Table 4-51 Description of the **bandwidths** field

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size in Mbit/s. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • Possible values are as follows: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth If this parameter is not set, the list of all bandwidths will be returned by default.
publicip_info	Array of **publicip_info** objects	• Specifies the information about the EIP that uses the bandwidth. For details, see **Table 4-52**. • The bandwidth, whose type is **WHOLE**, can be used by multiple EIPs (up to 20 EIPs by default). The bandwidth, whose type is **PER**, can be used by only one EIP.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	• Specifies the bandwidth type. • The value can be: – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP

Name	Type	Description
charge_mode	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. To obtain the bandwidth bound to all enterprise projects of the user, set **all_granted_eps**. • When creating a bandwidth, associate the enterprise project ID with the bandwidth. **NOTE**
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)
created_at	String	• Specifies the time (UTC) when the bandwidth is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the bandwidth is updated. • Format: *yyyy-MM-ddTHH:mm:ss*
enable_bandwidth_rules	boolean	• Specifies whether to enable QoS. • The value can be **true** or **false**.
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.

Name	Type	Description
bandwidth_rules	Array of **bandwidth_rules** objects	Specifies the bandwidth rules.
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.

Table 4-52 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 – **6**: IPv6
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

Table 4-53 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 **False** indicates that the configuration does not take effect.
egress_size	integer	• Specifies the maximum outbound bandwidth in Mbit/s. • The value range ranges from **0** to *n*, where *n* indicates the shared bandwidth size. If the value is set to **0**, the maximum bandwidth, that is the shared bandwidth size will be used.
egress_guarented_size	integer	• Specifies the guaranteed outbound bandwidth in Mbit/s. • The value ranges from **0** to *x*, where *x* indicates the remaining bandwidth.
publicip_info	Array of **publicip_info** objects	• Specifies the EIP associated with the bandwidth. • The bandwidth, whose type is set to **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is set to **PER**, can be used by only one EIP.

- Example response

```
{
 "bandwidths": [
  {
   "id": "09b99c91-da7c-449f-94e2-f4934c5b2a71",
   "name": "vpngw-f632a7b0-ef50-4ac5-97e9-ddc56b3d5977",
   "size": 200,
   "share_type": "PER",
   "publicip_info": [
    {
     "publicip_id": "2a65923c-7133-415d-ae3b-cf9635a942c5",
     "publicip_address": "10.xx.xx.3",
     "ip_version": 4,
     "publicip_type": "5_bgp",
    }
   ],
   "tenant_id": "26ae5181a416420998eb2093aaed84d9",
   "bandwidth_type": "bgp",
   "charge_mode": "bandwidth",
   "billing_info": "",
   "enterprise_project_id": "0"
   "status": "NORMAL",
   "enable_bandwidth_rules": false,
   "rule_quota": 0,
```

```
  "bandwidth_rules": [],
},
{
  "id": "0a583ff1-b43e-4000-ade3-e7af0097f832",
  "name": "vpngw-7e880d5b-f458-40ad-a7e5-735c44cd8b7d",
  "size": 300,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "c754bc9a-16d5-4763-9674-d7561917aa80",
      "publicip_address": "10.xx.xx.9",
      "ip_version": 4,
      "publicip_type": "5_bgp",
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
  "billing_info": "",
  "enterprise_project_id": "0"
  "status": "NORMAL",
  "enable_bandwidth_rules": false,
  "rule_quota": 0,
  "bandwidth_rules": [],
},
{
  "id": "0a673f00-3640-4a13-949e-7049b2916baf",
  "name": "bandwidth123",
  "size": 10,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "cec7fb70-2f82-4561-bd83-2121fb642fdc",
      "publicip_address": "10.xx.xx.184",
      "ip_version": 4,
      "publicip_type": "5_bgp",
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
  "billing_info": "",
  "enterprise_project_id": "0"
  "status": "NORMAL",
  "enable_bandwidth_rules": false,
  "rule_quota": 0,
  "bandwidth_rules": [],
},
{
  "id": "0dde1eae-1783-46dc-998c-930fbe261ff9",
  "name": "bandwidth123",
  "size": 100,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "24232038-e178-40ad-80e4-5abb75db84be",
      "publicip_address": "10.xx.xx.101",
      "ip_version": 4,
      "publicip_type": "5_bgp",
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
  "billing_info": "",
  "enterprise_project_id": "0"
  "status": "NORMAL",
  "enable_bandwidth_rules": false,
  "rule_quota": 0,
```



```
    "bandwidth_rules": [],
  }
 ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.4.3 Updating a Bandwidth

Function

This API is used to update information about a bandwidth.

URI

PUT /v1/{project_id}/bandwidths/{bandwidth_id}

Table 4-54 describes the parameters.

Table 4-54 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 4-55 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-56 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-57**.

Table 4-57 Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	No	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). If the value is left blank, the name of the bandwidth is not changed. • Either parameter **name** or **size** must be specified.

Name	Mandatory	Type	Description
size	No	Integer	• Specifies the bandwidth size in Mbit/s. • The value ranges from 1 Mbit/s to 300 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. • Either parameter **name** or **size** must be specified. • If a decimal fraction (for example **10.2**) or a character string (for example **"10"**) is specified, the specified value will be automatically converted to an integer. • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: – 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). – 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). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
charge_mode	No	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • The value **bandwidth** indicates that you will be billed by bandwidth, and the value **traffic** indicates that you will be billed by traffic.

- Example request

```
PUT https://{Endpoint}/v1/{project_id}/bandwidths/{bandwidth_id}

{
   "bandwidth":
      {"name": "bandwidth123",
       "size": 10
```



```
    }
}
```

Response Message

- Response parameter

Table 4-58 Response parameter

Name	Type	Description
bandwidth	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-59**.

Table 4-59 Description of the **bandwidth** field

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size in Mbit/s. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • Possible values are as follows: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth
publicip_info	Array of **publicip_info** objects	• Specifies the information about the EIP that uses the bandwidth. For details, see **Table 4-60**. • The bandwidth, whose type is **WHOLE**, can be used by multiple EIPs (up to 20 EIPs by default). The bandwidth, whose type is **PER**, can be used by only one EIP.

Name	Type	Description
tenant_id	String	Specifies the project ID.
bandwidth_type	String	• Specifies the bandwidth type. • The value can be **bgp**, **sbgp**, or **share**. – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP
charge_mode	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. To obtain the bandwidth bound to all enterprise projects of the user, set **all_granted_eps**. • When creating a bandwidth, associate the enterprise project ID with the bandwidth. **NOTE**
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)
created_at	String	• Specifies the time (UTC) when the bandwidth is created. • Format: *yyyy-MM-ddTHH:mm:ss*

Name	Type	Description
updated_at	String	• Specifies the time (UTC) when the bandwidth is updated. • Format: *yyyy-MM-ddTHH:mm:ss*
enable_bandwidth_rules	boolean	• Specifies whether to enable QoS. • The value can be **true** or **false**.
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of **bandwidth_rules** objects	Specifies the bandwidth rules.
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • center • Edge site name This resource can only be associated with an EIP of the same region.

Table 4-60 publicip_info objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 – **6**: IPv6

Name	Type	Description
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

Table 4-61 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 **False** indicates that the configuration does not take effect.
egress_size	integer	• Specifies the maximum outbound bandwidth in Mbit/s. • The value range ranges from **0** to *n*, where *n* indicates the shared bandwidth size. If the value is set to **0**, the maximum bandwidth, that is the shared bandwidth size will be used.
egress_guarented_size	integer	• Specifies the guaranteed outbound bandwidth in Mbit/s. • The value ranges from **0** to *x*, where *x* indicates the remaining bandwidth.
publicip_info	Array of **publicip_info** objects	• Specifies the EIP associated with the bandwidth. • The bandwidth, whose type is set to **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is set to **PER**, can be used by only one EIP.

- 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",
    "status": "NORMAL",
    "enable_bandwidth_rules": false,
    "rule_quota": 0,
    "bandwidth_rules": [],
  }
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5 Bandwidth (V2.0)

4.5.1 Assigning a Shared Bandwidth

Function

This API is used to assign a shared bandwidth.

URI

POST /v2.0/{project_id}/bandwidths

Table 4-62 describes the parameters.

Table 4-62 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Request Message

- Request parameter

Table 4-63 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-64 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-65**.

Table 4-65 Description of the **bandwidth** field

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

Name	Mandatory	Type	Description
size	Yes	Integer	• 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. • The value ranges from 1 Mbit/s to 300 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 a decimal fraction (for example **10.2**) or a character string (for example **"10"**) is specified, the specified value will be automatically converted to an integer. • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: – 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). – 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). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.

Name	Mandatory	Type	Description
enterprise_project_id	No	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. • When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the **Enterprise Management User Guide**.
public_border_group	No	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.
bandwidth_type	No	String	• Specifies the type of the bandwidth to be created. • For details about supported types of bandwidth, see **Querying a Bandwidth**. By default: – Central region: **share** – Edge site: **edgeshare**

- Example request

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

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

Response Message

- Response parameter

Table 4-66 Response parameter

Name	Type	Description
bandwidth	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-67**.

Table 4-67 Description of the **bandwidth** field

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • The value can be **PER** or **WHOLE**. – **WHOLE**: Shared bandwidth – **PER**: Dedicated bandwidth
publicip_info	Array of **publicip_info** objects	• Specifies information about the EIP that uses the bandwidth. For details, see **Table 4-68**. • The bandwidth, whose type is **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is **PER**, can be used by only one EIP.
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	• Specifies the bandwidth type. The default value for the shared bandwidth is **share**. • The value can be **share**, **bgp**, or **sbgp**. – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP
charge_mode	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used. • The shared bandwidth can be billed only by bandwidth.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a UUID that can contain a maximum of 36 characters, including hyphens (-). Value **0** indicates the default enterprise project. • When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the **Enterprise Management User Guide**.
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)

Name	Type	Description
created_at	String	• Specifies the time (UTC) when the bandwidth is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the bandwidth is updated. • Format: *yyyy-MM-ddTHH:mm:ss*
enable_bandwidth_rules	boolean	• Specifies whether to enable QoS. • The value can be **true** or **false**.
rule_quota	integer	Specifies the maximum number of grouping rules supported by the bandwidth.
bandwidth_rules	Array of **bandwidth_rules** objects	Specifies the bandwidth rules.
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.

Table 4-68 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 address – **6**: IPv6 address

Name	Type	Description
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

Table 4-69 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 **False** indicates that the configuration does not take effect.
egress_size	integer	• Specifies the maximum outbound bandwidth in Mbit/s. • The value range ranges from **0** to *n*, where *n* indicates the shared bandwidth size. If the value is set to **0**, the maximum bandwidth, that is the shared bandwidth size will be used.
egress_guarented_size	integer	• Specifies the guaranteed outbound bandwidth in Mbit/s. • The value ranges from **0** to *x*, where *x* indicates the remaining bandwidth.
publicip_info	Array of **publicip_info** objects	• Specifies the EIP associated with the bandwidth. • The bandwidth, whose type is set to **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is set to **PER**, can be used by only one EIP.

- 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",
    "billing_info": "",
    "enterprise_project_id": "0",
    "status": "NORMAL",
    "created_at": "2020-04-21T07:58:02Z",
    "updated_at": "2020-04-21T07:58:02Z",
    "enable_bandwidth_rules": false,
    "rule_quota": 0,
    "bandwidth_rules": [],
  }
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.2 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 4-70 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 **Obtaining a Project ID**.

Request Message

- Request parameter

Table 4-71 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-72 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-73**.

Table 4-73 Description of the **bandwidth** field

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

Name	Mandatory	Type	Description
size	Yes	Integer	• 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. • The value ranges from 1 Mbit/s to 300 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.) • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: – 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). – The minimum increment is 50 Mbit/s if the allowed bandwidth

Name	Mandatory	Type	Description
			ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
count	Yes	Integer	• Specifies the number of shared bandwidths that can be assigned at a time. • The value is a positive integer. • 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.
public_border_group	No	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.

- Example request

```
POST https://{Endpoint}/v2.0/{project_id}/batch-bandwidths

{
    "bandwidth": {
```



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

Response Message

- Response parameter

Table 4-74 Response parameter

Name	Type	Description
bandwidths	Array of **bandwidths** objects	Specifies the bandwidth objects. For details, see **Table 4-75**.

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

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • The value can be **PER** or **WHOLE**. – **WHOLE**: Shared bandwidth – **PER**: Dedicated bandwidth

Name	Type	Description
publicip_info	Array of **publicip_info** objects	• Specifies information about the EIP that uses the bandwidth. For details, see **Table 4-76**. • The bandwidth, whose type is **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is **PER**, can be used by only one EIP.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	• Specifies the bandwidth type. The default value for the shared bandwidth is **share**. • The value can be **share**, **bgp**, or **sbgp**. – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP
charge_mode	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used. • The shared bandwidth can be billed only by bandwidth.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)

Name	Type	Description
public_border_group	String	Specifies whether it is in a central site or an edge site. Values: • **center** • *Edge site name* This resource can only be associated with an EIP of the same region.

Table 4-76 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 address – **6**: IPv6 address
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

- 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**.

4.5.3 Deleting a Shared Bandwidth

Function

This API is used to delete a shared bandwidth.

URI

DELETE /v2.0/{project_id}/bandwidths/{bandwidth_id}

Table 4-77 describes the parameters.

Table 4-77 Parameter description

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

Request Message

- Request parameter

Table 4-78 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- 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**.

4.5.4 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 4-79 describes the parameters.

Table 4-79 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 4-80 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-81 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-82**.

Table 4-82 Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of **publicip_info** objects	• Specifies information about the EIP to be added to the shared bandwidth. For details, see **Table 4-83**. • The bandwidth, whose type is **WHOLE**, 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.

Table 4-83 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	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

- Example request

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

{
  "bandwidth": {
    "publicip_info": [
      {
        "publicip_id": "29b114d1-2d41-4741-a1f0-b6f80aabceff",
        "publicip_type": "5_bgp",
      }
    ]
  }
}
```

Response Message

- Response parameter

Table 4-84 Response parameter

Name	Type	Description
bandwidth	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-85**.

Table 4-85 Description of the **bandwidth** field

Name	Type	Description
name	String	• Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	• Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 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.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	• Specifies whether the bandwidth is shared or dedicated. • The value can be **PER** or **WHOLE**. – **WHOLE**: Shared bandwidth – **PER**: Dedicated bandwidth
publicip_info	Array of **publicip_info** objects	• Specifies information about the EIP that uses the bandwidth. For details, see **Table 4-86**. • The bandwidth, whose type is **WHOLE**, can be used by multiple EIPs. The bandwidth, whose type is **PER**, can be used by only one EIP.
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	• Specifies the bandwidth type. The default value for the shared bandwidth is **share**. • The value can be **share**, **bgp**, or **sbgp**. – **share**: Shared bandwidth – **bgp**: Dynamic BGP – **sbgp**: Static BGP
charge_mode	String	• Specifies whether the bandwidth is billed by traffic or by bandwidth size. • Possible values can be **bandwidth** (billed by bandwidth) and **traffic** (billed by traffic). If the value is an empty character string or no value is specified, value **bandwidth** is used. • The shared bandwidth can be billed only by bandwidth.
billing_info	String	Specifies the bill information. If **billing_info** is specified, the bandwidth is in yearly/monthly billing mode.
enterprise_project_id	String	• Specifies the enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. • When creating a shared bandwidth, associate the enterprise project ID with the shared bandwidth. **NOTE** For more information about enterprise projects and how to obtain enterprise project IDs, see the **Enterprise Management User Guide**.
status	String	• Specifies the bandwidth status. • Possible values are as follows: – **FREEZED** (Frozen) – **NORMAL** (Normal)

Table 4-86 publicip_info objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 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	• Specifies the IP address version. • Possible values are as follows: – **4**: IPv4 – **6**: IPv6
publicip_type	String	• Specifies the EIP type. • The value can be **5_bgp**. • Constraints: – The configured value must be supported by the system. – **publicip_id** is an IPv4 port. If **publicip_type** is not specified, the default value is **5_bgp**.

- Example response

```
{
   "bandwidth": {
      "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
      "name": "bandwidth123",
      "size": 10,
      "share_type": "WHOLE",
      "publicip_info": [
         {
            "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",
      "billing_info": "CS1712121146TSQOJ:0616e2a5dc9f4985ba52ea8c0c7e273c:southchina:
35f2b308f5d64441a6fa7999fbcd4321",
      "bandwidth_type": "share",
      "status": "NORMAL"
   }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.5 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 4-87 describes the parameters.

Table 4-87 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 4-88 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-89 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	**bandwidth** object	Specifies the bandwidth objects. For details, see **Table 4-90**.

Table 4-90 Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of **publicip_info** objects	• Specifies information about the EIP to be removed from the bandwidth. For details, see **Table 4-91**. • The bandwidth, whose type is **WHOLE**, 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.
charge_mode	Yes	String	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. Specifies whether the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth is billed by traffic or by bandwidth. The value can be **bandwidth** or **traffic**.
size	Yes	Integer	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. Specifies the size (Mbit/s) of the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth. The value ranges from 1 Mbit/s to 300 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.)

Table 4-91 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 **publicip_id** value is the EIP ID, this parameter will be ignored. If **publicip_id** is the ID of the IPv6 port, this parameter must be set to **5_dualStack**. This only applies to the **CN North-Beijing4** region.

- Example request

```
POST 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**.

4.6 Bandwidth Add-On Packages

4.6.1 Querying Bandwidth Add-On Packages

Function

This API is used to query bandwidth add-on packages.

URI

GET /v2/{project_id}/bandwidthpkgs

Table 4-92 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

None

Response Parameters

Status code: 200

Table 4-93 Response body parameters

Parameter	Type	Description
bandwidthpkgs	Array of **BandwidthPkgResp** objects	List of bandwidth add-on packages
bandwidthpkgs_links	Array of **BandwidthPkgPage** objects	Page turning display

Table 4-94 BandwidthPkgResp

Parameter	Type	Description
resourceId	String	• Bandwidth add-on package ID • The value can contain 1 to 64 characters, including digits, letters, underscores (_), and hyphens (-).
resourceName	String	• Bandwidth add-on package name

Parameter	Type	Description
processedTime	String	• Time (UTC) when the bandwidth add-on package is created. The value is in the format of 2016-03-28T00:00:00Z.
bandwidthId	String	• ID of the bandwidth that uses the bandwidth add-on package
pkgSize	Integer	• Bandwidth add-on package size • Value range: > 1 Mbit/s; Bandwidth add-on package size + Bandwidth size < Bandwidth upper limit defined by cloud service bandwidth API
tenantId	String	• Tenant ID
billingInfo	String	• Information about the bandwidht add-on package order. If this parameter is not empty, the value is in the format of *orderId:productId*.
startTime	String	• Start time (UTC) when the bandwidth add-on package takes effect. The value is in the format of 2016-03-28T00:00:00Z. • Value range: **startTime** must be later than or the same as **processedTime**.
endTime	String	• End time (UTC) when the bandwidth add-on package takes effect. The value is in the format of 2016-03-28T00:00:00Z. • Value range: **endTime** must be later than **startTime**.
status	String	• Status of the bandwidth add-on package. Only administrators can change the status. • Value range: **pending**, **active**, **completed**, and **error**

Table 4-95 BandwidthPkgPage

Parameter	Type	Description
href	String	• Link
rel	String	• Page turning mark

Example Request

```
GET /v2/{project_id}/bandwidthpkgs
```


Example Response

Status code: 200

Normal response to the GET operation

```
{
  "bandwidthpkgs" : [ {
    "resourceId" : "0003cb59-eaa4-4c05-85bd-4b4cc806992c",
    "resourceName" : "bandwidthpkg-test",
    "pkgSize" : "5",
    "processedTime" : "2018-10-13 20:21:17.465126",
    "bandwidthId" : "6c50f312-2eab-4f08-9da2-b41b0801d8be",
    "tenantId" : "e136ddf186a84dff9c5d5364de79f4e4",
    "billingInfo" : "CS1810091953KI13V:edcb94a885a84ed3a3fdf8ea4d2741da",
    "startTime" : "2018-10-24 21:2:17.465126",
    "endTime" : "2018-10-28 21:2:17.465126",
    "status" : "pending"
  } ],
  "bandwidthpkgs_links" : [ {
    "href" : "https://vpc.br-iaas-odin1.ulanqab.huawei.com:443/v2/0605767f6f00d5762ff9c001c70e7359/
bandwidthpkgs?limit=2000&marker=4fc74637-753f-46cb-af8c-b58528887a79&page_reverse=true",
    "rel" : "previous"
  } ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.7 Quota

4.7.1 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 can be used to query quotas of EIP.

URI

GET /v1/{project_id}/quotas

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

Table 4-96 describes the parameters.

Table 4-96 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
type	No	String	• Specifies the resource type. • Values: – **vpc**: VPC – **subnet**: Subnet – **securityGroup**: Security group – **securityGroupRule**: Security group rule – **publicIp**: EIP – **vpn**: VPN – **vpngw**: VPN gateway – **vpcPeer**: VPC peering connection – **loadbalancer**: Load balancer – **listener**: Listener – **physicalConnect**: Direct Connect connection – **virtualInterface**: Virtual interface – **firewall**: Firewall – **shareBandwidthIP**: IP address added to a shared bandwidth – **shareBandwidth**: Shared bandwidth – **address_group**: IP address group – **flow_log**: VPC fow log – **vpcContainRoutetable**: Number of route tables associated with a VPC – **routetableContainRoutes**: Number of routes in a route table

Request Message

- Request parameter

None

- Example request
  ```
  GET https://{Endpoint}/v1/{project_id}/quotas
  ```

Response Message

- Response parameter

Table 4-97 Response parameter

Name	Type	Description
quotas	**quotas** object	Specifies the quota object. For details, see **Table 4-98**.

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

Name	Type	Description
resources	Array of **resource** objects	Specifies the resource objects. For details, see **Table 4-99**.

Table 4-99 Description of the **resource** field

Name	Type	Description
type	String	• Specifies the resource type. • Values: – **vpc**: VPC – **subnet**: Subnet – **securityGroup**: Security group – **securityGroupRule**: Security group rule – **publicIp**: EIP – **vpn**: VPN – **vpngw**: VPN gateway – **vpcPeer**: VPC peering connection – **loadbalancer**: Load balancer – **listener**: Listener – **physicalConnect**: Direct Connect connection – **virtualInterface**: Virtual interface – **firewall**: Firewall – **shareBandwidthIP**: IP address added to a shared bandwidth – **shareBandwidth**: Shared bandwidth – **address_group**: IP address group – **flow_log**: VPC fow log – **vpcContainRoutetable**: Number of route tables associated with a VPC – **routetableContainRoutes**: Number of routes in a route table
used	Integer	• Specifies the number of created network resources. • The value ranges from **0** to the value of **quota**.
quota	Integer	• Specifies the maximum quota values for the resources. • The value ranges from the default quota value to the maximum quota value.
min	Integer	Specifies the minimum quota value allowed.

NOTE

If value **-1** is returned when you use an API to query your VPC quota, this indicates that the VPC quota is not limited.

- 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":"physicalConnect",
            "used":0,
            "quota":10,
            "min":0
         },
         {
            "type":"virtualInterface",
            "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
        },
        {
            "type": "address_group",
            "used": 0,
            "quota": 50,
            "min": 0
        }
    ]
  }
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.8 EIP Tag Management

4.8.1 Creating a Tag for an EIP

Function

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

URI

POST /v2.0/{project_id}/publicips/{publicip_id}/tags

Table 4-100 describes the parameters.

Table 4-100 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

Table 4-101 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-102 Request parameter

Parameter	Type	Mandatory	Description
tag	**tag** object	Yes	Specifies the **tag** objects. For details, see **Table 4-103**.

Table 4-103 tag objects

Attribute	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 36 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_) • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 43 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_)

- 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**.

4.8.2 Querying EIP Tags

Function

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

URI

GET /v2.0/{project_id}/publicips/{publicip_id}/tags

Table 4-104 describes the parameters.

Table 4-104 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

  Table 4-105 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request

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


Response Message

- Response parameter

Table 4-106 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the **tag** object list. For details, see **Table 4-107**.

Table 4-107 tag objects

Attribute	Type	Description
key	String	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 36 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_) • The tag key of a VPC must be unique.
value	String	• Specifies the tag value. • Can contain a maximum of 43 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_)

- Example response

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

```
  ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.8.3 Deleting an EIP Tag

Function

This API is used to delete an EIP tag.

URI

DELETE /v2.0/{project_id}/publicips/{publicip_id}/tags/{key}

Table 4-108 describes the parameters.

Table 4-108 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.
key	Yes	Specifies the tag key.

Request Message

- Request parameter

Table 4-109 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- 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**.

4.8.4 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.

URI

POST /v2.0/{project_id}/publicips/{publicip_id}/tags/action

Table 4-110 describes the parameters.

Table 4-110 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

Table 4-111 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 4-112 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tag** objects	Yes	Specifies the **tag** object list. For details, see **Table 4-113**.
action	String	Yes	Specifies the operation. Possible values are as follows: • **create** • **delete**

Table 4-113 tag objects

Attribute	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 36 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_) • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 43 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_)

- Request example 1: Creating tags in batches

```
POST 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

{
   "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**.

4.8.5 Querying EIPs by Tag

Function

This API is used to query EIPs by tag.

URI

POST /v2.0/{project_id}/publicips/resource_instances/action

Table 4-114 describes the parameters.

Table 4-114 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Request Message

- Request parameter

Table 4-115 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tags** 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	Integer	No	Sets the page size. This parameter is not available when **action** is set to **count**. The default value is **1000** when **action** is set to **filter**. The maximum value is **1000**, and the minimum value is **1**. The value cannot be a negative number.
offset	Integer	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 **action** is set to **count**. If **action** is set to **filter**, the value must be a number, and the default value is **0**. The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be **filter** (filtering) or **count** (querying the total number). The value **filter** indicates pagination query. The value **count** indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of **match** objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only **resource_name** is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

Table 4-116 Description of the **tags** 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 **values** indicates any value. The values are in the OR relationship.

Table 4-117 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. Each value can contain 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 4-118 Response parameter

Name	Type	Description
resources	Array of **resource** objects	Specifies the **resource** object list. For details, see **Table 4-119**.
total_count	Integer	Specifies the total number of query records.

Table 4-119 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 **tags** objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see **Table 4-120**.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

Table 4-120 Description of the **tags** 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.)
value	Yes	String	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for **values** 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**.

4.8.6 Querying EIP Tags in a Specified Project

Function

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

URI

GET /v2.0/{project_id}/publicips/tags

Table 4-121 describes the parameters.

Table 4-121 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Request Message

- Request parameter

Table 4-122 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

- Example request

```
GET /v2.0/{project_id}/publicips/tags
```

Response Message

- Response parameter

Table 4-123 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the **tag** object list. For details, see **Table 4-124**.

Table 4-124 Description of the **tag** field

Name	Type	Description
key	String	Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 36 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_)
values	Array of strings	Specifies the tag value list. • Can contain a maximum of 43 characters. • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-) and underscores (_)

- Example response

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

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9 Auxiliary APIs for EIPs

4.9.1 Querying the Number of EIPs

Function

This API is used to query the number of EIPs.

URI

GET /v2/{project_id}/publicip/instances

Table 4-125 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

None

Response Parameters

None

Example Request

None

Example Response

Status code: 200

Normal response to GET and PUT operations

```
{
  "instance_num" : 3
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.2 Querying EIP Type

Function

This API is used to query the type of an EIP.

URI

GET /v2/{project_id}/publicip_types

Table 4-126 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

None

Response Parameters

None

Example Request

None

Example Response

Status code: 200

Normal response to GET and PUT operations

```
{
  "publicip_types" : [ {
    "id" : "143fe300-78bc-4e2b-ae4b-d7a2ae7f2197",
    "type" : "5_bgp"
  }, {
    "id" : "71d56cb8-e86e-403b-8ace-8551ff075986",
```

```
    "type" : "5_test"
  }, {
    "id" : "985579ea-be40-409e-82b0-68d8acc10865",
    "type" : "5_union"
  }, {
    "id" : "caaef6af-6662-45b0-bd55-519673265a42",
    "type" : "5_telcom"
  } ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.3 Querying the Number of EIPs

Function

This API is used to query the number of EIPs.

URI

GET /v2/{project_id}/elasticips

Table 4-127 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

None

Response Parameters

Status code: 200

Table 4-128 Response body parameters

Parameter	Type	Description
elasticip_size	Integer	Number of EIPs

Example Request

None

Example Response

Status code: 200

Normal

```
{
  "elasticip_size" : 11
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

5 API V3

5.1 EIPs

5.1.1 Querying All EIPs

Function

This API is used to query all EIPs.

URI

GET /v3/{project_id}/eip/publicips

Table 5-1 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Project ID. Minimum length: **0** Maximum length: **32**

Table 5-2 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	• Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. Minimum length: **0** Maximum length: **36**

Parameter	Mandatory	Type	Description
offset	No	Integer	• Start resource number of pagination query. Minimum value: **0** Maximum value: **99999**
limit	No	Integer	• Number of records returned on each page. • The value ranges from **0** to **2,000**. The maximum value varies by region. Minimum value: **0** Maximum value: **2000**
fields	No	Array	• Field. Format: "fields=id&fields=owner&..." • Supported fields: **id**, **project_id**, **ip_version**, **type**, **public_ip_address**, **public_ipv6_address**, **network_type**, **status**, **description**, **created_at**, **updated_at**, **vnic**, **bandwidth**, **associate_instance_type**, **associate_instance_id**, **lock_status**, **billing_info**, **tags**, **enterprise_project_id**, **allow_share_bandwidth_types**, **public_border_group**, **alias**, **publicip_pool_name**, and **publicip_pool_id**.

Parameter	Mandatory	Type	Description
sort_key	No	String	• Sort. Format: "sort_key=id" • Supported fields: **id**, **public_ip_address**, **public_ipv6_address**, **ip_version**, **created_at**, **updated_at**, and **public_border_group**. Enumerated values: • **id** • **public_ip_address** • **public_ipv6_address** • **ip_version** • **created_at** • **updated_at** • **public_border_group**
sort_dir	No	String	• Sorting direction. • The value can be **asc** or **desc** Enumerated values: • **asc** • **desc**
id	No	Array	• Filter by **id**.
ip_version	No	Array	• Filter by **ip_version**. • The value can be **4** (IPv4) or **6** (IPv6). Enumerated values: • **4** • **6**
public_ip_address	No	Array	• Filter by **public_ip_address**.
public_ip_address_like	No	String	• Filter by **public_ip_address** in a fuzzy search. Minimum length: **0** Maximum length: **64**
public_ipv6_address	No	Array	• Filter by **public_ipv6_address**.

Parameter	Mandatory	Type	Description
public_ipv6_address_like	No	String	• Filter by **public_ipv6_address** in a fuzzy search. Minimum length: **0** Maximum length: **64**
type	No	Array	• Filter by **type**. • The value can be: – **EIP**: EIP – **DUALSTACK**: Dual-stack IPv6 – **DUALSTACK_SUBNET**: Dual-stack subnet Enumerated values: • **EIP** • **DUALSTACK** • **DUALSTACK_SUBNET**
network_type	No	Array	• Filter by **network_type**. • The value can be **5_telcom**, **5_union**, **5_bgp**, **5_sbgp**, **5_ipv6**, or **5_graybgp**. Enumerated values: • **5_telcom** • **5_union** • **5_bgp** • **5_sbgp** • **5_ipv6** • **5_graybgp**
publicip_pool_name	No	Array	• Filter by **publicip_pool_name**. • The value can be **5_telcom**, **5_union**, **5_bgp**, **5_sbgp**, **5_ipv6**, **5_graybgp**, or a dedicated pool name.

Parameter	Mandatory	Type	Description
status	No	Array	• Filter by **status**. • The value can be **FREEZED**, **DOWN**, **ACTIVE**, or **ERROR**. Enumerated values: • **FREEZED** • **DOWN** • **ACTIVE** • **ERROR**
alias_like	No	String	• Filter by **alias** in a fuzzy search. Minimum length: **0** Maximum length: **64**
alias	No	Array	• Filter by **alias**.
description	No	Array	• Filter by **description**.
vnic.private_ip_address	No	Array	• Filter by **private_ip_address**.
vnic.private_ip_address_like	No	String	• Filter by **private_ip_address** in a fuzzy search. Minimum length: **0** Maximum length: **64**
vnic.device_id	No	Array	• Filter by **device_id**.
vnic.device_owner	No	Array	• Filter by **device_owner**.
vnic.vpc_id	No	Array	• Filter by **vpc_id**.
vnic.port_id	No	Array	• Filter by **port_id**.
vnic.device_owner_prefixlike	No	String	• Filter by **device_owner_prefixlike** in a fuzzy search. Minimum length: **0** Maximum length: **64**
vnic.instance_type	No	Array	• Filter by **instance_type**.
vnic.instance_id	No	Array	• Filter by **instance_id**.
bandwidth.id	No	Array	• Filter by the bandwidth ID.

Parameter	Mandatory	Type	Description
bandwidth.name	No	Array	• Filter by **name**.
bandwidth.name_like	No	Array	• Filter by **name** in a fuzzy search.
bandwidth.size	No	Array	• Filter by **size**.
bandwidth.share_type	No	Array	• Filter by **share_type**. Enumerated values: • **PER** • **WHOLE**
bandwidth.charge_mode	No	Array	• Filter by **charge_mode**. Enumerated values: • **bandwidth** • **traffic** • **95peak_plus**
billing_info	No	Array	• Filter by **billing_info**.
billing_mode	No	String	• Filter by **billing_mode**. • The value can be **YEARLY_MONTHLY** or **PAY_PER_USE**. Enumerated values: • **YEARLY_MONTHLY** • **PAY_PER_USE**
associate_instance_type	No	Array	• Filter by **associate_instance_type**. • The value can be **PORT**, **NATGW**, **ELB**, **VPN**, or **ELBV1**. Enumerated values: • **PORT** • **NATGW** • **ELB** • **VPN** • **ELBV1**
associate_instance_id	No	Array	• Filter by **associate_instance_id**.
enterprise_project_id	No	Array	• Filter by **enterprise_project_id**.

Parameter	Mandatory	Type	Description
public_border_group	No	Array	• Filter by **public_border_group**.
allow_share_bandwidth_type_any	No	Array	• Shared bandwidth type. EIPs can be filtered by shared bandwidth type. You can specify multiple shared bandwidth types, which are separated by commas (,).

Request Parameter

Table 5-3 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-4 Response body parameters

Parameter	Type	Description
request_id	String	Request ID. Minimum length: **0** Maximum length: **36**
publicips	Array of **PublicipSingleShowResp** objects	EIP object.
page_info	**PageInfoOption** object	Pagination page number information.

Parameter	Type	Description
total_count	Integer	Total number of EIPs. Minimum value: **0** Maximum value: **999999**

Table 5-5 PublicipSingleShowResp

Parameter	Type	Description
id	String	• Unique ID of the EIP. Minimum length: **0** Maximum length: **36**
project_id	String	• Project ID. Minimum length: **0** Maximum length: **32**
ip_version	Integer	• IP address version. • The value can be: – **4**: IPv4 EIP – **6**: IPv6 EIP Enumerated values: • **4** • **6**
public_ip_address	String	• EIP or IPv6 port address. Minimum length: **0** Maximum length: **36**
public_ipv6_address	String	• Obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available. Minimum length: **0** Maximum length: **64**
network_type	String	• Network type of an EIP. This parameter is discarded and is not displayed by default. It is inherited by **publicip_pool_name**. Minimum length: **0** Maximum length: **64**

Parameter	Type	Description
status	String	• EIP status. • The value can be: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **NOTIFYING** – **NOTIFY_DELETE** – **PENDING_UPDATE** (Updating) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** Minimum length: **0** Maximum length: **64** Enumerated values: • **FREEZED** • **BIND_ERROR** • **BINDING** • **PENDING_DELETE** • **PENDING_CREATE** • **NOTIFYING** • **NOTIFY_DELETE** • **PENDING_UPDATE** • **DOWN** • **ACTIVE** • **ELB** • **VPN** • **ERROR**
description	String	• Supplementary information about the EIP. • This is customized by users and is not perceived by the system. Minimum length: **0** Maximum length: **256**

Parameter	Type	Description
public_border_group	String	• Whether the resource is in a central region or an edge site. • The value can be **center** or an edge site name. • This resource can only be associated with an EIP of the same region. Minimum length: **1** Maximum length: **64**
created_at	String	• Time (UTC) when an EIP is assigned. • Format: *yyyy-MM-ddTHH:mm:ssZ* Minimum length: **0** Maximum length: **64**
updated_at	String	• Time (UTC) when an EIP is updated. • Format: *yyyy-MM-ddTHH:mm:ssZ* Minimum length: **0** Maximum length: **64**
type	String	• EIP type. Minimum length: **1** Maximum length: **36** Enumerated values: • **EIP** • **DUALSTACK** • **DUALSTACK_SUBNET**
vnic	**VnicInfo** object	• Port information of the instance with an EIP bound. • If the instance with an EIP bound does not depend on a port, the value is **null**.
bandwidth	**PublicipBandwidthInfo** object	Bandwidth bound to an EIP.
enterprise_project_id	String	Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
billing_info	String	• Order information of an EIP. • Order information is available only for yearly/monthly resources. This parameter is left empty for pay-per-use resources. Minimum length: **0** Maximum length: **256**
lock_status	String	• Frozen status of an EIP. • The metadata type indicates that the EIP is frozen due to arrears or security reasons. • The value can be: – **police** – **locked** Minimum length: **0** Maximum length: **64**
associate_instance_type	String	• Type of the instance bound with an EIP. • The value can be: – **PORT** – **NATGW** – **ELB** – **ELBV1** – **VPN** – **null** Minimum length: **0** Maximum length: **64** Enumerated values: • **PORT** • **NATGW** • **ELB** • **ELBV1** • **VPN** • **null**
associate_instance_id	String	• ID of the instance bound with an EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
publicip_pool_id	String	• ID of the network that an EIP belongs to. It is the network ID corresponding to **publicip_pool_name**. Minimum length: **0** Maximum length: **36**
publicip_pool_name	String	• Network type of an EIP, including public EIP pool (for example, **5_bgp** or **5_sbgp**) and dedicated EIP pool. • For details about the dedicated EIP pool, see the APIs about **publcip_pool**. Minimum length: **0** Maximum length: **64**
alias	String	• EIP name. Minimum length: **0** Maximum length: **64**
profile	**ProfileInfo** object	• EIP and metadata. (The parameter is not displayed by default.)
fake_network_type	Boolean	• Whether an EIP can change its BGP type. If the value is **true**, the EIP can change its BGP type. If the value is **false**, the EIP cannot change its BGP type. (The parameter is not displayed by default.) Enumerated values: • **true** • **false**
tags	Array of strings	• User tag. (The parameter is not displayed by default.)
associate_instance_metadata	String	• Record the upper-level ownership of an instance. For example, if **associate_instance_type** is set to **PORT**, this parameter records the **device_id** and **device_owner** information of the port. (This parameter only records information in limited scenarios and is not displayed by default.) Minimum length: **1** Maximum length: **64**

Parameter	Type	Description
associate_mode	String	• Passthrough mode. The parameter is displayed only after the passthrough mode is enabled. Minimum length: **1** Maximum length: **36**
allow_share_bandwidth_types	Array of strings	• Types of the shared bandwidth that an EIP can be added to. If this parameter is left blank, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types. Maximum length: **64**
cascade_delete_by_instance	Boolean	• Whether an EIP can be released together with its instance. (The parameter is not displayed by default.)

Table 5-6 VnicInfo

Parameter	Type	Description
private_ip_address	String	• Private IP address. Minimum length: **0** Maximum length: **36**
device_id	String	• ID of the device that a port belongs to. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
device_owner	String	• Device that the port belongs to. • The value can be: – **network:dhcp** – **network:VIP_PORT** – **network:router_interface_distributed** – network:router_centralized_snat • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**

Parameter	Type	Description
vpc_id	String	• VPC ID. Minimum length: **0** Maximum length: **36**
port_id	String	• Port ID. Minimum length: **0** Maximum length: **36**
port_profile	String	• Port profile. Minimum length: **0** Maximum length: **256**
mac	String	• Port MAC address. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vtep	String	• VTEP IP address. Minimum length: **0** Maximum length: **36**
vni	String	• VXLAN ID. Minimum length: **0** Maximum length: **36**
instance_id	String	• ID of the instance that the port belongs to, for example, RDS instance ID. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
instance_type	String	• Type of the instance that the port belongs to, for example, RDS. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**

Table 5-7 PublicipBandwidthInfo

Parameter	Type	Description
id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**
size	Integer	• Bandwidth size. • The value ranges from 5 Mbit/s to 2000 Mbit/s by default. Minimum value: **0** Maximum value: **99999**
share_type	String	• Whether the bandwidth is shared or dedicated. • The value can be: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • IPv6 addresses do not support bandwidth whose type is **WHOLE**. Minimum length: **0** Maximum length: **36**
charge_mode	String	• Whether the billing is based on traffic or bandwidth. • The value can be: – **bandwidth**: billed by bandwidth – **traffic**: billed by traffic – **95peak_plus**: billed by 95th percentile bandwidth (enhanced) Minimum length: **0** Maximum length: **36**
name	String	• Bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Minimum length: **0** Maximum length: **64**
billing_info	String	• Billing information. If **billing_info** is specified, the bandwidth is billed on a yearly/monthly basis. Minimum length: **0** Maximum length: **256**

Table 5-8 ProfileInfo

Parameter	Type	Description
local_network_port	String	• **port_id** in the **5_*xxx*** network (for example, **5_bgp**) of an EIP. Minimum length: **0** Maximum length: **36**
standalone	Boolean	• Whether an EIP is assigned together with a VM. If the value is **true**, the EIP is assigned independently. If the value is **false**, the EIP is assigned together with a VM.
notify_status	String	• EIP assigning status. This parameter is only for internal use of the EIP service. Minimum length: **0** Maximum length: **36** Enumerated values: • **PENDING_CREATE** • **PENDING_UPDATE** • **NOTIFYING** • **NOTIFYED** • **NOTIFY_DELETE**
create_time	String	• Time when an EIP is assigned. Minimum length: **0** Maximum length: **64**
fake_network_type	Boolean	• Whether an EIP can change its BGP type. If the value is **true**, the EIP can change its BGP type. If the value is **false**, the EIP cannot change its BGP type. Enumerated values: • **true** • **false**
create_source	String	• Type of the resource purchased together with an EIP. Minimum length: **0** Maximum length: **36** Enumerated value: • **ecs**
ecs_id	String	• ID of the ECS purchased together with an EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
lock_status	String	• Lock status of an EIP, for example, **POLICE** (frozen due to public security issues) or **LOCKED** (frozen due to common issues). (**ARREAR**: in arrears; **DELABLE**: can be deleted) Minimum length: **0** Maximum length: **36**
freezed_status	String	• EIP frozen status. Minimum length: **0** Maximum length: **36** Enumerated values: • **FREEZED** • **UNFREEZED**
bandwidth_info	**BandwidthInfoResp** object	• Bandwidth bound to an EIP.

Table 5-9 BandwidthInfoResp

Parameter	Type	Description
bandwidth_name	String	• Bandwidth name. Minimum length: **0** Maximum length: **256**
bandwidth_number	Integer	• Bandwidth size (Mbit/s). Minimum value: **0** Maximum value: **99999**
bandwidth_type	String	• Bandwidth type. Enumerated values: • **PER** • **WHOLE**
bandwidth_id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**

Table 5-10 PageInfoOption

Parameter	Type	Description
previous_marker	String	Marker value of the previous page. Minimum length: **0** Maximum length: **36**
next_marker	String	Marker value of the next page. Minimum length: **0** Maximum length: **36**
current_count	Integer	Total number of data records on the current page. Minimum value: **0** Maximum value: **99999**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation


```
{
  "page_info" : {
    "current_count" : 1,
    "next_marker" : "0490aeae-ab8f-4764-b012-45645e9c0aa9",
    "previous_marker" : "0490aeae-ab8f-4764-b012-45645e9c0aa9"
  },
  "publicips" : [ {
    "created_at" : "2022-03-17T09:46:22Z",
    "updated_at" : "2022-03-30T02:46:04Z",
    "lock_status" : null,
    "allow_share_bandwidth_types" : [ "bgp", "sbgp", "share", "share_yidongdanxian", "share_youxuan" ],
    "id" : "006343a1-32bf-4361-958a-efd158153dd0",
    "alias" : null,
    "project_id" : "060576787a80d5762fa2c00f07ddfcf4",
    "ip_version" : 4,
    "public_ip_address" : "88.88.1.141",
    "public_ipv6_address" : null,
    "status" : "DOWN",
    "description" : "",
    "enterprise_project_id" : "0",
    "billing_info" : null,
    "type" : "EIP",
    "vnic" : {
      "private_ip_address" : "172.16.1.235",
      "device_id" : "",
      "device_owner" : "",
      "vpc_id" : "1c30f428-9741-48b2-a788-0b2f359705eb",
      "port_id" : "22d3576d-c042-4f3d-8c7c-1330a2724627",
      "mac" : "fa:16:3e:3a:22:66",
      "vtep" : null,
      "vni" : null,
      "instance_id" : "",
```



```
    "instance_type" : "",
    "port_profile" : null
  },
  "bandwidth" : {
    "id" : "149ff19b-5de4-4436-958f-2eca39952e93",
    "size" : 100,
    "share_type" : "PER",
    "charge_mode" : "traffic",
    "name" : "bandwidth-xym-br-eqos",
    "billing_info" : ""
  },
  "associate_instance_type" : "PORT",
  "associate_instance_id" : "22d3576d-c042-4f3d-8c7c-1330a2724627",
  "publicip_pool_id" : "9af5f2e5-1765-4b86-b342-ece52e785c8b",
  "publicip_pool_name" : "5_union",
  "public_border_group" : "center",
  "tags" : [ "key=value" ]
 } ],
 "request_id" : "c4962d006b34af3c2343de7f88ef65e3",
 "total_count" : 100
}
```


Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.1.2 Querying EIP Details

Function

This API is used to query EIP details.

URI

GET /v3/{project_id}/eip/publicips/{publicip_id}

Table 5-11 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. Minimum length: **0** Maximum length: **32**
publicip_id	Yes	String	EIP ID. Minimum length: **0** Maximum length: **36**

Table 5-12 Query parameter

Parameter	Mandatory	Type	Description
fields	No	Array	• Field. Format: "fields=id&fields=owner&..." • Supported fields: **id**, **project_id**, **ip_version**, **type**, **public_ip_address**, **public_ipv6_address**, **network_type**, **status**, **description**, **created_at**, **updated_at**, **vnic**, **bandwidth**, **associate_instance_type**, **associate_instance_id**, **lock_status**, **billing_info**, **tags**, **enterprise_project_id**, **publicip_pool_name**, **allow_share_bandwidth_types**, **alias**, **publicip_pool_id**, and **public_border_group**.

Request Parameter

Table 5-13 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-14 Response body parameters

Parameter	Type	Description
request_id	String	Request ID. Minimum length: **0** Maximum length: **36**
publicip	**PublicipSingleShowResp** object	EIP.

Table 5-15 PublicipSingleShowResp

Parameter	Type	Description
id	String	• Unique ID of the EIP. Minimum length: **0** Maximum length: **36**
project_id	String	• Project ID. Minimum length: **0** Maximum length: **32**
ip_version	Integer	• IP address version. • The value can be: – **4**: IPv4 EIP – **6**: IPv6 EIP Enumerated values: • **4** • **6**
public_ip_address	String	• EIP or IPv6 port address. Minimum length: **0** Maximum length: **36**
public_ipv6_address	String	• Obtained EIP if IPv6 EIPs are available. This parameter does not exist if only IPv4 EIPs are available. Minimum length: **0** Maximum length: **64**
network_type	String	• Network type of an EIP. This parameter is discarded and is not displayed by default. It is inherited by **publicip_pool_name**. Minimum length: **0** Maximum length: **64**

Parameter	Type	Description
status	String	• EIP status. • The value can be: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **NOTIFYING** – **NOTIFY_DELETE** – **PENDING_UPDATE** (Updating) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** Minimum length: **0** Maximum length: **64** Enumerated values: • **FREEZED** • **BIND_ERROR** • **BINDING** • **PENDING_DELETE** • **PENDING_CREATE** • **NOTIFYING** • **NOTIFY_DELETE** • **PENDING_UPDATE** • **DOWN** • **ACTIVE** • **ELB** • **VPN** • **ERROR**
description	String	• Supplementary information about the EIP. • This is customized by users and is not perceived by the system. Minimum length: **0** Maximum length: **256**

Parameter	Type	Description
public_border_group	String	• Whether the resource is in a central region or an edge site. • The value can be **center** or an edge site name. • This resource can only be associated with an EIP of the same region. Minimum length: **1** Maximum length: **64**
created_at	String	• Time (UTC) when an EIP is assigned. • Format: *yyyy-MM-ddTHH:mm:ssZ* Minimum length: **0** Maximum length: **64**
updated_at	String	• Time (UTC) when an EIP is updated. • Format: *yyyy-MM-ddTHH:mm:ssZ* Minimum length: **0** Maximum length: **64**
type	String	• EIP type. Minimum length: **1** Maximum length: **36** Enumerated values: • **EIP** • **DUALSTACK** • **DUALSTACK_SUBNET**
vnic	**VnicInfo** object	• Port information of the instance with an EIP bound. • If the instance with an EIP bound does not depend on a port, the value is **null**.
bandwidth	**PublicipBandwidthInfo** object	Bandwidth bound to an EIP.
enterprise_project_id	String	Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
billing_info	String	• Order information of an EIP. • Order information is available only for yearly/monthly resources. This parameter is left empty for pay-per-use resources. Minimum length: **0** Maximum length: **256**
lock_status	String	• Frozen status of an EIP. • The metadata type indicates that the EIP is frozen due to arrears or security reasons. • The value can be: – **police** – **locked** Minimum length: **0** Maximum length: **64**
associate_instance_type	String	• Type of the instance bound with an EIP. • The value can be: – **PORT** – **NATGW** – **ELB** – **ELBV1** – **VPN** – **null** Minimum length: **0** Maximum length: **64** Enumerated values: • **PORT** • **NATGW** • **ELB** • **ELBV1** • **VPN** • **null**
associate_instance_id	String	• ID of the instance bound with an EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
publicip_pool_id	String	• ID of the network that an EIP belongs to. It is the network ID corresponding to **publicip_pool_name**. Minimum length: **0** Maximum length: **36**
publicip_pool_name	String	• Network type of an EIP, including public EIP pool (for example, **5_bgp** or **5_sbgp**) and dedicated EIP pool. • For details about the dedicated EIP pool, see the APIs about **publcip_pool**. Minimum length: **0** Maximum length: **64**
alias	String	• EIP name. Minimum length: **0** Maximum length: **64**
profile	**ProfileInfo** object	• EIP and metadata. (The parameter is not displayed by default.)
fake_network_type	Boolean	• Whether an EIP can change its BGP type. If the value is **true**, the EIP can change its BGP type. If the value is **false**, the EIP cannot change its BGP type. (The parameter is not displayed by default.) Enumerated values: • **true** • **false**
tags	Array of strings	• User tag. (The parameter is not displayed by default.)
associate_instance_metadata	String	• Record the upper-level ownership of an instance. For example, if **associate_instance_type** is set to **PORT**, this parameter records the **device_id** and **device_owner** information of the port. (This parameter only records information in limited scenarios and is not displayed by default.) Minimum length: **1** Maximum length: **64**

Parameter	Type	Description
associate_mode	String	• Passthrough mode. The parameter is displayed only after the passthrough mode is enabled. Minimum length: **1** Maximum length: **36**
allow_share_bandwidth_types	Array of strings	• Types of the shared bandwidth that an EIP can be added to. If this parameter is left blank, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types. Maximum length: **64**
cascade_delete_by_instance	Boolean	• Whether an EIP can be released together with its instance. (The parameter is not displayed by default.)

Table 5-16 VnicInfo

Parameter	Type	Description
private_ip_address	String	• Private IP address. Minimum length: **0** Maximum length: **36**
device_id	String	• ID of the device that a port belongs to. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
device_owner	String	• Device that the port belongs to. • The value can be: – **network:dhcp** – **network:VIP_PORT** – **network:router_interface_distributed** – **network:router_centralized_snat** • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**

Parameter	Type	Description
vpc_id	String	• VPC ID. Minimum length: **0** Maximum length: **36**
port_id	String	• Port ID. Minimum length: **0** Maximum length: **36**
port_profile	String	• Port profile. Minimum length: **0** Maximum length: **256**
mac	String	• Port MAC address. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vtep	String	• VTEP IP address. Minimum length: **0** Maximum length: **36**
vni	String	• VXLAN ID. Minimum length: **0** Maximum length: **36**
instance_id	String	• ID of the instance that the port belongs to, for example, RDS instance ID. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
instance_type	String	• Type of the instance that the port belongs to, for example, RDS. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**

Table 5-17 PublicipBandwidthInfo

Parameter	Type	Description
id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**
size	Integer	• Bandwidth size. • The value ranges from 5 Mbit/s to 2000 Mbit/s by default. Minimum value: **0** Maximum value: **99999**
share_type	String	• Whether the bandwidth is shared or dedicated. • The value can be: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • IPv6 addresses do not support bandwidth whose type is **WHOLE**. Minimum length: **0** Maximum length: **36**
charge_mode	String	• Whether the billing is based on traffic or bandwidth. • The value can be: – **bandwidth**: billed by bandwidth – **traffic**: billed by traffic – **95peak_plus**: billed by 95th percentile bandwidth (enhanced) Minimum length: **0** Maximum length: **36**
name	String	• Bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Minimum length: **0** Maximum length: **64**
billing_info	String	• Billing information. If **billing_info** is specified, the bandwidth is billed on a yearly/monthly basis. Minimum length: **0** Maximum length: **256**

Table 5-18 ProfileInfo

Parameter	Type	Description
local_network_port	String	• **port_id** in the **5_*xxx*** network (for example, **5_bgp**) of an EIP. Minimum length: **0** Maximum length: **36**
standalone	Boolean	• Whether an EIP is assigned together with a VM. If the value is **true**, the EIP is assigned independently. If the value is **false**, the EIP is assigned together with a VM.
notify_status	String	• EIP assigning status. This parameter is only for internal use of the EIP service. Minimum length: **0** Maximum length: **36** Enumerated values: • **PENDING_CREATE** • **PENDING_UPDATE** • **NOTIFYING** • **NOTIFYED** • **NOTIFY_DELETE**
create_time	String	• Time when an EIP is assigned. Minimum length: **0** Maximum length: **64**
fake_network_type	Boolean	• Whether an EIP can change its BGP type. If the value is **true**, the EIP can change its BGP type. If the value is **false**, the EIP cannot change its BGP type. Enumerated values: • **true** • **false**
create_source	String	• Type of the resource purchased together with an EIP. Minimum length: **0** Maximum length: **36** Enumerated value: • **ecs**
ecs_id	String	• ID of the ECS purchased together with an EIP. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
lock_status	String	• Lock status of an EIP, for example, **POLICE** (frozen due to public security issues) or **LOCKED** (frozen due to common issues). (**ARREAR**: in arrears; **DELABLE**: can be deleted) Minimum length: **0** Maximum length: **36**
freezed_status	String	• EIP frozen status. Minimum length: **0** Maximum length: **36** Enumerated values: • **FREEZED** • **UNFREEZED**
bandwith_info	**BandwidthInfoResp** object	• Bandwidth bound to an EIP.

Table 5-19 BandwidthInfoResp

Parameter	Type	Description
bandwidth_name	String	• Bandwidth name. Minimum length: **0** Maximum length: **256**
bandwidth_number	Integer	• Bandwidth size (Mbit/s). Minimum value: **0** Maximum value: **99999**
bandwidth_type	String	• Bandwidth type. Enumerated values: • **PER** • **WHOLE**
bandwidth_id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation


```
{
  "publicip" : {
    "created_at" : "2022-03-17T09:46:22Z",
    "updated_at" : "2022-03-30T02:46:04Z",
    "lock_status" : null,
    "allow_share_bandwidth_types" : [ "bgp", "sbgp", "share", "share_yidongdanxian", "share_youxuan" ],
    "id" : "006343a1-32bf-4361-958a-efd158153dd0",
    "alias" : null,
    "project_id" : "060576787a80d5762fa2c00f07ddfcf4",
    "ip_version" : 4,
    "public_ip_address" : "88.88.1.141",
    "public_ipv6_address" : null,
    "status" : "DOWN",
    "description" : "",
    "enterprise_project_id" : "0",
    "billing_info" : null,
    "type" : "EIP",
    "vnic" : {
      "private_ip_address" : "172.16.1.235",
      "device_id" : "",
      "device_owner" : "",
      "vpc_id" : "1c30f428-9741-48b2-a788-0b2f359705eb",
      "port_id" : "22d3576d-c042-4f3d-8c7c-1330a2724627",
      "mac" : "fa:16:3e:3a:22:66",
      "vtep" : null,
      "vni" : null,
      "instance_id" : "",
      "instance_type" : "",
      "port_profile" : null
    },
    "bandwidth" : {
      "id" : "149ff19b-5de4-4436-958f-2eca39952e93",
      "size" : 100,
      "share_type" : "PER",
      "charge_mode" : "traffic",
      "name" : "bandwidth-xym-br-eqos",
      "billing_info" : ""
    },
    "associate_instance_type" : "PORT",
    "associate_instance_id" : "22d3576d-c042-4f3d-8c7c-1330a2724627",
    "publicip_pool_id" : "9af5f2e5-1765-4b86-b342-ece52e785c8b",
    "publicip_pool_name" : "5_union",
    "public_border_group" : "center",
    "tags" : [ "key=value" ]
  },
  "request_id" : "ce1a33a85d2e105040497a21bbe58c26"
}
```


Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.1.3 Unbinding an EIP

Function

This API is used to unbind an EIP.

URI

POST /v3/{project_id}/eip/publicips/{publicip_id}/disassociate-instance

Table 5-20 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. Minimum length: **0** Maximum length: **32**
publicip_id	Yes	String	EIP ID. Minimum length: **0** Maximum length: **36**

Request Parameter

Table 5-21 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-22 Response body parameters

Parameter	Type	Description
request_id	String	Request ID. Minimum length: **0** Maximum length: **36**
publicip	**PublicipInstanceResp** object	Response body of unbinding an EIP.

Table 5-23 PublicipInstanceResp

Parameter	Type	Description
id	String	• Unique ID of the EIP. Minimum length: **0** Maximum length: **36**
project_id	String	• Project ID. Minimum length: **0** Maximum length: **32**
ip_version	Integer	• IP address version. • The value can be: – **4**: IPv4 EIP – **6**: IPv6 EIP Enumerated values: • **4** • **6**
public_ip_address	String	• EIP or IPv6 port address. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
status	String	• EIP status. • The value can be: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **NOTIFYING** – **NOTIFY_DELETE** – **PENDING_UPDATE** (Updating) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** Enumerated values: • **FREEZED** • **BIND_ERROR** • **BINDING** • **PENDING_DELETE** • **PENDING_CREATE** • **NOTIFYING** • **NOTIFY_DELETE** • **PENDING_UPDATE** • **DOWN** • **ACTIVE** • **ELB** • **ERROR** • **VPN**
description	String	• Supplementary information about the EIP. • This is customized by users and is not perceived by the system. Minimum length: **1** Maximum length: **255**

Parameter	Type	Description
public_border_group	String	• Whether the resource is in a central region or an edge site. • The value can be **center** or an edge site name. • This resource can only be associated with an EIP of the same region. Minimum length: **1** Maximum length: **64**
created_at	String	• Time (UTC) when an EIP is assigned. • Format: *yyyy-MM-ddTHH:mm:ssZ*
updated_at	String	• Time (UTC) when an EIP is updated. • Format: *yyyy-MM-ddTHH:mm:ssZ*
type	String	• EIP type. Minimum length: **1** Maximum length: **36** Enumerated values: • **EIP** • **DUALSTACK** • **DUALSTACK_SUBNET**
vnic	**VnicInfo** object	• Port information of the instance with an EIP bound. • If the instance with an EIP bound does not depend on a port, the value is **null**.
bandwidth	**PublicipBandwidthInfo** object	• Bandwidth bound to an EIP.
enterprise_project_id	String	• Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**
billing_info	String	• Order information of an EIP. • Order information is available only for yearly/monthly resources. This parameter is left empty for pay-per-use resources. Minimum length: **0** Maximum length: **256**

Parameter	Type	Description
lock_status	String	• Frozen status of an EIP. • The metadata type indicates that the EIP is frozen due to arrears or security reasons. • Value range: **police** or **locked** Minimum length: **0** Maximum length: **64**
associate_instance_type	String	• Type of the instance bound with an EIP. • Value range: **PORT**, **NATGW**, **ELB**, **ELBV1**, **VPN** or **null** Minimum length: **0** Maximum length: **64** Enumerated values: • **PORT** • **NATGW** • **ELB** • **ELBV1** • **VPN** • **null**
associate_instance_id	String	• ID of the instance bound with an EIP. Minimum length: **0** Maximum length: **64**
publicip_pool_id	String	• ID of the network that an EIP belongs to. Network ID corresponding to **publicip_pool_name** Minimum length: **0** Maximum length: **36**
publicip_pool_name	String	• Network type of an EIP, including public EIP pool (for example, **5_bgp** or **5_sbgp**) and dedicated EIP pool. • For details about the dedicated EIP pool, see the APIs about **publcip_pool**. Minimum length: **0** Maximum length: **64**
alias	String	• EIP name. Minimum length: **0** Maximum length: **64**

Table 5-24 VnicInfo

Parameter	Type	Description
private_ip_address	String	• Private IP address. Minimum length: **0** Maximum length: **36**
device_id	String	• ID of the device that a port belongs to. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
device_owner	String	• Device that the port belongs to. • The value can be: – **network:dhcp** – **network:VIP_PORT** – **network:router_interface_distributed** – **network:router_centralized_snat** • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vpc_id	String	• VPC ID. Minimum length: **0** Maximum length: **36**
port_id	String	• Port ID. Minimum length: **0** Maximum length: **36**
port_profile	String	• Port profile. Minimum length: **0** Maximum length: **256**
mac	String	• Port MAC address. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vtep	String	• VTEP IP address. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
vni	String	• VXLAN ID. Minimum length: **0** Maximum length: **36**
instance_id	String	• ID of the instance that the port belongs to, for example, RDS instance ID. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
instance_type	String	• Type of the instance that the port belongs to, for example, RDS. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**

Table 5-25 PublicipBandwidthInfo

Parameter	Type	Description
id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**
size	Integer	• Bandwidth size. • The value ranges from 5 Mbit/s to 2000 Mbit/s by default. Minimum value: **0** Maximum value: **99999**
share_type	String	• Whether the bandwidth is shared or dedicated. • The value can be: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • IPv6 addresses do not support bandwidth whose type is **WHOLE**. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
charge_mode	String	• Whether the billing is based on traffic or bandwidth. • The value can be: – **bandwidth**: billed by bandwidth – **traffic**: billed by traffic – **95peak_plus**: billed by 95th percentile bandwidth (enhanced) Minimum length: **0** Maximum length: **36**
name	String	• Bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Minimum length: **0** Maximum length: **64**
billing_info	String	• Billing information. If **billing_info** is specified, the bandwidth is billed on a yearly/monthly basis. Minimum length: **0** Maximum length: **256**

Example Request

None

Example Response

Status code: 200

Normal response to POST requests

Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.1.4 Binding an EIP

Function

This API is used to bind an EIP.

URI

POST /v3/{project_id}/eip/publicips/{publicip_id}/associate-instance

Table 5-26 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. Minimum length: **0** Maximum length: **32**
publicip_id	Yes	String	EIP ID. Minimum length: **0** Maximum length: **36**

Request Parameters

Table 5-27 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Table 5-28 Request body parameter

Parameter	Mandatory	Type	Description
publicip	Yes	**AssociatePublicipsOption** object	EIP object.

Table 5-29 AssociatePublicipsOption

Parameter	Mandatory	Type	Description
associate_instance_type	Yes	String	• Type of the instance that the port belongs to. • The value can be **PORT**, **NATGW**, **VPN**, or **ELB**. • Constraints: – If neither **associate_instance_type** nor **associate_instance_id** is left empty, the instance is bound. – **associate_instance_type** cannot be empty. – A dual-stack EIP cannot have its bound instance changed. Minimum length: **0** Maximum length: **36** Enumerated values: • **PORT** • **NATGW** • **VPN** • **ELB**
associate_instance_id	Yes	String	• ID of the instance that the port belongs to, for example, RDS instance ID. • Constraints: – If neither **associate_instance_type** nor **associate_instance_id** is left empty, the instance is bound. – **associate_instance_id** cannot be empty. – A dual-stack EIP cannot have its bound instance changed. Minimum length: **0** Maximum length: **36**

Response Parameters

Status code: 200

Table 5-30 Response body parameters

Parameter	Type	Description
request_id	String	Request ID. Minimum length: **0** Maximum length: **36**
publicip	**PublicipInstanceResp** object	Response body of binding an EIP.

Table 5-31 PublicipInstanceResp

Parameter	Type	Description
id	String	• Unique ID of the EIP. Minimum length: **0** Maximum length: **36**
project_id	String	• Project ID. Minimum length: **0** Maximum length: **32**
ip_version	Integer	• IP address version. • The value can be: – **4**: IPv4 EIP – **6**: IPv6 EIP Enumerated values: • **4** • **6**
public_ip_address	String	• EIP or IPv6 port address. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
status	String	• EIP status. • The value can be: – **FREEZED** (Frozen) – **BIND_ERROR** (Binding failed) – **BINDING** (Binding) – **PENDING_DELETE** (Releasing) – **PENDING_CREATE** (Assigning) – **NOTIFYING** – **NOTIFY_DELETE** – **PENDING_UPDATE** (Updating) – **DOWN** (Unbound) – **ACTIVE** (Bound) – **ELB** (Bound to a load balancer) – **VPN** (Bound to a VPN) – **ERROR** Enumerated values: • **FREEZED** • **BIND_ERROR** • **BINDING** • **PENDING_DELETE** • **PENDING_CREATE** • **NOTIFYING** • **NOTIFY_DELETE** • **PENDING_UPDATE** • **DOWN** • **ACTIVE** • **ELB** • **ERROR** • **VPN**
description	String	• Supplementary information about the EIP. • This is customized by users and is not perceived by the system. Minimum length: **1** Maximum length: **255**

Parameter	Type	Description
public_border_group	String	• Whether the resource is in a central region or an edge site. • The value can be **center** or an edge site name. • This resource can only be associated with an EIP of the same region. Minimum length: **1** Maximum length: **64**
created_at	String	• Time (UTC) when an EIP is assigned. • Format: *yyyy-MM-ddTHH:mm:ssZ*
updated_at	String	• Time (UTC) when an EIP is updated. • Format: *yyyy-MM-ddTHH:mm:ssZ*
type	String	• EIP type Minimum length: **1** Maximum length: **36** Enumerated values: • **EIP** • **DUALSTACK** • **DUALSTACK_SUBNET**
vnic	**VnicInfo** object	• Port information of the instance with an EIP bound. • If the instance with an EIP bound does not depend on a port, the value is **null**.
bandwidth	**PublicipBandwidthInfo** object	• Bandwidth bound to an EIP.
enterprise_project_id	String	• Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**
billing_info	String	• Order information of an EIP. • Order information is available only for yearly/monthly resources. This parameter is left empty for pay-per-use resources. Minimum length: **0** Maximum length: **256**

Parameter	Type	Description
lock_status	String	• Frozen status of an EIP. • The metadata type indicates that the EIP is frozen due to arrears or security reasons. • Value range: **police** or **locked** Minimum length: **0** Maximum length: **64**
associate_instance_type	String	• Type of the instance bound with an EIP. • Value range: **PORT**, **NATGW**, **ELB**, **ELBV1**, **VPN** or **null** Minimum length: **0** Maximum length: **64** Enumerated values: • **PORT** • **NATGW** • **ELB** • **ELBV1** • **VPN** • **null**
associate_instance_id	String	• ID of the instance bound with an EIP. Minimum length: **0** Maximum length: **64**
publicip_pool_id	String	• ID of the network that an EIP belongs to. Network ID corresponding to **publicip_pool_name** Minimum length: **0** Maximum length: **36**
publicip_pool_name	String	• Network type of an EIP, including public EIP pool (for example, **5_bgp** or **5_sbgp**) and dedicated EIP pool. • For details about the dedicated EIP pool, see the APIs about **publcip_pool**. Minimum length: **0** Maximum length: **64**
alias	String	• EIP name. Minimum length: **0** Maximum length: **64**

Table 5-32 VnicInfo

Parameter	Type	Description
private_ip_address	String	• Private IP address. Minimum length: **0** Maximum length: **36**
device_id	String	• ID of the device that a port belongs to. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
device_owner	String	• Device that the port belongs to. • The value can be: – **network:dhcp** – **network:VIP_PORT** – **network:router_interface_distributed** – **network:router_centralized_snat** • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vpc_id	String	• VPC ID. Minimum length: **0** Maximum length: **36**
port_id	String	• Port ID. Minimum length: **0** Maximum length: **36**
port_profile	String	• Port profile. Minimum length: **0** Maximum length: **256**
mac	String	• Port MAC address. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **64**
vtep	String	• VTEP IP address. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
vni	String	• VXLAN ID. Minimum length: **0** Maximum length: **36**
instance_id	String	• ID of the instance that the port belongs to, for example, RDS instance ID. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**
instance_type	String	• Type of the instance that the port belongs to, for example, RDS. • The system automatically sets this parameter. Minimum length: **0** Maximum length: **36**

Table 5-33 PublicipBandwidthInfo

Parameter	Type	Description
id	String	• Bandwidth ID. Minimum length: **0** Maximum length: **36**
size	Integer	• Bandwidth size. • The value ranges from 5 Mbit/s to 2000 Mbit/s by default. Minimum value: **0** Maximum value: **99999**
share_type	String	• Whether the bandwidth is shared or dedicated. • The value can be: – **PER**: Dedicated bandwidth – **WHOLE**: Shared bandwidth • IPv6 addresses do not support bandwidth whose type is **WHOLE**. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
charge_mode	String	• Whether the billing is based on traffic or bandwidth. • The value can be: – **bandwidth**: billed by bandwidth – **traffic**: billed by traffic – **95peak_plus**: billed by 95th percentile bandwidth (enhanced) Minimum length: **0** Maximum length: **36**
name	String	• Bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Minimum length: **0** Maximum length: **64**
billing_info	String	• Billing information. If **billing_info** is specified, the bandwidth is billed on a yearly/monthly basis. Minimum length: **0** Maximum length: **256**

Example Request

```
{
  "publicip" : {
    "associate_instance_id" : "921b9dc7-8151-41e1-b83c-d50fe959592a",
    "associate_instance_type" : "PORT"
  }
}
```

Example Response

Status code: 200

Normal response to POST requests

Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.1.5 Querying the Number of Available EIPs

Function

This API is used to query the number of available EIP in an EIP pool.

URI

POST /v3/{project_id}/eip/resources/available

Table 5-34 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 5-35 Request body parameters

Parameter	Mandatory	Type	Description
type	No	String	EIP pool type.
limit	Yes	Integer	Number of available EIPs in an EIP pool.

Response Parameter

Status code: 200

Table 5-36 Response body parameter

Parameter	Type	Description
result	Integer	• Returned result.

Example Request

```
{
  "limit" : 5,
  "type" : "5_bgp"
}
```

Example Response

Status code: 200

OK

```
{
  "result" : 5
}
```

Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.2 Shared Bandwidth Types

5.2.1 Querying Shared Bandwidth Types of a Specified Tenant

Function

This API is used to query shared bandwidth types of a specified tenant.

URI

GET /v3/{project_id}/eip/share-bandwidth-types

Table 5-37 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Project ID. Minimum length: **0** Maximum length: **32**

Table 5-38 Query parameters

Parameter	Mandatory	Type	Description
fields	No	String	• Field. Format: "fields=id&fields=bandwidth_type&..." • Supported fields: **id**, **bandwidth_type**, **name_en**, **name_zh**, **created_at**, **update_at**, **public_border_group**, and **description**. Minimum length: **0** Maximum length: **1024**

Parameter	Mandatory	Type	Description
id	No	String	• Bandwidth type ID. Minimum length: **0** Maximum length: **36**
bandwidth_type	No	String	• Bandwidth type. Minimum length: **1** Maximum length: **36**
name_en	No	String	• Bandwidth type in English. Minimum length: **0** Maximum length: **256**
name_zh	No	String	• Bandwidth type in Chinese. Minimum length: **0** Maximum length: **256**
public_border_group	No	String	• Whether the bandwidth type is in a central region or an edge site. Minimum length: **0** Maximum length: **36**
sort_key	No	String	• Sort. Format: "sort_key=id&sort_dir=asc" • Supported fields: **id**, **bandwidth_type**, and **public_border_group**. Minimum length: **0** Maximum length: **1024**
sort_dir	No	String	• Sorting direction. • The value can be **asc** or **desc** Minimum length: **0** Maximum length: **1024**
limit	No	Integer	• Number of records returned on each page. • The value ranges from **0** to **2,000**. The maximum value varies by region. Minimum value: **0** Maximum value: **2000**

Request Parameter

Table 5-39 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-40 Response body parameters

Parameter	Type	Description
share_bandwidth_types	Array of **ShareBandwidthTypeShowResp** objects	Shared bandwidth type.
request_id	String	Request ID.
page_info	**PageInfoOption** object	Pagination page number information.

Table 5-41 ShareBandwidthTypeShowResp

Parameter	Type	Description
id	String	Bandwidth type ID. Minimum length: **0** Maximum length: **36**
bandwidth_type	String	Bandwidth type. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
public_border_group	String	Central region or edge site. The parameter is displayed by default. Minimum length: **0** Maximum length: **64**
created_at	String	Assigning time Minimum length: **0** Maximum length: **64**
updated_at	String	Update time Minimum length: **0** Maximum length: **64**
name_en	String	Bandwidth type in English. Minimum length: **0** Maximum length: **256**
name_zh	String	Bandwidth type in Chinese. Minimum length: **0** Maximum length: **256**
description	String	Bandwidth type description. Minimum length: **0** Maximum length: **1024**

Table 5-42 PageInfoOption

Parameter	Type	Description
previous_marker	String	Marker value of the previous page. Minimum length: **0** Maximum length: **36**
next_marker	String	Marker value of the next page. Minimum length: **0** Maximum length: **36**
current_count	Integer	Total number of data records on the current page. Minimum value: **0** Maximum value: **99999**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation


```
{
  "share_bandwidth_types" : [ {
    "id" : "1b478471-eaf1-4a71-9c77-edba89f62016",
    "bandwidth_type" : "share",
    "name_en" : "share_bandwidth_type",
    "description" : null,
    "created_at" : "2021-09-29T04:19:22Z",
    "updated_at" : "2021-09-29T04:19:22Z",
    "public_border_group" : "center"
  }, {
    "id" : "2bbb2990-e908-46a7-b664-03d3084af032",
    "bandwidth_type" : "edgeshare",
    "name_en" : "edge_share_bandwidth_type",
    "description" : null,
    "created_at" : "2021-09-29T04:19:22Z",
    "updated_at" : "2021-09-29T04:19:22Z",
    "public_border_group" : "az1"
  } ],
  "request_id" : "07f05e3d-b688-43f8-bda2-e9d10d2352e9",
  "page_info" : {
    "previous_marker" : "1b478471-eaf1-4a71-9c77-edba89f62016",
    "current_count" : 2
  }
}
```


Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.3 Common Pools

5.3.1 Querying Common Pools

Function

This API is used to query common pools.

URI

GET /v3/{project_id}/eip/publicip-pools/common-pools

Table 5-43 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Project ID. Minimum length: **0** Maximum length: **32**

Table 5-44 Query parameters

Parameter	Mandatory	Type	Description
fields	No	String	• Field. Format: "fields=id&fields=name&.." • Supported fields: **id**, **name**, **status**, **type**, **used**, **allow_share_bandwidth_types**, and **public_border_group**. Minimum length: **0** Maximum length: **1024**
name	No	String	• Common pool name. Minimum length: **0** Maximum length: **36**
public_border_group	No	String	• Whether the common pool is in a central region or an edge site. Minimum length: **0** Maximum length: **64**

Request Parameter

Table 5-45 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-46 Response body parameters

Parameter	Type	Description
common_pools	Array of **CommonPoolDict** objects	Common pool.
request_id	String	Request ID.

Table 5-47 CommonPoolDict

Parameter	Type	Description
name	String	• Common pool name. Minimum length: **0** Maximum length: **36**
status	String	• Common pool status. Minimum length: **0** Maximum length: **36**
type	String	• Common pool type, such as **bgp** and **sbgp**. Minimum length: **0** Maximum length: **36**
used	Integer	• Number of used EIPs. Minimum value: **0** Maximum value: **99999**
public_border_group	String	• Whether the resource is in a central region or an edge site. • The value can be **center** or an edge site name. • This resource can only be associated with an EIP of the same region. Minimum length: **1** Maximum length: **64**
id	String	• Common pool ID. The parameter is not displayed by default. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
allow_share_bandwidth_types	Array of strings	• Types of the shared bandwidth that an EIP can be added to. If this parameter is left blank, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types. Maximum length: **64**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation

```
{
  "common_pools" : [ {
    "name" : "5_bgp",
    "status" : "active",
    "type" : "bgp",
    "used" : 99,
    "public_border_group" : "center",
    "allow_share_bandwidth_types" : [ "share" ]
  } ],
  "request_id" : "4a06c169-cc67-4d94-a786-2d70ef09b100"
}
```

Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.3.2 Querying EIP Pools

Function

This API is used to query EIP pools.

URI

GET /v3/{project_id}/eip/publicip-pools

Table 5-48 Path parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Project ID. Minimum length: **0** Maximum length: **32**

Table 5-49 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	• Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. Minimum length: **0** Maximum length: **36**
limit	No	Integer	• Number of records returned on each page. • The value ranges from **0** to **2,000**. The maximum value varies by region. Minimum value: **0** Maximum value: **2000**
fields	No	String	• Field. Format: "fields=id&fields=name&..." • Supported fields: **id**, **name**, **size**, **used**, **project_id**, **status**, **billing_info**, **created_at**, **updated_at**, **type**, **shared**, **is_common**, **description**, **tags**, **enterprise_project_id**, **allow_share_bandwidth_types**, and **public_border_group**. Minimum length: **0** Maximum length: **1024**

Parameter	Mandatory	Type	Description
sort_key	No	String	• Sort. Format: "sort_key=id&sort_dir=asc" • Supported fields: **id**, **name**, **created_at**, **updated_at**, and **public_border_group**. Minimum length: **0** Maximum length: **36**
sort_dir	No	String	• Sorting direction. • The value can be **asc** or **desc** Minimum length: **0** Maximum length: **16**
id	No	String	• Filter by **id**. Minimum length: **0** Maximum length: **36**
name	No	String	• Filter by **name**. Minimum length: **0** Maximum length: **128**
size	No	Integer	• Filter by **size**. Minimum value: **0** Maximum value: **999999**
status	No	String	• Filter by **status**. Minimum length: **0** Maximum length: **36**
type	No	String	• Filter by **type**. Minimum length: **0** Maximum length: **36**
description	No	String	• Filter by **description**. Minimum length: **0** Maximum length: **1024**
public_border_group	No	String	• Filter by **public_border_group**. Minimum length: **0** Maximum length: **64**

Request Parameter

Table 5-50 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-51 Response body parameters

Parameter	Type	Description
publicip_pools	Array of **PublicipPoolShowResp** objects	EIP pool.
request_id	String	Request ID.
page_info	**PageInfoOption** object	Pagination page number information.

Table 5-52 PublicipPoolShowResp

Parameter	Type	Description
id	String	• EIP pool ID. Minimum length: **1** Maximum length: **36**
name	String	• EIP pool name. Minimum length: **0** Maximum length: **64**
status	String	• EIP pool status. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
type	String	• EIP pool type. • The value can be: – **spec_bgp**: Dynamic – **spec_sbgp**: Static Enumerated values: • **spec_bgp** • **spec_sbgp**
description	String	• Supplementary information about the EIP pool. Minimum length: **0** Maximum length: **1024**
project_id	String	• Tenant ID. Minimum length: **1** Maximum length: **36**
size	Integer	• EIP pool size. Minimum value: **0** Maximum value: **999999**
used	Integer	• Number of used EIPs. Minimum value: **0** Maximum value: **999999**
created_at	String	• Time when an EIP pool is assigned. Minimum length: **0** Maximum length: **64**
updated_at	String	• Time when an EIP pool is updated. Minimum length: **0** Maximum length: **64**
billing_info	**BillingInfoDict** object	Order information, which is available only for yearly/monthly resources.
public_border_group	String	• Whether the EIP pool is in a central region or an edge site. The value can be **center**. Minimum length: **0** Maximum length: **64**
shared	Boolean	• Whether the EIP pool is shared.
is_common	Boolean	• Whether the EIP pool is a common pool.

Parameter	Type	Description
tags	Array of TagsInfo objects	• User tag. (The parameter is not displayed by default.)
enterprise_project_id	String	• Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**
allow_share_bandwidth_types	Array of strings	• Types of the shared bandwidth that an EIP can be added to. If this parameter is left blank, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types. Maximum length: **64**

Table 5-53 BillingInfoDict

Parameter	Type	Description
order_id	String	• Order information. Minimum length: **0** Maximum length: **64**
product_id	String	• Product ID. Minimum length: **0** Maximum length: **64**

Table 5-54 TagsInfo

Parameter	Type	Description
key	String	• Key. The tag key of a resource must be unique. Minimum length: **0** Maximum length: **64**
value	String	• Values. Minimum length: **0** Maximum length: **256**

Table 5-55 PageInfoOption

Parameter	Type	Description
previous_marker	String	Marker value of the previous page. Minimum length: **0** Maximum length: **36**
next_marker	String	Marker value of the next page. Minimum length: **0** Maximum length: **36**
current_count	Integer	Total number of data records on the current page. Minimum value: **0** Maximum value: **99999**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation

```
{
  "publicip_pools" : [ {
    "id" : "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "name" : "test_pool_xxx",
    "status" : "active",
    "shared" : true,
    "is_common" : false,
    "enterprise_project_id" : 0,
    "type" : "spec_bgp",
    "project_id" : "8b7e35ad379141fc9df3e178bd64f55c",
    "size" : 100,
    "used" : 20,
    "billing_info" : {
      "order_id" : "CS20081917179HW3H",
      "product_id" : "00301-335034-0--0"
    },
    "created_at" : "2020-07-17T09:25:53Z",
    "updated_at" : "2020-07-17T09:25:53Z",
    "description" : "test",
    "public_border_group" : "center",
    "allow_share_bandwidth_types" : [ "share" ]
  } ],
  "request_id" : "4a06c169-cc67-4d94-a786-2d70ef09b100",
  "page_info" : {
    "previous_marker" : "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "current_count" : 1
  }
}
```

Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

5.3.3 Querying EIP Pool Details

Function

This API is used to query EIP pool details.

URI

GET /v3/{project_id}/eip/publicip-pools/{publicip_pool_id}

Table 5-56 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. Minimum length: **1** Maximum length: **32**
publicip_pool_id	Yes	String	EIP pool ID, which uniquely identifies the EIP pool. Minimum length: **36** Maximum length: **36**

Table 5-57 Query parameter

Parameter	Mandatory	Type	Description
fields	No	String	• Field. Format: "fields=id&fields=name&..." • Supported fields: **id**, **name**, **size**, **used**, **project_id**, **status**, **billing_info**, **created_at**, **updated_at**, **type**, **shared**, **is_common**, **description**, **tags**, **enterprise_project_id**, **allow_share_bandwidth_types**, and **public_border_group**. Minimum length: **0** Maximum length: **1024**

Request Parameter

Table 5-58 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token. Minimum length: **0** Maximum length: **4096**

Response Parameters

Status code: 200

Table 5-59 Response body parameters

Parameter	Type	Description
publicip_pool	**PublicipPoolShowResp** object	EIP pool details.
request_id	String	Request ID.

Table 5-60 PublicipPoolShowResp

Parameter	Type	Description
id	String	• EIP pool ID. Minimum length: **1** Maximum length: **36**
name	String	• EIP pool name. Minimum length: **0** Maximum length: **64**
status	String	• EIP pool status. Minimum length: **0** Maximum length: **36**

Parameter	Type	Description
type	String	• EIP pool type. • The value can be: – **spec_bgp**: Dynamic – **spec_sbgp**: Static Enumerated values: • **spec_bgp** • **spec_sbgp**
description	String	• Supplementary information about the EIP pool. Minimum length: **0** Maximum length: **1024**
project_id	String	• Tenant ID. Minimum length: **1** Maximum length: **36**
size	Integer	• EIP pool size. Minimum value: **0** Maximum value: **999999**
used	Integer	• Number of used EIPs. Minimum value: **0** Maximum value: **999999**
created_at	String	• Time when an EIP pool is assigned. Minimum length: **0** Maximum length: **64**
updated_at	String	• Time when an EIP pool is updated. Minimum length: **0** Maximum length: **64**
billing_info	**BillingInfoDict** object	Order information, which is available only for yearly/monthly resources.
public_border_group	String	• Whether the EIP pool is in a central region or an edge site. The value can be **center**. Minimum length: **0** Maximum length: **64**
shared	Boolean	• Whether the EIP pool is shared.
is_common	Boolean	• Whether the EIP pool is a common pool.

Parameter	Type	Description
tags	Array of TagsInfo objects	• User tag. (The parameter is not displayed by default.)
enterprise_project_id	String	• Enterprise project ID. The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). This is the ID of the enterprise project that you associate with the EIP when you assign the EIP. Minimum length: **0** Maximum length: **36**
allow_share_bandwidth_types	Array of strings	• Types of the shared bandwidth that an EIP can be added to. If this parameter is left blank, the EIP cannot be added to any shared bandwidth. • The EIP can be added only to the shared bandwidth of these types. Maximum length: **64**

Table 5-61 BillingInfoDict

Parameter	Type	Description
order_id	String	• Order information. Minimum length: **0** Maximum length: **64**
product_id	String	• Product ID. Minimum length: **0** Maximum length: **64**

Table 5-62 TagsInfo

Parameter	Type	Description
key	String	• Key. The tag key of a resource must be unique. Minimum length: **0** Maximum length: **64**
value	String	• Values. Minimum length: **0** Maximum length: **256**

Example Request

None

Example Response

Status code: 200

Normal response to the GET operation


```
{
  "publicip_pool" : {
    "id" : "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "name" : "test_pool_xxx",
    "status" : "active",
    "shared" : true,
    "is_common" : false,
    "enterprise_project_id" : 0,
    "type" : "spec_bgp",
    "project_id" : "8b7e35ad379141fc9df3e178bd64f55c",
    "size" : 100,
    "used" : 20,
    "billing_info" : {
      "order_id" : "CS20081917179HW3H",
      "product_id" : "00301-335034-0--0"
    },
    "created_at" : "2020-07-17T09:25:53Z",
    "updated_at" : "2020-07-17T09:25:53Z",
    "description" : "test",
    "public_border_group" : "center",
    "allow_share_bandwidth_types" : [ "share" ]
  },
  "request_id" : "4a06c169-cc67-4d94-a786-2d70ef09b100"
}
```


Status Codes

See **Status Codes**.

Error Codes

See **Error Codes**.

6 Native OpenStack Neutron APIs V2.0

6.1 API Version Information

6.1.1 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 6-1 Response parameter

Parameter	Type	Description
versions	Array of **version** objects	Specifies the API version list. For details, see **Table 6-2**.

Table 6-2 version objects

Parameter	Type	Description
status	String	Specifies the API version status. Possible values are as follows: • **CURRENT** • **STABLE** • **DEPRECATED**
id	String	Specifies the API version.
links	Array of **link** objects	Specifies the link list. For details, see **Table 6-3**.

Table 6-3 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**.

6.1.2 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 6-4 Request parameter

Parameter	Type	Mandatory	Description
limit	Integer	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 **True** or **False**.

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": "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**.

6.2 Floating IP Address

6.2.1 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 6-5 describes the parameters.

Table 6-5 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the floating IP address ID.
floating_ip_address	No	String	Specifies the floating IPv4 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 **GET /v2.0/networks?router:external=True** or **GET /v2.0/networks?name={floating_network}** or run the **neutron net-external-list** 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.

Parameter	Mandatory	Type	Description
limit	Integer	No	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Parameter	Mandatory	Type	Description
marker	String	No	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. ● If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. ● If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. ● If the value of the parameter **marker** is set to the resource

Parameter	Mandatory	Type	Description
			ID of the 10th record and the parameter **limit** is not passed, resource records starting from the 11th records (including 11th) will be returned.
page_reverse	Boolean	No	Specifies the page direction. The value can be **True** or **False**.

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

Table 6-6 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Response Message

Table 6-7 Response parameter

Parameter	Type	Description
floatingips	Array of **floatingip** objects	Specifies the floating IP address list. For details, see **Table 6-8**.
floatingips_links	Array of **floatingips_link** objects	Specifies the floating IP address object list. For details, see **Table 6-9**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-8 floatingip objects

Parameter	Type	Description
status	String	Specifies the floating IP address status. The value can be **ACTIVE**, **DOWN**, or **ERROR**. • **DOWN** indicates that the floating IP address has not been bound. • **ACTIVE** indicates that the floating IP address has been bound. • **ERROR** indicates that the floating IP address is abnormal.
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.

Parameter	Type	Description
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.
dns_domain	String	Specifies the DNS domain.
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-9 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": "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**.

6.2.2 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

Table 6-10 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Response Message

Table 6-11 Response parameter

Parameter	Type	Description
floatingip	**floatingip** object	Specifies the floating IP address list. For details, see **Table 6-12**.

Table 6-12 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be **ACTIVE**, **DOWN**, or **ERROR**. • **DOWN** indicates that the floating IP address has not been bound. • **ACTIVE** indicates that the floating IP address has been bound. • **ERROR** indicates that the floating IP address is abnormal.
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.

Attribute	Type	Description
tenant_id	String	Specifies the project ID.
dns_name	String	Specifies the DNS name.
dns_domain	String	Specifies the DNS domain.
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: *yyyy-MM-ddTHH:mm:ss*

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**.

6.2.3 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 6-13 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 6-14 Request parameter

Parameter	Type	Mandatory	Description
floatingip	**floatingip** object	Yes	Specifies the floating IP address list. For details, see **Table 6-15**.

Table 6-15 floatingip objects

Parameter	Mandatory	Type	Description
floating_ip_address	No	String	Specifies the floating IP address.

Parameter	Mandatory	Type	Description
floating_network_id	Yes	String	Specifies the external network ID. You can only use fixed external network. You can use **GET /v2.0/networks?router:external=True** or **GET /v2.0/networks?name={floating_network}** or run the **neutron net-external-list mode** 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 6-16 Response parameter

Parameter	Type	Description
floatingip	**floatingip** object	Specifies the floating IP address list. For details, see **Table 6-17**.

Table 6-17 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be **ACTIVE**, **DOWN**, or **ERROR**. • **DOWN** indicates that the floating IP address has not been bound. • **ACTIVE** indicates that the floating IP address has been bound. • **ERROR** indicates that the floating IP address is abnormal.

Attribute	Type	Description
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.
dns_name	String	Specifies the DNS name.
dns_domain	String	Specifies the DNS domain.

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**.

6.2.4 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.

NOTE

This API has the following constraints:

- If a floating IP address that you are binding is in the **error** state, unbind the IP address first.
- Do not associate a port that has a floating IP address associated to another floating IP address. You must first disassociate the port from the IP address and then associate it with another IP address.

URI

PUT /v2.0/floatingips/{floatingip_id}

Table 6-18 describes the parameters.

Table 6-18 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 6-19 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

Table 6-20 Request parameter

Parameter	Type	Mandatory	Description
floatingip	**floatingip** object	Yes	Specifies the floating IP address list. For details, see **Table 6-21**.

Table 6-21 floatingip objects

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

Response Message

Table 6-22 Response parameter

Parameter	Type	Description
floatingip	**floatingip** object	Specifies the floating IP address list. For details, see **Table 6-23**.

Table 6-23 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be **ACTIVE**, **DOWN**, or **ERROR**. • **DOWN** indicates that the floating IP address has not been bound. • **ACTIVE** indicates that the floating IP address has been bound. • **ERROR** indicates that the floating IP address is abnormal.
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.
dns_name	String	Specifies the DNS name.
dns_domain	String	Specifies the DNS domain.

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**.

6.2.5 Deleting a Floating IP Address

Function

This API is used to delete a floating IP address.

URI

DELETE /v2.0/floatingips/{floatingip_id}

Table 6-24 describes the parameters.

Table 6-24 Parameter description

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

Request Message

Table 6-25 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token. The token can be obtained by calling the IAM API used for obtaining a user token. The value of **X-Subject-Token** in the response header is the user token.

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**.

7 Application Examples

7.1 Binding an EIP to an ECS

Scenarios

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

Prerequisites

- You have created an ECS. For details, see **Creating an ECS**.
- 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 a token for authentication, you can cache it to avoid frequent calling.

Procedure

1. Obtain the NIC information based on the ECS ID. For details, see **Querying a Port**.
   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.
   a. Send **POST https://***Endpoint***/v1/***project_id***/publicips**. 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": {
        "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**.
3. Bind the EIP to 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": "02c72193-efec-42fb-853b-c33f2b802467"
    }
}
```

d. Check the response message.

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

```
{
  "publicip": {
    "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "status": "ACTIVE",
    "type": "5_bgp",
    "port_id": "02c72193-efec-42fb-853b-c33f2b802467",
    "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_id": "02da78da-4fb0-4880-b512-f516cdeb8ef3",
    "bandwidth_name": "test",
    "bandwidth_share_type": "PER",
    "bandwidth_size": 1,
    "profile": {},
    "enterprise_project_id": "0",
    "ip_version": 4
  }
}
```

- For details about the error codes when the request is abnormal, see **Error Codes**.

7.2 Unbinding an EIP from an ECS

Scenarios

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

Prerequisites

- You have created an ECS. For details, see **Creating an ECS**.
- 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 a 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_id": "02da78da-4fb0-4880-b512-f516cdeb8ef3",
    "bandwidth_name": "test",
    "bandwidth_share_type": "PER",
    "bandwidth_size": 1,
    "enterprise_project_id": "0",
    "profile": {},
    "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": "DOWN",
    "type": "5_bgp",
    "public_ip_address": "10.xx.xx.162",
    "bandwidth_id": "02da78da-4fb0-4880-b512-f516cdeb8ef3",
    "bandwidth_name": "test",
    "bandwidth_share_type": "PER",
    "bandwidth_size": 1,
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 01:33:18",
    "enterprise_project_id": "0",
    "profile": {}
    "ip_version": 4
  }
}
```

– For details about the error codes when the request is abnormal, see **Error Codes**.

7.3 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

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 a 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**. 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
    }
}
```

   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*. 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": "1bffc5f2-ff19-45a6-96d2-dfdca49cc387",
        "name": "bandwidth123",
        "size": 10,
        "share_type": "WHOLE",
        "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.

a. Send **POST https://***Endpoint***/v1/***project_id***/publicips**. 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": {
        "type": "5_bgp",
        "ip_version": 6
    },
    "bandwidth": {
        "name": "bandwidth123",
        "size": 10,
        "share_type": "WHOLE",
        "id":"1bffc5f2-ff19-45a6-96d2-dfdca49cc387"
    },
    "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.
   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.

```
{
    "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": "1bffc5f2-ff19-45a6-96d2-dfdca49cc387",
        "bandwidth_name": "bandwidth123",
        "bandwidth_share_type": "WHOLE",
        "bandwidth_size": 10,
        "profile": {},
        "enterprise_project_id": "a380829c-db6f-4db3-b5b6-cc377f7a3ff8",
        "ip_version": 4
    }
}
```


8 Permissions Policies and Supported Actions

8.1 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?" in the *Identity and Access Management User Guide*.

  NOTE

  √: supported; x: not supported

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

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

8.2 EIP

Permission	API	Action
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

8.3 Bandwidth

Permission	API	Action
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

8.4 Bandwidth (V2.0)

Permission	API	Action
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

8.5 EIP Tags

Permission	API	Action
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

8.6 Floating IP Address (OpenStack Neutron API)

Permission	API	Action
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

8.7 Precautions for API Permissions

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

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.VPCnetwork ACL

Metrics

Table A-1 EIP and bandwidth metrics

ID	Name	Description	Value Range	Monitored Object	Monitoring Interval (Raw Data)
upstream_bandwidth	Outbound Bandwidth	Network rate of outbound traffic (Previously called "Upstream Bandwidth") Unit: bit/s	≥ 0 bit/s	Bandwidth or EIP	1 minute

ID	Name	Description	Value Range	Monitored Object	Monitoring Interval (Raw Data)
downstream_bandwidth	Inbound Bandwidth	Network rate of inbound traffic (Previously called "Downstream Bandwidth") Unit: bit/s	≥ 0 bit/s	Bandwidth or EIP	1 minute
upstream_bandwidth_usage	Outbound Bandwidth Usage	Usage of outbound bandwidth in the unit of percent.	0% to 100%	Bandwidth or EIP	1 minute
up_stream	Outbound Traffic	Network traffic going out of the cloud platform in a minute (Previously called "Upstream Traffic") Unit: byte	≥ 0 bytes	Bandwidth or EIP	1 minute
down_stream	Inbound Traffic	Network traffic going into the cloud platform in a minute (Previously called "Downstream Traffic") Unit: byte	≥ 0 bytes	Bandwidth or EIP	1 minute

Dimension

Key	Value
publicip_id	EIP ID
bandwidth_id	Bandwidth ID

A.2 Status Codes

Table A-2 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 A-3 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.
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.

Returned Value	Description
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.

A.3 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

Module	Status Codes	Error Code	Message	Description	Handling Measure
Public	400	VPC.0002	Available zone Name is null.	The AZ is left blank.	Check whether the **availability_zone** field in the request body for creating a subnet is left blank.
	404	VPC.0003	VPC does not exist.	The VPC does not exist.	Check whether the VPC ID is correct or whether the VPC exists under the tenant.
	400	VPC.0004	VPC is not active, please try later.	The VPC status is abnormal.	Try again later or contact technical support.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	401	VPC.0009	real-name authentication fail.	Real-name authentication fails.	Contact technical support.
Public	400	VPC.0007	urlTenantId is not equal tokenTenantId	Inconsistent tenant IDs.	The tenant ID in the URL is different from that parsed in the token.
	401	VPC.0008	Invalid token in the header.	Invalid token.	Check whether the token in the request header is valid.
	403	VPC.2701	Token not allowed to do this action.	You do not have the permission to perform this operation, or your account balance is insufficient.	Check whether the account balance is insufficient or whether your account has been frozen.
Public	403	VPC.0010	Rules on xx by ** disallowed by policy	Insufficient permissions to make calls to the underlying system.	Obtain the required permissions.
	403	VPC.2201	Policy doesn't allow <x:x:x> to be performed	Insufficient fine-grained permissions.	Obtain the required permissions.
Public	400	VPC.0014	This enterpriseProject status is disable.	The enterprise project is unavailable.	Use the ID of another available enterprise project.
	400	VPC.0011	EnterpriseProjectId is invalid	Invalid enterprise project ID.	Enter a valid enterprise project ID.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	500 409	VPC.0304	createBandwidth error. NO QUOTAS for shareBandwidthIP! Query routers fail.	An internal error occurs when operations are being performed on the bandwidth.	Contact technical support for handling the error based on the displayed error message.
Assigning an EIP	400	VPC.0301	Bandwidth name or share_type is invalid.	The specified bandwidth parameter for assigning an EIP is invalid.	Check whether the specified bandwidth parameter is valid.
	400	VPC.0501	Bandwidth share_type is invalid.	Invalid EIP parameters.	Check whether the parameter values are valid based on the returned error message and API reference document.
	403	VPC.0502	Tenant status is op_restricted.	You are not allowed to assign the EIP.	Check whether the account balance is insufficient or whether your account has been frozen.
	500	VPC.0503	Creating publicIp failed.	Failed to assign the EIP.	Contact technical support.
	500	VPC.0504	FloatIp is null.	Failed to assign the EIP because no IP address is found.	Contact technical support.
	500	VPC.0508	Port is invalid.	Port-related resources could not be found.	Contact technical support.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	409	VPC.0510	Floatingip has already associated with port.	The EIP has already been bound to another ECS.	Unbind the EIP from the ECS.
	409	VPC.0511	Port has already associated with floatingip.	The port has already been bound with an EIP.	Disassociate the port from the EIP.
	409	VPC.0521	Quota exceeded for resources: ['floatingip'].	Insufficient EIP quota.	Release the unbound EIPs or request to increase the EIP quota.
	409	VPC.0522	The IP address is in use.	The IP address is invalid or in use.	Check whether the IP address format is valid or replace it with another IP address.
	409	VPC.0532	No more IP addresses available on network.	Failed to assign the IP address because no IP addresses are available.	Release unbound EIPs or try again later.
Querying an EIP	400	VPC.0501	Invalid floatingip_id.	Invalid EIP parameters.	Check whether the EIP ID is valid.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.
	500	VPC.0514	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.

Module	Status Codes	Error Code	Message	Description	Handling Measure
Querying EIPs	400	VPC.0501	Invalid limit.	Invalid EIP parameters.	Check whether the parameter values are valid based on the returned error message and API reference document.
Releasing an EIP	400	VPC.0501	Invalid param.	Invalid EIP parameters.	Contact technical support.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.
	409	VPC.0512	Resource status is busy, try it again later.	The EIP status is abnormal.	Try again later or contact technical support.
	500	VPC.0513	getElementByKey error.	Network resources cannot be found.	Contact technical support.
	500	VPC.0516	Publicip is in used by ELB.	Failed to release the EIP because it is being used by a load balancer.	Unbind the EIP from the load balancer.
	409	VPC.0517	Floatingip has associated with port, please disassociate it firstly.	Failed to release the EIP because it is bound to an ECS.	Unbind the EIP from the ECS.
	500	VPC.0518	Public IP has firewall rules.	Failed to release the EIP because it is being used by a network ACL.	Contact technical support.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	409	VPC.0525	The FloatingIp is billing, can not delete.	An EIP whose billing mode is yearly/monthly cannot be deleted directly.	Perform rollback operations.
Updating an EIP	400	VPC.0501	Port id is invalid.	Invalid EIP parameters.	Check whether the port ID is valid.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.
	500	VPC.0509	Floating ip double status is invalid.	The port has already been associated with an EIP.	Disassociate the port from the EIP.
	409	VPC.0510	Floatingip has already associated with port.	The EIP has already been bound to another ECS.	Unbind the EIP from the ECS.
	409	VPC.0511	Port has already associated with floatingip.	Failed to bind the EIP to the ECS because another EIP has already been bound to the ECS.	Unbind the EIP from the ECS.
	409	VPC.0512	Resource status is busy, try it again later.	The EIP status is abnormal.	Try again later or contact technical support.
	404/500	VPC.0514	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Querying a bandwidth	400	VPC.0301	getBandwidth error bandwidthId is invalid.	The bandwidth parameters are incorrect.	Check whether the bandwidth ID is valid.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	404	VPC.0306	No Eip bandwidth exist with id.	The bandwidth object does not exist.	The bandwidth object to be queried does not exist.
	500	VPC.0302	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Querying bandwidths	400	VPC.0301	Get bandwidths error limit is invalid.	The bandwidth parameters are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	404	VPC.0306	No Eip bandwidth exist with id.	The bandwidth object does not exist.	The bandwidth object to be queried does not exist.
	500	VPC.0302	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Updating a bandwidth	400	VPC.0301	updateBandwidth input param is invalid.	The bandwidth parameters are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0302	Neutron Error.	Failed to obtain underlying resources.	Check whether the Neutron service is normal or contact technical support.

Module	Status Codes	Error Code	Message	Description	Handling Measure
	500	VPC.0305	updateBandwidth error.	An internal error occurs during the bandwidth update.	Contact technical support.
Assigning a shared bandwidth	400	VPC.0310	NO QUOTAS for shareBandwidth!	Insufficient shared bandwidth quota.	Delete the shared bandwidth that is no longer required or contact technical support.
Adding an EIP to or removing an EIP from a shared bandwidth	400	VPC.0301	Invalid publicip_id	Invalid EIP.	Check whether the value of **publicip_id** in **publicip_info** is valid.
	400	VPC.0323	publicIp can not be operate with this bandwidth	Failed to add an EIP to or remove an EIP from a shared bandwidth.	Check whether the shared bandwidth or EIP is normal.
Querying the Quota	400	VPC.1207	resource type is invalid.	The specified resource type does not exist.	Use an existing resource type.

A.4 Obtaining a Project ID

Scenarios

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

- **Obtain the Project ID by Calling an API**
- **Obtain the Project ID from the Console**

Obtain the Project ID by Calling an API

You can obtain a project ID by calling the API used to **query projects based on specified criteria**.

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

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

```
{
    "projects": [
        {
            "domain_id": "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.

B Change History

Released On	Description
2023-03-15	This issue is the second official release. Added the following sections: • **Job Status** • **Batch Operations on EIPs** • **Bandwidth Add-On Packages** • **Auxiliary APIs for EIPs** • **EIPs** • **Shared Bandwidth Types** • **Common Pools**
2022-08-30	This issue is the first official release.

