

ROMA Connect

API Reference

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1 Before You Start

1.1 Overview

ROMA Connect is a full-stack application & data integration platform. It provides message, data, API, and device integration to simplify enterprise cloudification and support cross-regional integration for cloud and on-premises applications, helping enterprises achieve digital transformation.

You can use APIs provided in this document to perform operations on ROMA Connect, such as creating, deleting, and modifying APIs, and adding custom backends.

1.2 API Calling

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

1.3 Endpoints

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

1.4 Notes and Constraints

- The number of ROMA Connect resources that you can create is determined by your quota.
- For more constraints, see the specific API description.

1.5 Basic Concepts

- Account
An account is created upon successful registration with a cloud service platform. The account has full access permissions for all of its cloud services

and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. To ensure account security, create Identity and Access Management (IAM) users and grant them permissions for routine management.

- IAM user

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

The account name, username, and password will be required for API authentication.

- 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 as universal regions and dedicated regions. A universal region provides universal cloud services for common domains. A dedicated region provides services of the same type only or for specific domains.

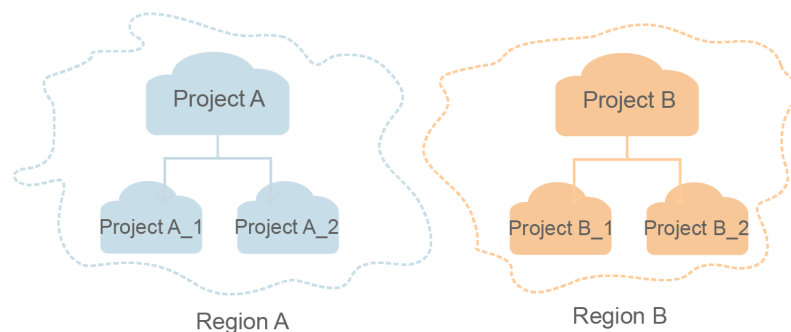
- Availability Zone (AZ)

An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, computing, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to support cross-AZ high-availability systems.

- Project

A project corresponds to a region. Projects group and isolate resources (including compute, storage, and network resources) across physical regions. Users can be granted permissions in a default project to access all resources in the region associated with the project. For more refined access control, create subprojects under a project and purchase resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

Figure 1-1 Project isolation



- Enterprise Project

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

contain resources of multiple regions, and resources can be added to or removed from enterprise projects.

2 Calling APIs

2.1 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 2-1 URI parameters

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.
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens .
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of Parameter name=Parameter value . For example, ?limit=10 indicates that a maximum of 10 data records will be displayed. Use ampersands (&) to separate multiple query parameters.

For example, you have obtained the endpoint (iam.xxx.com) of a region and found resource-path (/v3/auth/tokens) in the URI of the API that is used to obtain a user token. The following is an example:

```
https://iam.xxx.com/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 2-2 HTTP-based methods

Method	Description
GET	Requests a server to provide a specified resource.
PUT	Requests a server to update a specified resource.
POST	Requests a server to add resources or perform special operations.
DELETE	Requests a server to delete a specified resource, for example, an object.
HEAD	Requests a server resource header.
PATCH	Requests a server to update a part of a specified resource. If the resource does not exist, a new resource can be created using the PATCH method.

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.xxx.com/v3/auth/tokens
```

Request Headers

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.

Table 2-3 describes common request headers.

Table 2-3 Common request headers

Name	Description	Mandatory	Example Value
Content-Type	Multipurpose Internet Mail Extensions (MIME) type of a request body. Its default value is application/json . Other values of this field will be provided for specific APIs if any.	Yes	application/json
X-Project-Id	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.	e9993fc787d***** ***aa340f9c0f4
X-Auth-Token	User token. The user token is a response to the API used to obtain a user token. This API is the only one that does not require authentication. After the request is processed, the value of X-Subject-Token in the message header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZIhvc- NAQcCo...ggg1BBI INPXsidG9rZ

 NOTE

In addition to supporting token-based authentication, APIs also support authentication using access key ID/secret access key (AK/SK). During AK/SK-based authentication, an SDK is used to sign the request, and the **Authorization** (signature information) and **X-Sdk-Date** (time when the request is sent) header fields are automatically added to the request.

For more information, see [AK/SK-based 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.xxx.com/v3/auth/tokens
Content-Type: application/json
```


Request Body

The body of a request is often sent in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The request body transfers content except the request header.

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

In the case of the API used to obtain a user token, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace **username**, **domainname**, ********* (login password), and **xxxxxxxxxxxxxxxxxxxx** (project ID) with the actual values. To learn how to obtain a project ID, see [Obtaining a Project ID](#).

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.xxx.com/v3/auth/tokens
Content-Type: application/json

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

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.

2.2 Authentication

You can use either of the following authentication methods when calling APIs. AK/SK-based authentication is recommended because it provides higher security than token authentication.

- Token-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an Access Key ID/Secret Access Key (AK/SK) pair.

Token-based Authentication

NOTE

The validity period of a token is 24 hours. If the same token is used for authentication, cache it to prevent frequent API calls.

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.

When calling an API to obtain a user token, you must set **auth.scope** in the request body to **project**.

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

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

```
GET https://iam.xxx.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

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

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

- AK: access key ID. It is a unique identifier associated with a secret access key and is used in conjunction with a secret access key to sign requests cryptographically.

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

In AK/SK authentication, you can use an AK/SK to sign requests based on the signature algorithm or use the signing SDK to sign requests.

NOTICE

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

2.3 Responses

Status Codes

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](#).

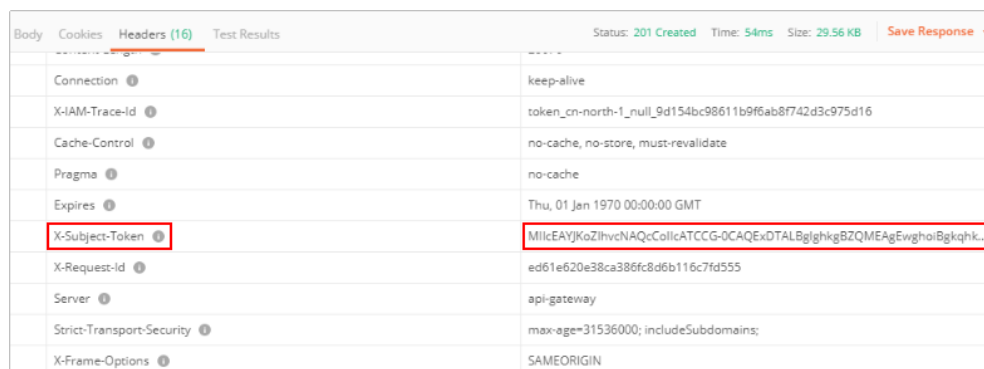
If status code **201** is returned for calling the API used to obtain a user token, the request is successful.

Response Headers

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

Figure 2-1 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 2-1 Header fields of the response to the request for obtaining a user token



Body	Cookies	Headers (16)	Test Results
Status: 201 Created Time: 54ms Size: 29.56 KB Save Response			
Connection		keep-alive	
X-IAM-Trace-Id		token_cn-north-1_null_9d154bc98611b9f6ab8f742d3c975d16	
Cache-Control		no-cache, no-store, must-revalidate	
Pragma		no-cache	
Expires		Thu, 01 Jan 1970 00:00:00 GMT	
X-Subject-Token		MilcEAYJKoZiHvcNAQcColicATCCG-0CAQExDTALBgIghkgBZQMEAgEwghoiBgkqhik.	
X-Request-Id		ed61e620e38ca386fc8d6b116c7fd555	
Server		api-gateway	
Strict-Transport-Security		max-age=31536000; includeSubdomains;	
X-Frame-Options		SAMEORIGIN	

Response Body

A response body conveys information other than the response header and is generally sent in a structured format (for example, JSON or XML) defined by the **Content-type** field.

The following is a part of the response body for the API used to obtain a user token. The following shows part of the response body for the API 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, the system returns an error code and message to you. The following shows the format of 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.

3 Public Resource APIs

3.1 Application Management

3.1.1 Verifying the Existence of an Application

Function

This API is used to check whether an application that meets a given condition exists.

URI

GET /v2/{project_id}/instances/{instance_id}/validate-apps

Table 3-1 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-2 Query parameters

Parameter	Mandatory	Type	Description
name	No	String	Application name. Fuzzy match by application name is not supported. Minimum: 0 Maximum: 256
id	No	String	Application ID. Minimum: 0 Maximum: 64
key	No	String	Application key. Minimum: 0 Maximum: 64

Request Parameters

Table 3-3 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-4 Response body parameters

Parameter	Type	Description
id	String	Application ID.
name	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.

Parameter	Type	Description
remark	String	Application description.

Status code: 404**Table 3-5** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Status code: 403**Table 3-6** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128

Parameter	Type	Description
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "name" : "MyApp",
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "remark" : ""
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
404	Not Found
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.2 Querying Applications

Function

This API is used to query applications that meet all the given conditions.

URI

GET /v2/{project_id}/instances/{instance_id}/apps

Table 3-7 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-8 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset, which is greater than or equal to 0 . Minimum: 0 Maximum: 10000 Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 10

Parameter	Mandatory	Type	Description
favorite	No	Boolean	Query scope related to favorited applications. • If this parameter is not specified, all applications on which the caller has permissions are queried. • If this parameter is set to true, favorited applications are queried. • If this parameter is set to false, unfavorited applications are queried.
auth_role	No	String	Permissions of applications to query. Minimum: 0 Maximum: 64
name	No	String	Application name. Fuzzy match by application name is supported. Minimum: 0 Maximum: 256
owner	No	Boolean	Query scope related to accessible applications. • If this parameter is not specified, all applications on which the caller has permissions are queried. • If this parameter is set to true, applications created by the caller are queried. • If this parameter is set to false, applications that are not created by the caller and on which the caller has permissions are queried, for example, applications shared by other users.

Parameter	Mandatory	Type	Description
user_name	No	String	Name of the user who has permissions on applications to query. This parameter is used to filter out applications on which the specified user has permissions from all the applications on which the caller has permissions. Minimum: 0 Maximum: 64

Request Parameters

Table 3-9 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-10 Response body parameters

Parameter	Type	Description
total	Integer	Total number of applications. Minimum: 1 Maximum: 10
size	Integer	Number of applications displayed on the current page. Minimum: 1 Maximum: 10
apps	Array of ServerAppInfo objects	Application information.

Table 3-11 ServerAppInfo

Parameter	Type	Description
id	String	Application ID.
name	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
remark	String	Application description.
roles	Array of strings	Application permissions. • read: permission to read resources of an application, including API debugging. This permission must be included. • access: permission to access resources of an application. • delete: permission to delete resources of an application. • modify: permission to modify resources of an application, including API release and removal. • admin: all permissions on an application and its resources. • When only the user admin is provided, all other permissions are automatically applied. • The read permission is automatically applied when it is not provided.
create_time	Number	Creation time. Minimum: 1 Maximum: 128
update_time	Number	Update time. Minimum: 1 Maximum: 128
created_user	created_user object	Information about the user who created the application.
last_updated_user	last_updated_user object	Information about the user who last updated the application.
owner	Boolean	Whether the user is the owner of the application.

Parameter	Type	Description
key	String	Application authentication access key. If no key is specified, a random value is generated. • Characters allowed: letters, digits, hyphens (-), underscores (_), at signs (@), and periods (.); The value must start with a letter or digit. • Constraints: The value must be unique in an instance.
favorite	Boolean	Whether to favorite the application. Favorited applications will be displayed preferentially in the list.

Table 3-12 created_user

Parameter	Type	Description
user_id	String	ID of the user who created the application.
user_name	String	Name of the user who created the application.

Table 3-13 last_updated_user

Parameter	Type	Description
user_id	String	ID of the user who last updated the application.
user_name	String	Name of the user who last updated the application.

Status code: 403**Table 3-14** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

ok

```
{
  "total" : "0,",
  "size" : "0,",
  "apps" : [ {
    "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
    "name" : "AppName",
    "remark" : "example"
  } ],
  "roles" : [ "read, access, delete, modify, admin," ],
  "create_time" : "2019-12-06T06:49:04Z",
  "update_time" : "2019-12-06T06:49:04Z",
  "created_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "last_updated_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "owner" : "true,",
  "key" : "TEI95R8RZ2pIf8UM",
  "favorite" : true
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	ok
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.3 Creating an Application

Function

This API is used to create an application.

URI

POST /v2/{project_id}/instances/{instance_id}/apps

Table 3-15 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-16 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-17 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
remark	No	String	Application description.
key	No	String	Application authentication access key. If no key is specified, a random value is generated. • Characters allowed: letters, digits, hyphens (-), underscores (_), at signs (@), and periods (.); The value must start with a letter or digit. • Constraints: The value must be unique in an instance.
secret	No	String	Application authentication access secret. If this field does not exist or the value is null, a random value is generated. • Characters allowed: letters, digits, and the following special characters: ! @\$% +=.-/ • Complexity: a combination of uppercase letters, lowercase letters, digits, and special characters. Complexity check is not required.
favorite	No	Object	Whether the application is favored.

Response Parameters

Status code: 201

Table 3-18 Response body parameters

Parameter	Type	Description
id	String	Application ID.
name	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
remark	String	Application description.
roles	Array of strings	Application permissions. • read: permission to read resources of an application, including API debugging. This permission must be included. • access: permission to access resources of an application. • delete: permission to delete resources of an application. • modify: permission to modify resources of an application, including API release and removal. • admin: all permissions on an application and its resources. • When only the user admin is provided, all other permissions are automatically applied. • The read permission is automatically applied when it is not provided.
create_time	Number	Creation time. Minimum: 1 Maximum: 128
update_time	Number	Update time. Minimum: 1 Maximum: 128
created_user	created_user object	Information about the user who created the application.
last_updated_user	last_updated_user object	Information about the user who last updated the application.
owner	Boolean	Whether the user is the owner of the application.

Parameter	Type	Description
key	String	Application authentication access key. If no key is specified, a random value is generated. • Characters allowed: letters, digits, hyphens (-), underscores (_), at signs (@), and periods (.); The value must start with a letter or digit. • Constraints: The value must be unique in an instance.
favorite	Boolean	Whether to favorite the application. Favorited applications will be displayed preferentially in the list.

Table 3-19 created_user

Parameter	Type	Description
user_id	String	ID of the user who created the application.
user_name	String	Name of the user who created the application.

Table 3-20 last_updated_user

Parameter	Type	Description
user_id	String	ID of the user who last updated the application.
user_name	String	Name of the user who last updated the application.

Status code: 403**Table 3-21** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{
  "name" : "AppName",
  "remark" : "example",
  "key" : "JNs1VK3vLdTT9Djd",
  "secret" : "TEI95R8RZ2plf8UM",
  "favorite" : false
}
```

Example Responses

Status code: 201

OK

```
{
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "name" : "AppName",
  "remark" : "example",
  "roles" : [ "read, access, delete, modify, admin" ],
  "create_time" : "2019-12-06T06:49:04.000Z",
  "update_time" : "2019-12-06T06:49:04.000Z",
  "created_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "last_updated_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "owner" : true,
  "key" : "TEI95R8RZ2plf8UM",
  "favorite" : true
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
201	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.4 Querying Application Details

Function

This API is used to query the details of an application.

URI

GET /v2/{project_id}/instances/{instance_id}/apps/{app_id}

Table 3-22 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-23 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-24 Response body parameters

Parameter	Type	Description
id	String	Application ID.
name	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
remark	String	Application description.

Parameter	Type	Description
roles	Array of strings	Application permissions. • read: permission to read resources of an application, including API debugging. This permission must be included. • access: permission to access resources of an application. • delete: permission to delete resources of an application. • modify: permission to modify resources of an application, including API release and removal. • admin: all permissions on an application and its resources. • When only the user admin is provided, all other permissions are automatically applied. • The read permission is automatically applied when it is not provided.
create_time	Number	Creation time. Minimum: 1 Maximum: 128
update_time	Number	Update time. Minimum: 1 Maximum: 128
created_user	created_user object	Information about the user who created the application.
last_updated_user	last_updated_user object	Information about the user who last updated the application.
owner	Boolean	Whether the user is the owner of the application.
key	String	Application authentication access key. If no key is specified, a random value is generated. • Characters allowed: letters, digits, hyphens (-), underscores (_), at signs (@), and periods (.); The value must start with a letter or digit. • Constraints: The value must be unique in an instance.
favorite	Boolean	Whether to favorite the application. Favorited applications will be displayed preferentially in the list.

Table 3-25 created_user

Parameter	Type	Description
user_id	String	ID of the user who created the application.
user_name	String	Name of the user who created the application.

Table 3-26 last_updated_user

Parameter	Type	Description
user_id	String	ID of the user who last updated the application.
user_name	String	Name of the user who last updated the application.

Status code: 403**Table 3-27** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "name" : "AppName",
  "remark" : "example",
  "roles" : [ "read, access, delete, modify, admin" ],
  "create_time" : "2019-12-06T06:49:04.000Z",
  "update_time" : "2019-12-06T06:49:04.000Z",
  "created_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "last_updated_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "owner" : true,
  "key" : "TEI95R8RZ2pf8UM",
  "favorite" : true
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.5 Updating an Application

Function

This API is used to update an application.

URI

PUT /v2/{project_id}/instances/{instance_id}/apps/{app_id}

Table 3-28 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-29 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-30 Request body parameters

Parameter	Mandatory	Type	Description
name	No	String	Application name. - Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. - Constraints: The value must be unique in an instance.
remark	No	String	Application description.
favorite	No	Object	Whether the application is favorited.

Response Parameters

Status code: 200

Table 3-31 Response body parameters

Parameter	Type	Description
id	String	Application ID.
name	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
remark	String	Application description.
roles	Array of strings	Application permissions. • read: permission to read resources of an application, including API debugging. This permission must be included. • access: permission to access resources of an application. • delete: permission to delete resources of an application. • modify: permission to modify resources of an application, including API release and removal. • admin: all permissions on an application and its resources. • When only the user admin is provided, all other permissions are automatically applied. • The read permission is automatically applied when it is not provided.
create_time	Number	Creation time. Minimum: 1 Maximum: 128
update_time	Number	Update time. Minimum: 1 Maximum: 128
created_user	created_user object	Information about the user who created the application.
last_updated_user	last_updated_user object	Information about the user who last updated the application.

Parameter	Type	Description
owner	Boolean	Whether the user is the owner of the application.
key	String	Application authentication access key. If no key is specified, a random value is generated. • Characters allowed: letters, digits, hyphens (-), underscores (_), at signs (@), and periods (.); The value must start with a letter or digit. • Constraints: The value must be unique in an instance.
favorite	Boolean	Whether to favorite the application. Favorited applications will be displayed preferentially in the list.

Table 3-32 created_user

Parameter	Type	Description
user_id	String	ID of the user who created the application.
user_name	String	Name of the user who created the application.

Table 3-33 last_updated_user

Parameter	Type	Description
user_id	String	ID of the user who last updated the application.
user_name	String	Name of the user who last updated the application.

Status code: 403**Table 3-34** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{
  "name" : "AppName",
  "remark" : "example",
  "favorite" : false
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "name" : "AppName",
  "remark" : "example",
  "roles" : [ "read, access, delete, modify, admin" ],
  "create_time" : "2019-12-06T06:49:04.000Z",
  "update_time" : "2019-12-06T06:49:04.000Z",
  "created_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "last_updated_user" : {
    "user_id" : "string",
    "user_name" : "string"
  },
  "owner" : true,
  "key" : "TEI95R8RZ2pIf8UM",
  "favorite" : true
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.6 Deleting an Application

Function

This API is used to delete an application.

URI

DELETE /v2/{project_id}/instances/{instance_id}/apps/{app_id}

Table 3-35 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-36 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 403

Table 3-37 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
}
```

```
"error_msg" : "error summary",  
"error_details" : "some error details here",  
"request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.7 Querying an Application Secret

Function

This API is used to query an application secret.

URI

GET /v2/{project_id}/instances/{instance_id}/apps/{app_id}/secret

Table 3-38 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-39 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200**Table 3-40** Response body parameters

Parameter	Type	Description
id	String	Application ID.
secret	String	Application authentication access secret. If this field does not exist or the value is null, a random value is generated. • Characters allowed: letters, digits, and the following special characters: !@#\$%+=.-/ • Complexity: a combination of uppercase letters, lowercase letters, digits, and special characters. Complexity check is not required.

Status code: 403**Table 3-41** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",  
  "secret" : "JNs1VK3vLdTT9Djd"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.8 Resetting an Application Secret

Function

This API is used to reset an application secret.

URI

PUT /v2/{project_id}/instances/{instance_id}/apps/{app_id}/secret

Table 3-42 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-43 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-44 Request body parameters

Parameter	Mandatory	Type	Description
secret	No	String	Application authentication access secret. If this field does not exist or the value is null, a random value is generated. • Characters allowed: letters, digits, and the following special characters: ! @\$% +=./ • Complexity: a combination of uppercase letters, lowercase letters, digits, and special characters. Complexity check is not required.

Response Parameters

Status code: 200

Table 3-45 Response body parameters

Parameter	Type	Description
id	String	Application ID.
secret	String	Application authentication access secret. If this field does not exist or the value is null, a random value is generated. • Characters allowed: letters, digits, and the following special characters: ! @\$% +=./ • Complexity: a combination of uppercase letters, lowercase letters, digits, and special characters. Complexity check is not required.

Status code: 403

Table 3-46 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{  
  "secret" : "JNs1VK3vLdTT9Djd"  
}
```

Example Responses

Status code: 200

OK

```
{  
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",  
  "secret" : "JNs1VK3vLdTT9Djd"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.9 Querying Application Members

Function

This API is used to query members of an application.

URI

GET /v2/{project_id}/instances/{instance_id}/apps/{app_id}/users

Table 3-47 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-48 Query parameters

Parameter	Mandatory	Type	Description
user_name	No	String	Name of the member to query. Exact match is used. Minimum: 0 Maximum: 64

Request Parameters

Table 3-49 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200**Table 3-50** Response body parameters

Parameter	Type	Description
total	Integer	Total number of members of an application. Minimum: 1 Maximum: 5
id	String	Application ID.
users	Array of users objects	Members.

Table 3-51 users

Parameter	Type	Description
id	String	User ID.
name	String	Username.

Parameter	Type	Description
roles	Array of strings	Application permissions. ● read: permission to read resources of an application, including API debugging. This permission must be included. ● access: permission to access resources of an application. ● delete: permission to delete resources of an application. ● modify: permission to modify resources of an application, including API release and removal. ● admin: all permissions on an application and its resources. ● When only the user admin is provided, all other permissions are automatically applied. ● The read permission is automatically applied when it is not provided.

Status code: 403

Table 3-52 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

Query succeeded.

```
{
  "total" : 1,
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "users" : [ {
    "id" : "string",
    "name" : "string",
    "roles" : [ "read, access, delete, modify, admin" ]
  } ]
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	Query succeeded.
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.10 Setting Application Members

Function

- This API is used to set members of an application. If an empty array is carried, the existing members are cleared.
- The setting is a full update, rather than an incremental update. In other words, the members of the application are replaced with the members carried in the request.

URI

PUT /v2/{project_id}/instances/{instance_id}/apps/{app_id}/users

Table 3-53 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-54 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-55 Request body parameters

Parameter	Mandatory	Type	Description
users	No	Array of strings	Members to add. If the list is empty, all members of the application are cleared.

Response Parameters

Status code: 200

Table 3-56 Response body parameters

Parameter	Type	Description
total	Integer	Total number of members of an application. Minimum: 1 Maximum: 5
id	String	Application ID.
users	Array of users objects	Members.

Table 3-57 users

Parameter	Type	Description
id	String	User ID.
name	String	Username.
roles	Array of strings	Application permissions. • read: permission to read resources of an application, including API debugging. This permission must be included. • access: permission to access resources of an application. • delete: permission to delete resources of an application. • modify: permission to modify resources of an application, including API release and removal. • admin: all permissions on an application and its resources. • When only the user admin is provided, all other permissions are automatically applied. • The read permission is automatically applied when it is not provided.

Status code: 403

Table 3-58 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{
  "users" : [ {
    "id" : "06d9106f3b000f241f83c010d6b78c81",
    "roles" : [ "read" ]
  } ]
}
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "id" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3",
  "users" : [ {
    "id" : "string",
    "name" : "string",
    "roles" : [ "read, access, delete, modify, admin" ]
  } ]
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.1.11 Querying Candidate Members

Function

This API is used to query candidate members of an application. Members in the abnormal state are filtered out.

URI

GET /v2/{project_id}/instances/{instance_id}/apps/{app_id}/candidates

Table 3-59 Path parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-60 Query parameters

Parameter	Mandatory	Type	Description
filter	No	String	Filter criteria. • If this parameter is not specified, all candidate members including the existing application members are returned. • If this parameter is set to members, the existing application members are filtered out. This parameter is used when you want to add members in incremental mode. Minimum: 0 Maximum: 64

Request Parameters

Table 3-61 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-62 Response body parameters

Parameter	Type	Description
users	Array of CandidatesUser objects	Candidate members.

Table 3-63 CandidatesUser

Parameter	Type	Description
name	String	Username. Minimum: 0 Maximum: 64
id	String	User ID. Minimum: 0 Maximum: 64

Status code: 403

Table 3-64 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "users" : [ {
    "name" : "chenjunjie 00296820",
    "id" : "06d9106f3b000f241f83c010d6b78c81"
  } ],
  "name" : "fdi-dm",
```

```
{
  "id" : "076d742f028025191fe9c0109200f5c8"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.2 Asset Management

3.2.1 Downloading an Asset Package

Function

- This API can be used to obtain the asset package generated by an executed export job. The asset package can be downloaded only once.
- You can compress the files, save them to the database, download them, and delete them.

URI

GET /v2/{project_id}/instances/{instance_id}/assets/archives/{archive_id}

Table 3-65 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64
archive_id	Yes	String	Field entities.archive_id returned after a job is executed. Minimum: 0 Maximum: 64

Request Parameters

Table 3-66 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-67 Response body parameters

Parameter	Type	Description
apps	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
tasks	Array<Object>	Tasks.

Table 3-68 AppName

Parameter	Type	Description

Table 3-69 tasks

Parameter	Type	Description
task_id	String	Task ID.

Status code: 403**Table 3-70** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses**Status code: 403**

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.2.2 Exporting Assets in Batches

Function

Exporting Assets in Batches

- This API is used to create a job for exporting assets that meet given conditions.
- A maximum of 100 applications and tasks are supported.
- A user can create only one asset export job at a time. In other words, there should be no job in the Running state when the user creates such a job.

URI

POST /v2/{project_id}/instances/{instance_id}/assets/export

Table 3-71 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-72 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-73 Request body parameters

Parameter	Mandatory	Type	Description
apps	Yes	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
tasks	No	Array<Object>	Tasks.

Table 3-74 tasks

Parameter	Mandatory	Type	Description
task_id	No	String	Task ID.

Response Parameters

Status code: 200

Table 3-75 Response body parameters

Parameter	Type	Description
job_id	String	ID of an asset export job, which can be used to query the job progress. Minimum: 1 Maximum: 128

Status code: 403**Table 3-76** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses**Status code: 200**

OK

```
{  
  "job_id" : "ff8080814dbd65d7014dbe0d84db0013"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
403	Forbidden

Error Codes

See [Error Codes](#).

3.2.3 Importing Assets

Function

- This API is used to create an asset import task. The asset version and specific assets are read from the asset content.
- A maximum of 100 applications and tasks are supported.
- A user can create only one asset import job at a time. In other words, there should be no job in the Running state when the user creates such a job.

URI

POST /v2/{project_id}/instances/{instance_id}/assets/import

Table 3-77 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-78 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-79 Request body parameters

Parameter	Mandatory	Type	Description
apps	No	String	Application name. • Characters allowed: letters, digits, hyphens (-), underscores (_), periods (.), spaces, and parentheses. • Constraints: The value must be unique in an instance.
tasks	No	Array<Object>	Tasks.

Table 3-80 tasks

Parameter	Mandatory	Type	Description
task_id	No	String	Task ID.

Response Parameters

Status code: 200

Table 3-81 Response body parameters

Parameter	Type	Description
job_id	String	ID of an asset import job, which can be used to query the job progress. Minimum: 1 Maximum: 128

Status code: 403**Table 3-82** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses**Status code: 200**

OK

```
{  
  "job_id" : "ff8080814dbd65d7014dbe0d84db0013"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
403	Forbidden

Error Codes

See [Error Codes](#).

3.2.4 Obtaining Job Progress

Function

This API is used to query the job progress.

URI

GET /v2/{project_id}/instances/{instance_id}/assets/jobs/{job_id}

Table 3-83 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64
job_id	Yes	String	Job ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-84 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-85 Response body parameters

Parameter	Type	Description
id	String	Job ID. Minimum: 1 Maximum: 128
type	String	Job type.
status	String	Job status. ● Running: The job is being executed. ● Success: The job is successfully executed. For an export job, you can use <code>archive_id</code> to download the asset package. ● Failed: The job fails to be executed. You can view the cause of the error in the reason field. ● Finished: The job is completed. For an export job, if the asset package is downloaded within the validity period, the job status changes from Success to Finished. In this case, the archive_id field is not returned.
reasons	Array of AssetJobReason objects	Cause of a job failure.
progress_percent	Float	Job progress percentage. Minimum: 0 Maximum: 1

Parameter	Type	Description
archive_id	String	ID of the asset package to download when the job is exported. Minimum: 1 Maximum: 128
begin_time	Number	Start time of the job. Minimum: 1 Maximum: 128
end_time	Number	End time of the job. Minimum: 1 Maximum: 128

Table 3-86 AssetJobReason

Parameter	Type	Description
resource_type	String	Resource type.
resource_name	String	Resource name. Minimum: 1 Maximum: 64
error_code	String	Error code. Minimum: 1 Maximum: 64
error_msg	String	Error message. Minimum: 1 Maximum: 64

Status code: 403**Table 3-87** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id" : "ff8080814dbd65d7014dbe0d84db0013",
  "type" : "exportAsset",
  "status" : "Running",
  "reason" : [ {
    "resource_type" : "application",
    "resource_name" : "myApp",
    "error_code" : "ROMA.00000101",
    "error_msg" : "some error details here"
  } ],
  "progress_percent" : 0.35,
  "archive_id" : "string",
  "begin_time" : "2019-12-06T06:49:04Z",
  "end_time" : "2019-12-06T06:50:04Z"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.2.5 Deleting Assets in Batches

Function

This API is used to delete assets in batches.

- You can create a task for batch deleting assets that meet specified conditions.
- A maximum of 100 applications and tasks are supported.
- One user can create only one asset deletion task at a time, and no task in the running state exists.

URI

POST /v2/{project_id}/instances/{instance_id}/assets/delete

Table 3-88 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-89 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-90 Request body parameters

Parameter	Mandatory	Type	Description
apps	Yes	String	Application ID.
tasks	No	Array<Object>	Task list.

Table 3-91 tasks

Parameter	Mandatory	Type	Description
task_id	No	String	Task ID.

Response Parameters

Status code: 200

Table 3-92 Response body parameters

Parameter	Type	Description
job_id	String	ID of the asset export or deletion job, which can be used to query the job progress. Minimum: 1 Maximum: 128

Status code: 403

Table 3-93 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128

Parameter	Type	Description
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "job_id" : "ff8080814dbd65d7014dbe0d84db0013"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.3 Dictionary Management

3.3.1 Verifying the Existence of a Dictionary

Function

This API is used to check whether the dictionary that meets a given condition exists. Only the dictionary name and code can be used as conditions.

URI

GET /v2/{project_id}/instances/{instance_id}/validate-dictionaries

Table 3-94 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-95 Query parameters

Parameter	Mandatory	Type	Description
name	No	String	Dictionary name to check. Exact match is used. Minimum: 0 Maximum: 64
code	No	String	Dictionary code to check. Exact match is used. Minimum: 0 Maximum: 64

Request Parameters

Table 3-96 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200**Table 3-97** Response body parameters

Parameter	Type	Description
name	String	Dictionary name. - Characters allowed: letters, digits, underscores (_), and spaces - Constraints: The value must be unique in an instance.
code	String	Dictionary code. - Characters allowed: letters, digits, underscores (_), and spaces - Constraints: The value must be unique in an instance.

Status code: 403**Table 3-98** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128

Parameter	Type	Description
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "name" : "MyDict",  
  "code" : "b2e6b145-4f3f-4a80-aa45-f4b8029f95a3"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
  "error_msg" : "error summary",  
  "error_details" : "some error details here",  
  "request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
200	OK
404	Not Found
403	Forbidden

Error Codes

See [Error Codes](#).

3.3.2 Querying Dictionaries

Function

This API is used to query dictionaries.

URI

GET /v2/{project_id}/instances/{instance_id}/dictionaries

Table 3-99 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Table 3-100 Query parameters

Parameter	Mandatory	Type	Description
offset	No	String	Offset, which is greater than or equal to 0 . Default: 0 Minimum: 0 Maximum: 64
limit	No	String	Number of items displayed on each page. Default: 10 Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
parent_code	No	String	Parent dictionary code. The child dictionaries are returned. If this parameter is not specified, the top-level dictionaries are queried. Minimum: 0 Maximum: 64
code	No	String	Code of the dictionary to query. Fuzzy match by dictionary code is supported. Minimum: 0 Maximum: 64
name	No	String	Name of the dictionary to query. Fuzzy match by dictionary name is supported. Minimum: 0 Maximum: 64

Request Parameters

Table 3-101 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-102 Response body parameters

Parameter	Type	Description
total	Integer	Total number of records, which is irrelevant to pagination. Minimum: 1 Maximum: 128
size	Integer	Number of records displayed on the current page. The value must be less than or equal to the limit specified in the request. Minimum: 1 Maximum: 128
dictionaries	Array of Dictionary objects	Dictionaries.

Table 3-103 Dictionary

Parameter	Type	Description
id	String	Dictionary ID. Minimum: 0 Maximum: 64
name	String	Dictionary name. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
remark	String	Dictionary description.
code	String	Dictionary code. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
order	Integer	Dictionary order. A smaller value indicates a higher order.
extend_one	String	Extended field 1. • Characters allowed: letters, digits, underscores (_), and spaces

Parameter	Type	Description
extend_two	String	Extended field 2. Characters allowed: letters, digits, underscores (_), and spaces
parent_code	String	Parent dictionary code. If the value is null, the dictionary is a top-level dictionary.
type	String	Dictionary type. system: built-in dictionary of the system. It can be edited but cannot be deleted. user: dictionary created by a user.
create_time	Number	Time when the dictionary was created. Minimum: 1 Maximum: 128
update_time	Number	Time when the dictionary was updated. Minimum: 1 Maximum: 128

Status code: 403

Table 3-104 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 0,
  "size" : 0,
  "dictionaries" : [ {
    "id" : "string",
    "name" : "string",
    "remark" : "string",
    "code" : "string",
    "order" : 0,
    "extend_one" : "string",
    "extend_two" : "string",
    "parent_code" : "string",
    "type" : "system",
    "create_time" : "2019-12-06T06:49:04Z",
    "update_time" : "2019-12-06T06:49:04Z"
  } ]
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.3.3 Creating a Dictionary

Function

This API is used to create a dictionary.

URI

POST /v2/{project_id}/instances/{instance_id}/dictionaries

Table 3-105 Path parameters

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-106 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-107 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Dictionary name. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
remark	No	String	Dictionary description.
code	Yes	String	Dictionary code. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
order	No	Integer	Dictionary order. A smaller value indicates a higher order.

Parameter	Mandatory	Type	Description
extend_one	No	String	Extended field 1. Characters allowed: letters, digits, underscores (_), and spaces
extend_two	No	String	Extended field 2. Characters allowed: letters, digits, underscores (_), and spaces
parent_code	No	String	Parent dictionary code. If the value is null, the dictionary is a top-level dictionary.

Response Parameters

Status code: 201

Table 3-108 Response body parameters

Parameter	Type	Description
id	String	Dictionary ID. Minimum: 0 Maximum: 64
name	String	Dictionary name. - Characters allowed: letters, digits, underscores (_), and spaces - Constraints: The value must be unique in an instance.
remark	String	Dictionary description.
code	String	Dictionary code. - Characters allowed: letters, digits, underscores (_), and spaces - Constraints: The value must be unique in an instance.
order	Integer	Dictionary order. A smaller value indicates a higher order.
extend_one	String	Extended field 1. Characters allowed: letters, digits, underscores (_), and spaces

Parameter	Type	Description
extend_two	String	Extended field 2. Characters allowed: letters, digits, underscores (_), and spaces
parent_code	String	Parent dictionary code. If the value is null, the dictionary is a top-level dictionary.
type	String	Dictionary type. system: built-in dictionary of the system. It can be edited but cannot be deleted. user: dictionary created by a user.
create_time	Number	Time when the dictionary was created. Minimum: 1 Maximum: 128
update_time	Number	Time when the dictionary was updated. Minimum: 1 Maximum: 128

Status code: 403**Table 3-109** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{  
  "name" : "DictName",  
}
```

```
"remark" : "example",
"code" : "13760c1fe8655e61209b75665e9bef43",
"order" : "1",
"extend_one" : "param1",
"extend_two" : "param2",
"parent_code" : ""
}
```

Example Responses

Status code: 201

OK

```
{
  "id" : "string",
  "name" : "string",
  "remark" : "string",
  "code" : "string",
  "order" : 0,
  "extend_one" : "string",
  "extend_two" : "string",
  "parent_code" : "string",
  "type" : "system",
  "create_time" : "2019-12-06T06:49:04Z",
  "update_time" : "2019-12-06T06:49:04Z"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
201	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.3.4 Querying Dictionary Details

Function

This API is used to query the details of a dictionary.

URI

GET /v2/{project_id}/instances/{instance_id}/dictionaries/{dict_id}

Table 3-110 Path parameters

Parameter	Mandatory	Type	Description
dict_id	Yes	String	Dictionary ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-111 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 200

Table 3-112 Response body parameters

Parameter	Type	Description
id	String	Dictionary ID. Minimum: 0 Maximum: 64

Parameter	Type	Description
name	String	Dictionary name. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
remark	String	Dictionary description.
code	String	Dictionary code. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
order	Integer	Dictionary order. A smaller value indicates a higher order.
extend_one	String	Extended field 1. • Characters allowed: letters, digits, underscores (_), and spaces
extend_two	String	Extended field 2. • Characters allowed: letters, digits, underscores (_), and spaces
parent_code	String	Parent dictionary code. If the value is null, the dictionary is a top-level dictionary.
type	String	Dictionary type. • system: built-in dictionary of the system. It can be edited but cannot be deleted. • user: dictionary created by a user.
create_time	Number	Time when the dictionary was created. Minimum: 1 Maximum: 128
update_time	Number	Time when the dictionary was updated. Minimum: 1 Maximum: 128

Status code: 403

Table 3-113 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id" : "string",
  "name" : "string",
  "remark" : "string",
  "code" : "string",
  "order" : 0,
  "extend_one" : "string",
  "extend_two" : "string",
  "parent_code" : "string",
  "type" : "system",
  "create_time" : "2019-12-06T06:49:04Z",
  "update_time" : "2019-12-06T06:49:04Z"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
  "request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.3.5 Updating a Dictionary

Function

This API is used to update a dictionary.

URI

PUT /v2/{project_id}/instances/{instance_id}/dictionaries/{dict_id}

Table 3-114 Path parameters

Parameter	Mandatory	Type	Description
dict_id	Yes	String	Dictionary ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-115 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Table 3-116 Request body parameters

Parameter	Mandatory	Type	Description
name	No	String	Dictionary name. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
remark	No	String	Dictionary description.
order	No	Integer	Dictionary order. A smaller value indicates a higher order.
extend_one	No	String	Extended field 1. • Characters allowed: letters, digits, underscores (_), and spaces
extend_two	No	String	Extended field 2. • Characters allowed: letters, digits, underscores (_), and spaces

Response Parameters

Status code: 200

Table 3-117 Response body parameters

Parameter	Type	Description
id	String	Dictionary ID. Minimum: 0 Maximum: 64
name	String	Dictionary name. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
remark	String	Dictionary description.
code	String	Dictionary code. • Characters allowed: letters, digits, underscores (_), and spaces • Constraints: The value must be unique in an instance.
order	Integer	Dictionary order. A smaller value indicates a higher order.
extend_one	String	Extended field 1. • Characters allowed: letters, digits, underscores (_), and spaces
extend_two	String	Extended field 2. • Characters allowed: letters, digits, underscores (_), and spaces
parent_code	String	Parent dictionary code. If the value is null, the dictionary is a top-level dictionary.
type	String	Dictionary type. • system: built-in dictionary of the system. It can be edited but cannot be deleted. • user: dictionary created by a user.
create_time	Number	Time when the dictionary was created. Minimum: 1 Maximum: 128
update_time	Number	Time when the dictionary was updated. Minimum: 1 Maximum: 128

Status code: 403

Table 3-118 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

```
{
  "name" : "DictName",
  "remark" : "example",
  "order" : "1",
  "extend_one" : "param1",
  "extend_two" : "param2"
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "string",
  "name" : "string",
  "remark" : "string",
  "code" : "string",
  "order" : 0,
  "extend_one" : "string",
  "extend_two" : "string",
  "parent_code" : "string",
  "type" : "system",
  "create_time" : "2019-12-06T06:49:04Z",
  "update_time" : "2019-12-06T06:49:04Z"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "ROMA.00000101",
  "error_msg" : "error summary",
  "error_details" : "some error details here",
}
```

```
"request_id" : "13760c1fe8655e61209b75665e9bef43"
}
```

Status Codes

Status Code	Description
200	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.3.6 Deleting a Dictionary

Function

This API is used to delete a dictionary. When a dictionary is deleted, all its child dictionaries are deleted.

URI

DELETE /v2/{project_id}/instances/{instance_id}/dictionaries/{dict_id}

Table 3-119 Path parameters

Parameter	Mandatory	Type	Description
dict_id	Yes	String	Dictionary ID. Minimum: 0 Maximum: 64
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 64
project_id	Yes	String	Project ID. Minimum: 0 Maximum: 64

Request Parameters

Table 3-120 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header). Minimum: 1 Maximum: 100000

Response Parameters

Status code: 403**Table 3-121** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 128
error_msg	String	Error message. Minimum: 1 Maximum: 128
error_details	String	Error information. Minimum: 1 Maximum: 128
request_id	String	Request ID. Minimum: 1 Maximum: 128

Example Requests

None

Example Responses

Status code: 403

Forbidden

```
{  
  "error_code" : "ROMA.00000101",  
}
```

```
"error_msg" : "error summary",  
"error_details" : "some error details here",  
"request_id" : "13760c1fe8655e61209b75665e9bef43"  
}
```

Status Codes

Status Code	Description
204	OK
403	Forbidden

Error Codes

See [Error Codes](#).

3.4 Public Management

3.4.1 Obtaining Service API Versions

Function

This API is used to obtain service API versions. No authentication is required.

URI

GET /

Request Parameters

None

Response Parameters

Status code: 200

Table 3-122 Response body parameters

Parameter	Type	Description
versions	Array of Version objects	API versions of the service.

Table 3-123 Version

Parameter	Type	Description
id	String	API version ID, for example, v1. Minimum: 1 Maximum: 128
version	String	Maximum microversion of the API. This parameter is left blank if the microversion is not supported. Minimum: 1 Maximum: 128
min_version	String	Minimum microversion of the API. This parameter is left blank if the microversion is not supported. Minimum: 1 Maximum: 128
status	String	API version status. • The options are as follows: • CURRENT: recommended version. • SUPPORTED: an old version that is still supported. • DEPRECATED: deprecated version, which may be deleted later.
updated	Number	UTC time when the API version was released. Minimum: 1 Maximum: 128
links	Array<Object>	URL of the API version.

Table 3-124 links

Parameter	Type	Description
rel	String	Usage.
href	String	URL for this usage.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "versions": [ {
    "min_version": "",
    "links": null
  }, {
    "rel": "self",
    "href": "https://roma.example.com/v1",
    "id": "v1",
    "updated": "2018-06-28T12:20:21Z",
    "version": "",
    "status": "SUPPORTED",
    "min_version": "",
    "links": [ {
      "rel": "self",
      "href": "https://roma.example.com/v2",
      "id": "v2",
      "updated": "2020-06-28T12:20:21Z",
      "version": "",
      "status": "CURRENT"
    } ]
  } ]
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

3.4.2 Obtaining the API Version of a Given Version ID

Function

This API is used to obtain the API version of a given version ID.

URI

GET /{version}

Table 3-125 Path parameters

Parameter	Mandatory	Type	Description
version	Yes	String	Version.

Request Parameters

None

Response Parameters

Status code: 200

Table 3-126 Response body parameters

Parameter	Type	Description
version	Version object	Version.

Table 3-127 Version

Parameter	Type	Description
id	String	API version ID, for example, v1. Minimum: 1 Maximum: 128
version	String	Maximum microversion of the API. This parameter is left blank if the microversion is not supported. Minimum: 1 Maximum: 128
min_version	String	Minimum microversion of the API. This parameter is left blank if the microversion is not supported. Minimum: 1 Maximum: 128
status	String	API version status. • The options are as follows: • CURRENT: recommended version. • SUPPORTED: an old version that is still supported. • DEPRECATED: deprecated version, which may be deleted later.
updated	Number	UTC time when the API version was released. Minimum: 1 Maximum: 128
links	Array<Object >	URL of the API version.

Table 3-128 links

Parameter	Type	Description
rel	String	Usage.
href	String	URL for this usage.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "version" : {
    "min_version" : "",
    "links" : [ {
      "rel" : "self",
      "href" : "https://roma.example.com/v2"
    } ],
    "id" : "v2",
    "updated" : "2020-06-28T12:20:21Z",
    "version" : "",
    "status" : "CURRENT"
  }
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4 APIC APIs

4.1 Instance Management

4.1.1 Querying Details of a ROMA Connect Instance

Function

Querying Details of a ROMA Connect Instance

URI

GET /v2/{project_id}/apic/instances/{instance_id}

Table 4-1 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-3 Response body parameters

Parameter	Type	Description
id	String	Instance ID.
project_id	String	Project ID to which the instance belongs.
instance_name	String	Instance name.

Parameter	Type	Description
status	String	Status of the instance: • Creating • CreateSuccess • CreateFail • Initiating • Registering • Running • InitiatingFailed • RegisterFailed • Installing • InstallFailed • Updating • UpdateFailed • Rollingback • RollbackSuccess • RollbackFailed • Deleting • DeleteFailed • Unregistering • UnRegisterFailed • CreateTimeout • InitTimeout • RegisterTimeout • InstallTimeout • UpdateTimeout • RollbackTimeout • DeleteTimeout • UnregisterTimeout • Starting • Freezing • Frozen • Restarting • RestartFail • Unhealthy • RestartTimeout

Parameter	Type	Description
instance_statuses	Integer	Instance status value, expressed by a number. • 1: Creating • 2: Created successfully • 3: Creation failed • 4: Initializing • 5: Registering • 6: Running • 7: Initialization failed • 8: Registration failed • 10: Installing • 11: Installation failed • 12: Upgrading • 13: Upgrade failed • 20: Rolling back • 21: Rollback success • 22: Rollback failed • 23: Deleting • 24: Deletion failed • 25: Deregistering • 26: Deregistration failed • 27: Creation timeout • 28: Initialization timeout • 29: Registration timeout • 30: Installation timeout • 31: Upgrade timeout • 32: Rollback timeout • 33: Deletion timeout • 34: Deregistration timeout • 35: Starting • 36: Freezing • 37: Frozen • 38: Restarting • 39: Restart failed • 40: Instance exception • 41: Restart timeout
type	String	Instance type. This parameter is currently not supported.

Parameter	Type	Description
spec	String	Instance edition. • ROMA_BASIC • ROMA_PROFESSIONAL • ROMA_ENTERPRISE • ROMA_PLATINUM • ROMA_BASIC_IPV6 • ROMA_PROFESSIONAL_IPV6 • ROMA_ENTERPRISE_IPV6 • ROMA_PLATINUM_IPV6
create_time	Long	Time when the instance is created. The time is in the Unix timestamp format.
enterprise_project_id	String	Enterprise project ID. This parameter is required for an enterprise account.
eip_address	String	EIP bound to the instance.
charging_mode	Integer	Billing mode of the instance.
cbc_metadata	String	Order ID.
description	String	Description about the instance.
vpc_id	String	VPC ID.
subnet_id	String	Subnet network ID.
security_group_id	String	Security group to which the instance belongs.
maintain_begin	String	Start time of the maintenance time window, in the format "xx:00:00". The value of xx can be 02, 06, 10, 14, 18, or 22. ' During the maintenance time period, O&M personnel can perform maintenance operations on the gateway. During maintenance, services can still be used, but occasionally there may be temporary service interruptions. Scheduled maintenance occurs infrequently (typically once every several months). '

Parameter	Type	Description
maintain_end	String	End time of the maintenance time window, in the format "xx:00:00". There is a 4-hour difference between the start time and end time. During the maintenance time period, O&M personnel can perform maintenance operations on the instance. During maintenance, services can still be used, but occasionally there may be temporary service interruptions. Scheduled maintenance occurs infrequently (typically once every several months).
ingress_ip	String	VPC ingress address.
user_id	String	ID of the account to which the instance belongs.
nat_eip_ipv6_cidr	String	Public egress address (IPv6). Currently, IPv6 addresses are supported only in certain regions.
eip_ipv6_address	String	EIP (IPv6). Currently, IPv6 addresses are supported only in certain regions.
nat_eip_address	String	IP address for public outbound access.
bandwidth_size	Integer	Outbound access bandwidth.
available_zone_ids	String	AZ.
instance_version	String	Instance version.
virsubnet_id	String	Subnet network ID. This parameter is currently not supported.
roma_eip_address	String	ROMA EIP. This parameter is currently not supported.
listeners	Array of Listener objects	Listening information. [This parameter is currently not supported.] (tag:public)
supported_features	Array of strings	Supported features.

Parameter	Type	Description
ingress_ip_v6	String	Instance entry (IPv6). Currently, only some AZs in some regions support IPv6.

Table 4-4 Listener

Parameter	Type	Description
name	String	Listener name.
port	Integer	Port for the listener to provide services externally.
backend	Backend object	Backend service definition.
ip_version	Integer	IP protocol type for creating a load balancer.

Table 4-5 Backend

Parameter	Type	Description
ip	Array of strings	Backend host address list.
port	Integer	Backend service port. If the port does not exist, use the listener port.
health_check	HealthCheck object	Health check settings.

Table 4-6 HealthCheck

Parameter	Type	Description
protocol	String	Currently, LVS supports only TCP_CHECK.
port	Integer	Health check port.
unhealthy	Integer	The threshold for determining whether the backend is unhealthy. The number of consecutive detection failures is used as the threshold.
timeout	Integer	Timeout interval for detecting the backend, in seconds.
interval	Integer	Interval for detecting the backend, in seconds.

Status code: 401**Table 4-7** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-8** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-9** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-10** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "available_zone_ids" : "[region01, region02]",
  "bandwidth_size" : 5,
  "description" : "test create instance",
  "eip_id" : "41f961ab-2bdd-4ca7-9b59-cfc4fcef10c9",
  "enterprise_project_id" : "0",
  "instance_name" : "apig-demo",
  "maintain_begin" : "22:00:00",
  "maintain_end" : "02:00:00",
  "security_group_id" : "36d0ec18-bd10-4da7-86f3-ad7a5ddc55d7",
  "spec_id" : "PROFESSIONAL",
  "subnet_id" : "a938121c-11c4-4c91-b983-bc9acd347bb5",
  "vpc_id" : "0957108c-257c-4ce0-9e93-527d279ce763"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIC.7102",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIC.7106",
  "error_msg" : "No permissions to request for the method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIC.7302",
  "error_msg" : "Instance not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIC.9000",
  "error_msg" : "Failed to request internal service"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2 Viewing Restrictions on a ROMA Connect Instance.

Function

Viewing restrictions on a ROMA Connect instance.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/restriction

Table 4-11 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-12 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-13 Response body parameters

Parameter	Type	Description
restrict_cidrs	Array of strings	CIDR list of restricted IP network segments.
resource_subnet_cidr	String	CIDR of the IP network segment of the resource tenant.

Status code: 401**Table 4-14** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-15** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-16** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-17** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "restrict_cidrs" : [ "127.0.0.1/32", "192.168.0.1/24" ],
  "resource_subnet_cidr" : "192.168.0.1/24"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIC.7102",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIC.7106",
  "error_msg" : "No permissions to request for the method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIC.7302",
  "error_msg" : "Instance not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIC.9000",
  "error_msg" : "Failed to request internal service"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2 API Group Management

4.2.1 Creating an API Group

Function

This API is used to create an API group. An API group is an API management unit and the entry to a service. A subdomain name is returned as the access entry when an API group is created. APIs in an API group should be correlated with each other.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/api-groups

Table 4-18 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-19 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-20 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	API group name. The value contains 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. Minimum: 3 Maximum: 255
remark	No	String	Description of the API group. Maximum: 1000
roma_app_id	No	String	ID of the integration application to which an API group belongs. This parameter is mandatory when the group version is V2.
version	No	String	Group version. • V1: global group • V2: application-level group

Response Parameters

Status code: 201**Table 4-21** Response body parameters

Parameter	Type	Description
id	String	ID.

Parameter	Type	Description
name	String	API group name.
status	Integer	Status. 1: valid
sl_domain	String	Subdomain name that ROMA Connect automatically allocates to the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.
remark	String	Description.
register_time	String	Creation time.
update_time	String	Last modification time.
call_limits	Integer	Total number of times all APIs in the API group can be accessed. Set this parameter while considering the payload capacity of the backend service. By default, there is no limit on the number of API calls. This parameter is currently not supported.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter is currently not supported.
time_unit	String	Time unit for limiting the number of API calls. This parameter is currently not supported.
url_domains	Array of UrlDomain objects	List of independent domain names bound to the API group.
on_sell_status	Integer	Indicates whether the API group has been listed on the Marketplace. 1: listed 2: not listed 3: under review Currently, ROMA Connect is not interconnected with the Marketplace. The default value of this parameter is 2.
is_default	Integer	Indicates whether the API group is the default group.
version	String	Group version. - V1: global group - V2: application-level group

Parameter	Type	Description
roma_app_id	String	ID of the integration application to which an API group belongs. This parameter is mandatory when the group version is V2.
roma_app_name	String	Name of the integration application to which the API group belongs.

Table 4-22 UrlDomain

Parameter	Type	Description
id	String	Domain ID.
domain	String	Domain name.
cname_status	Integer	CNAME resolution status of the domain name. • 1: not resolved • 2: resolving • 3: resolved • 4: resolving failed
ssl_id	String	SSL certificate ID.
ssl_name	String	SSL certificate name.
min_ssl_version	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1

Status code: 400**Table 4-23** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-24 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-25** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-26** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-27** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "name" : "api_group_001",  
  "remark" : "group1"  
}
```

Example Responses

Status code: 201

Created

```
{
  "update_time" : "2020-07-31T06:55:55.383169299Z",
  "name" : "api_group_001",
  "on_sell_status" : 2,
  "remark" : "group1",
  "sl_domains" : [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ],
  "sl_domain" : "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
  "id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "register_time" : "2020-07-31T06:55:55.383169068Z",
  "status" : 1,
  "is_default" : 2,
  "version" : "V1"
}
```

Status code: 400**Bad Request**

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401**Unauthorized**

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403**Forbidden**

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404**Not Found**

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500**Internal Server Error**

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2 Modifying an API Group

Function

This API is used to modify the attributes of an API group. Only the name and remark attributes of an API group can be modified.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}

Table 4-28 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.

Request Parameters

Table 4-29 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-30 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	API group name. The value contains 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. Minimum: 3 Maximum: 255
remark	No	String	Description of the API group. Maximum: 1000

Response Parameters

Status code: 200**Table 4-31** Response body parameters

Parameter	Type	Description
id	String	ID.
name	String	API group name.
status	Integer	Status. 1: valid
sl_domain	String	Subdomain name that ROMA Connect automatically allocates to the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.

Parameter	Type	Description
remark	String	Description.
register_time	String	Creation time.
update_time	String	Last modification time.
call_limits	Integer	Total number of times all APIs in the API group can be accessed. Set this parameter while considering the payload capacity of the backend service. By default, there is no limit on the number of API calls. This parameter is currently not supported.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter is currently not supported.
time_unit	String	Time unit for limiting the number of API calls. This parameter is currently not supported.
url_domains	Array of UrlDomain objects	List of independent domain names bound to the API group.
on_sell_status	Integer	Indicates whether the API group has been listed on the Marketplace. • 1: listed • 2: not listed • 3: under review Currently, ROMA Connect is not interconnected with the Marketplace. The default value of this parameter is 2.
is_default	Integer	Indicates whether the API group is the default group.
version	String	Group version. • V1: global group • V2: application-level group
roma_app_id	String	ID of the integration application to which an API group belongs. This parameter is mandatory when the group version is V2.
roma_app_name	String	Name of the integration application to which the API group belongs.

Table 4-32 UrlDomain

Parameter	Type	Description
id	String	Domain ID.
domain	String	Domain name.
cname_status	Integer	CNAME resolution status of the domain name. • 1: not resolved • 2: resolving • 3: resolved • 4: resolving failed
ssl_id	String	SSL certificate ID.
ssl_name	String	SSL certificate name.
min_ssl_version	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1

Status code: 401**Table 4-33** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-34** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-35 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-36** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "api_group_001",
  "remark" : "group1"
}
```

Example Responses**Status code: 200**

OK

```
{
  "update_time" : "2020-07-31T06:55:55Z.866474185Z",
  "name" : "api_group_001",
  "on_sell_status" : 2,
  "remark" : "group1",
  "sl_domains" : [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ],
  "sl_domain" : "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
  "id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "register_time" : "2020-07-31T06:55:55Z",
  "status" : 1,
  "is_default" : 2,
  "version" : "V1"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3 Deleting an API Group

Function

This API is used to delete an API group.

This operation will also delete all resources associated with the API group, including APIs, independent domain names, SSL certificates, listing information, as

well as the authorization, orchestration, whitelist, and enhanced authentication information of all APIs in the API group. The operation will unbind the external domain names from the subdomain name based on the CNAME resolution mode.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}

Table 4-37 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.

Request Parameters

Table 4-38 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-39 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-40 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-41** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-42** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4 Querying Details of an API Group

Function

This API is used to query the details of an API group.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}

Table 4-43 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.

Request Parameters

Table 4-44 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-45 Response body parameters

Parameter	Type	Description
id	String	ID.
name	String	API group name.
status	Integer	Status. 1: valid
sl_domain	String	Subdomain name that ROMA Connect automatically allocates to the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.
remark	String	Description.
register_time	String	Creation time.
update_time	String	Last modification time.
call_limits	Integer	Total number of times all APIs in the API group can be accessed. Set this parameter while considering the payload capacity of the backend service. By default, there is no limit on the number of API calls. This parameter is currently not supported.

Parameter	Type	Description
time_interval	Integer	Period of time for limiting the number of API calls. This parameter is currently not supported.
time_unit	String	Time unit for limiting the number of API calls. This parameter is currently not supported.
url_domains	Array of UrlDomain objects	List of independent domain names bound to the API group.
on_sell_status	Integer	Indicates whether the API group has been listed on the Marketplace. • 1: listed • 2: not listed • 3: under review Currently, ROMA Connect is not interconnected with the Marketplace. The default value of this parameter is 2.
is_default	Integer	Indicates whether the API group is the default group.
version	String	Group version. • V1: global group • V2: application-level group
roma_app_id	String	ID of the integration application to which an API group belongs. This parameter is mandatory when the group version is V2.
roma_app_name	String	Name of the integration application to which the API group belongs.

Table 4-46 UrlDomain

Parameter	Type	Description
id	String	Domain ID.
domain	String	Domain name.

Parameter	Type	Description
cname_status	Integer	CNAME resolution status of the domain name. • 1: not resolved • 2: resolving • 3: resolved • 4: resolving failed
ssl_id	String	SSL certificate ID.
ssl_name	String	SSL certificate name.
min_ssl_version	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1

Status code: 400**Table 4-47** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-48** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-49** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-50** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "update_time" : "2020-07-31T06:55:55Z",
  "name" : "api_group_001",
  "on_sell_status" : 2,
  "remark" : "group1",
  "sl_domains" : [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ],
  "sl_domain" : "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
  "id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "register_time" : "2020-07-31T06:55:55Z",
  "status" : 1,
  "is_default" : 2,
  "version" : "V1"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.2.5 Querying API Groups****Function**

This API is used to query API groups.

You can call this API to query all of your API groups.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/api-groups

Table 4-51 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-52 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	API group ID.
name	No	String	API group name.
roma_app_id	No	String	Integration application ID.
precise_search	No	String	Parameter name for exact matching. Only API group names are supported.

Request Parameters

Table 4-53 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-54 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
groups	Array of ApiGroupInfo objects	API group list.

Table 4-55 ApiGroupInfo

Parameter	Type	Description
id	String	ID.
name	String	API group name.
status	Integer	Status. 1: valid
sl_domain	String	Subdomain name that ROMA Connect automatically allocates to the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.
remark	String	Description.
register_time	String	Creation time.
update_time	String	Last modification time.
call_limits	Integer	Total number of times all APIs in the API group can be accessed. Set this parameter while considering the payload capacity of the backend service. By default, there is no limit on the number of API calls. This parameter is currently not supported.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter is currently not supported.
time_unit	String	Time unit for limiting the number of API calls. This parameter is currently not supported.

Parameter	Type	Description
url_domains	Array of UrlDomain objects	List of independent domain names bound to the API group.
on_sell_status	Integer	Indicates whether the API group has been listed on the Marketplace. • 1: listed • 2: not listed • 3: under review Currently, ROMA Connect is not interconnected with the Marketplace. The default value of this parameter is 2.
is_default	Integer	Indicates whether the API group is the default group.
version	String	Group version. • V1: global group • V2: application-level group
roma_app_id	String	ID of the integration application to which an API group belongs. This parameter is mandatory when the group version is V2.
roma_app_name	String	Name of the integration application to which the API group belongs.

Table 4-56 UrlDomain

Parameter	Type	Description
id	String	Domain ID.
domain	String	Domain name.
cname_status	Integer	CNAME resolution status of the domain name. • 1: not resolved • 2: resolving • 3: resolved • 4: resolving failed
ssl_id	String	SSL certificate ID.
ssl_name	String	SSL certificate name.

Parameter	Type	Description
min_ssl_version	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1

Status code: 400**Table 4-57** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-58** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-59** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-60** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-61** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "groups" : [ {
    "update_time" : "2020-07-31T06:55:55Z",
    "name" : "api_group_001",
    "on_sell_status" : 2,
    "remark" : "group1",
    "sl_domains" : [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
"c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ],
    "sl_domain" : "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
    "register_time" : "2020-07-31T06:55:55Z",
    "status" : 1,
    "is_default" : 2,
    "version" : "V1"
  }, {
    "update_time" : "2020-06-24T15:29:42.421926Z",
    "name" : "api_group_002",
    "on_sell_status" : 2,
    "remark" : "group2",
    "sl_domain" : "02a8ab3cb2784de5a096852829671ae7.apic.***.com",
    "sl_domains" : [ "02a8ab3cb2784de5a096852829671ae7.apic.***.com",
"02a8ab3cb2784de5a096852829671ae7.apic.***.cn" ],
    "id" : "02a8ab3cb2784de5a096852829671ae7",
    "register_time" : "2020-06-24T15:29:42.421926Z",
    "status" : 1,
    "is_default" : 2,
    "version" : "V1"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6 Verifying an API Group Name

Function

This API is used to check whether the API group name exists.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/api-groups/check

Table 4-62 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-63 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-64 Request body parameters

Parameter	Mandatory	Type	Description
group_name	Yes	String	Name of the API group to be verified.
roma_app_id	No	String	Integration application ID. This parameter is mandatory for checking whether the group name is the same as that of an integrated application. If this parameter is not set, the system checks whether the global group name is the same as that of an integrated application by default.

Response Parameters

Status code: 400

Table 4-65 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-66** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-67** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-68** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-69** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "group_name" : "ApiGroup_demo"  
}
```

Example Responses

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.3201",  
  "error_msg" : "The API group name already exists"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code" : "APIG.1002",  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "APIG.1005",  
  "error_msg" : "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "APIG.3030",  
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3 API Management

4.3.1 Creating an API

Function

This API is used to create an API. API is an interface that encapsulates a set of service capabilities.

The definition of an API defines how the API is called by users and how ROMA Connect accesses the actual backend service requested by users. APIC supports three backend types: HTTP/HTTPS web, FunctionGraph, and Mock.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apis

Table 4-70 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-71 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-72 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Yes	Integer	API type. 1: public 2: private
version	No	String	API version. Maximum: 16
req_protocol	Yes	String	API request protocol. - HTTP - HTTPS - BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	Yes	String	API request method.

Parameter	Mandatory	Type	Description
req_uri	Yes	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	Yes	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	No	AuthOpt object	Security authentication parameter.
cors	No	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	No	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	Yes	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	No	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000

Parameter	Mandatory	Type	Description
group_id	Yes	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	No	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	No	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	No	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	No	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	No	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	No	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65

Parameter	Mandatory	Type	Description
roma_app_id	No	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	No	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	No	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
mock_info	No	ApiMockCreate object	Mock backend details.
func_info	No	ApiFuncCreate object	FunctionGraph backend details.
req_params	No	Array of ReqParamBase objects	Request parameters.
backend_params	No	Array of BackendParamBase objects	Backend parameters
policy_mocks	No	Array of ApiPolicyMockCreate objects	Mock policy backends
policy_functions	No	Array of ApiPolicyFunctionCreate objects	FunctionGraph policy backends
backend_api	No	BackendApiCreate object	Web backend details

Parameter	Mandatory	Type	Description
policy_https	No	Array of ApiPolicyHttpCreate objects	Web policy backends

Table 4-73 AuthOpt

Parameter	Mandatory	Type	Description
app_code_auth_type	No	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-74 ApiMockCreate

Parameter	Mandatory	Type	Description
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	No	String	Response.
version	No	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-75 ApiFuncCreate

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN.

Parameter	Mandatory	Type	Description
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
invocation_type	Yes	String	Invocation mode. • async: asynchronous • sync: synchronous
version	No	String	Version. Maximum: 64
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-76 ReqParamBase

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	Yes	String	Parameter type.
location	Yes	String	Parameter location.
default_value	No	String	Default value.
sample_value	No	String	Example value.

Parameter	Mandatory	Type	Description
required	No	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	No	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled
remark	No	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	No	String	Enumerated value.
min_num	No	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	No	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	No	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	No	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	No	String	Regular expression validation rule. This parameter is currently not supported.
json_schema	No	String	JSON validation rule. This parameter is currently not supported.

Parameter	Mandatory	Type	Description
pass_through	No	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.

Table 4-77 ApiPolicyMockCreate

Parameter	Mandatory	Type	Description
result_content	No	String	Response.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
backend_parameters	No	Array of BackendParameterBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-78 ApiPolicyFunctionCreate

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN.
invocation_type	Yes	String	Invocation mode. • async: asynchronous • sync: synchronous

Parameter	Mandatory	Type	Description
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
version	No	String	Version. Ensure that the version does not exceed 64 characters.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
backend_params	No	Array of BackendParamBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-79 BackendApiCreate

Parameter	Mandatory	Type	Description
authorizer_id	No	String	Backend custom authorizer ID.

Parameter	Mandatory	Type	Description
url_domain	No	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	Yes	String	Request protocol.
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	Yes	String	Request method.
version	No	String	Web backend version, which can contain a maximum of 16 characters.

Parameter	Mandatory	Type	Description
req_uri	Yes	String	Request URI. The value can contain request parameters identified by braces {}, for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	No	Boolean	Whether to enable two-way authentication.
vpc_channel_info	No	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	No	Integer	Indicates whether to use a VPC channel. • 1: A VPC channel is used. • 2: No VPC channel is used.

Table 4-80 VpcInfo

Parameter	Mandatory	Type	Description
ecs_id	No	String	Cloud server ID.

Parameter	Mandatory	Type	Description
ecs_name	No	Integer	Cloud server name.
cascade_flag	No	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	No	String	Proxy host.
vpc_channel_id	No	String	VPC channel ID. Maximum: 64
vpc_channel_port	No	String	VPC channel port.

Table 4-81 ApiPolicyHttpCreate

Parameter	Mandatory	Type	Description
url_domain	No	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	Yes	String	Request protocol. The value can be HTTP or HTTPS.
req_method	Yes	String	Request method

Parameter	Mandatory	Type	Description
req_uri	Yes	String	Request URI. The value can contain request parameters identified by braces {}, for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	No	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	No	Boolean	Whether to enable two-way authentication.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64

Parameter	Mandatory	Type	Description
backend_params	No	Array of BackendParamBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.
vpc_channel_info	No	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	No	Integer	Indicates whether to use a VPC channel. • 1: A VPC channel is used. • 2: No VPC channel is used.

Table 4-82 BackendParamBase

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	Yes	String	Parameter location. The value can be PATH, QUERY, or HEADER.
origin	Yes	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.

Parameter	Mandatory	Type	Description
value	Yes	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255

Table 4-83 ApiConditionCreate

Parameter	Mandatory	Type	Description
req_param_name	No	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	No	String	Policy condition. • exact: exact match • enum: enumeration • pattern: regular expression This parameter is required if the policy type is param.
condition_origin	Yes	String	Policy type. • param: input parameter • source: source IP address
condition_value	Yes	String	Policy value.

Response Parameters

Status code: 201

Table 4-84 Response body parameters

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. • 1: public • 2: private
version	String	API version. Maximum: 16
req_protocol	String	API request protocol. • HTTP • HTTPS • BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.

Parameter	Type	Description
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65

Parameter	Type	Description
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
status	Integer	API status. 1: valid
arrange_necessary	Integer	Indicates whether orchestration is required.
register_time	String	Time when the API was registered.
update_time	String	Time when the API was last modified.
group_name	String	API group name.
group_version	String	Version of the API group to which the API belongs.
run_env_name	String	Name of the environment in which the API was published

Parameter	Type	Description
run_env_id	String	ID of the environment in which the API was published.
publish_id	String	Publication record ID. You can separate multiple publication records with vertical bars ().
roma_app_name	String	Name of the integration application to which the API belongs.
ld_api_id	String	ID of the custom backend API when the API backend is a custom backend.
func_info	ApiFunc object	FunctionGraph backend details.
mock_info	ApiMock object	Mock backend details.
req_params	Array of ReqParam objects	Request parameters.
backend_params	Array of BackendParam objects	Backend parameters
policy_functions	Array of ApiPolicyFunctionResp objects	FunctionGraph policy backends
policy_mocks	Array of ApiPolicyMockResp objects	Mock policy backends
backend_api	BackendApi object	Web backend details
policy_https	Array of ApiPolicyHttpResp objects	Web policy backends

Table 4-85 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-86 ApiFunc

Parameter	Type	Description
function_urn	String	Function URN.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
invocation_type	String	Invocation mode. - async: asynchronous - sync: synchronous
version	String	Version. Maximum: 64
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. 1: valid
update_time	String	Update time.

Table 4-87 ApiMock

Parameter	Type	Description
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	String	Response.
version	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-88 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled

Parameter	Type	Description
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Table 4-89 ApiPolicyFunctionResp

Parameter	Type	Description
function_urn	String	Function URN.
invocation_type	String	Invocation mode. • async: asynchronous • sync: synchronous

Parameter	Type	Description
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
version	String	Version. Ensure that the version does not exceed 64 characters.
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Table 4-90 ApiPolicyMockResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64

Parameter	Type	Description
conditions	Array of ConditionResponse objects	Policy conditions
backend_params	Array of BackendParameter objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
result_content	String	Response.

Table 4-91 BackendApi

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID.
url_domain	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	String	Request protocol.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	String	Request method.

Parameter	Type	Description
version	String	Web backend version, which can contain a maximum of 16 characters.
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
id	String	ID.
status	Integer	Backend status. 1: valid
register_time	String	Registration time.
update_time	String	Update time.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-92 VpcInfo

Parameter	Type	Description
ecs_id	String	Cloud server ID.

Parameter	Type	Description
ecs_name	Integer	Cloud server name.
cascade_flag	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	String	Proxy host.
vpc_channel_id	String	VPC channel ID. Maximum: 64
vpc_channel_port	String	VPC channel port.

Table 4-93 ApiPolicyHttpResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Parameter	Type	Description
url_domain	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	String	Request protocol. The value can be HTTP or HTTPS.
req_method	String	Request method
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.

Parameter	Type	Description
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-94 ConditionResp

Parameter	Type	Description
req_param_name	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	String	Policy condition. - exact: exact match - enum: enumeration - pattern: regular expression This parameter is required if the policy type is param.
condition_origin	String	Policy type. - param: input parameter - source: source IP address
condition_value	String	Policy value.
id	String	ID.
req_param_id	String	Input parameter ID.
req_param_location	String	Input parameter location.

Table 4-95 BackendParam

Parameter	Type	Description
name	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	String	Parameter location. The value can be PATH, QUERY, or HEADER.

Parameter	Type	Description
origin	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.
value	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
id	String	Parameter ID.
req_param_id	String	ID of the request parameter to which the backend parameter is mapped.

Status code: 400**Table 4-96** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-97** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-98 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-99** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-100** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

- API for creating a web backend

```
{
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "match_mode" : "NORMAL",
  "name" : "Api_http",
  "auth_type" : "AUTHORIZER",
  "authorizer_id" : "0d982c1ac3da493dae47627b6439fc5c",
  "backend_type" : "HTTP",
  "backend_api" : {
    "url_domain" : "10.10.10.156:12346",
    "req_protocol" : "HTTP",
    "req_method" : "GET",
    "req_uri" : "/test/benchmark",
    "timeout" : 5000
  },
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/http",
  "remark" : "Web backend API",
  "type" : 1,
  "req_method" : "GET",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "tags" : [ "webApi" ],
  "req_params" : [ {
    "name" : "query_demo",
```



```
"location" : "QUERY",
"type" : "STRING",
"required" : 1
}, {
  "name" : "header-demo",
  "location" : "HEADER",
  "type" : "STRING",
  "required" : 2
}],
"backend_params" : [ {
  "name" : "backHeader",
  "value" : "header-demo",
  "location" : "HEADER",
  "origin" : "REQUEST"
}, {
  "name" : "backQuery",
  "value" : "query_demo",
  "location" : "QUERY",
  "origin" : "REQUEST"
}, {
  "name" : "X-CONSTANT-HEADER",
  "value" : "demo",
  "location" : "HEADER",
  "origin" : "CONSTANT",
  "remark" : "constant_demo"
}, {
  "name" : "app-id",
  "value" : "$context.appId",
  "location" : "HEADER",
  "origin" : "SYSTEM",
  "remark" : "Application ID of the invoker."
} ]
}
```

- API for creating a FunctinGraph backend

```
{
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "match_mode" : "NORMAL",
  "name" : "Api_function",
  "auth_type" : "APP",
  "backend_type" : "FUNCTION",
  "func_info" : {
    "authorizer_id" : "5b8cd3f06f004115aec69c58f57272c9",
    "function_urn" :
    "urn:fss:region01:73d69ae0cfcf460190522d06b60f05ad:function:default:auto_testfunc93749",
    "invocation_type" : "sync",
    "timeout" : 5000,
    "version" : "latest"
  },
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/function",
  "remark" : "FunctionGraph backend API",
  "type" : 1,
  "req_method" : "GET",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "tags" : [ "functionApi" ]
}
```

- API for creating a Mock backend

```
{
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "match_mode" : "SWA",
  "name" : "Api_mock",
  "auth_type" : "IAM",
  "backend_type" : "MOCK",
  "mock_info" : {
    "result_content" : "mock success"
  },
  "policy_mocks" : [ {
```

```
{
  "name": "mock policy backend",
  "effect_mode": "ANY",
  "result_content": "mock policy success",
  "conditions": [ {
    "condition_origin": "source",
    "condition_value": "1.0.1.0"
  } ],
  "req_protocol": "HTTPS",
  "req_uri": "/test/mock",
  "remark": "Mock backend API",
  "type": 1,
  "req_method": "GET",
  "result_normal_sample": "Normal response example",
  "result_failure_sample": "Failure response example",
  "tags": [ "mockApi" ]
}
```

Example Responses

Status code: 201

Created

- Example 1

```
{
  "id": "5f918d104dc84480a75166ba99efff21",
  "tags": [ "webApi" ],
  "arrange_necessary": 2,
  "backend_type": "HTTP",
  "auth_type": "AUTHORIZER",
  "auth_opt": {
    "app_code_auth_type": "DISABLE"
  },
  "authorizer_id": "0d982c1ac3da493dae47627b6439fc5c",
  "backend_api": {
    "update_time": "2020-07-31T12:42:51.325312994Z",
    "vpc_channel_status": 2,
    "url_domain": "10.10.10.156:12346",
    "req_protocol": "HTTP",
    "id": "1ce8fda3586d4371bd83c955df37e102",
    "req_method": "GET",
    "register_time": "2020-07-31T12:42:51.325312721Z",
    "req_uri": "/benchmark",
    "timeout": 5000,
    "status": 1
  },
  "cors": false,
  "status": 1,
  "group_name": "api_group_001",
  "group_id": "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_version": "V1",
  "match_mode": "NORMAL",
  "name": "Api_http",
  "req_protocol": "HTTPS",
  "req_method": "GET",
  "req_uri": "/test/http",
  "type": 1,
  "result_normal_sample": "Normal response example",
  "result_failure_sample": "Failure response example",
  "version": "V0.0.1",
  "register_time": "2020-07-31T12:42:51.314357035Z",
  "update_time": "2020-07-31T12:42:51.314357324Z",
  "remark": "Web backend API",
  "req_params": [ {
    "name": "query_demo",
    "location": "QUERY",
    "type": "STRING",
  } ]
}
```

```
"valid_enable" : 2,
"required" : 1,
"id" : "57c8bf3c97ef40ee94eace95dff30014",
"pass_through" : 1
}, {
  "name" : "header-demo",
  "location" : "HEADER",
  "type" : "STRING",
  "valid_enable" : 2,
  "required" : 2,
  "id" : "8d993be96980415faa6b1fb2ebd647e0",
  "pass_through" : 1
}],
"backend_params" : [ {
  "name" : "backHeader",
  "value" : "header-demo",
  "location" : "HEADER",
  "origin" : "REQUEST",
  "id" : "709f0ea376b44aaf907aaaa37d8cce92",
  "req_param_id" : "8d993be96980415faa6b1fb2ebd647e0"
}, {
  "name" : "backQuery",
  "value" : "query_demo",
  "location" : "QUERY",
  "origin" : "REQUEST",
  "id" : "2f152d0fb54445039158d29c2a4f69ee",
  "req_param_id" : "57c8bf3c97ef40ee94eace95dff30014"
}, {
  "name" : "X-CONSTANT-HEADER",
  "value" : "demo",
  "location" : "HEADER",
  "origin" : "CONSTANT",
  "remark" : "constant_demo",
  "id" : "20142102c6aa4f3c97d5fd6ef4010ac2"
}, {
  "name" : "app-id",
  "value" : "$context.appld",
  "location" : "HEADER",
  "origin" : "SYSTEM",
  "remark" : "Application ID of the invoker.",
  "id" : "a1349c61016e4d999ca783a50bfeee2b"
}
]
```

- Example 2

```
{
  "id" : "abd9c4b2ff974888b0ba79be7e6b2763",
  "arrange_necessary" : 2,
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "group_version" : "V1",
  "match_mode" : "NORMAL",
  "name" : "Api_function",
  "auth_type" : "APP",
  "auth_opt" : {
    "auth_code_auth_type" : "DISABLE"
  },
  "backend_type" : "FUNCTION",
  "func_info" : {
    "id" : "c0740524cd4c40e3801a7afe5375f8b0",
    "authorizer_id" : "5b8cd3f06f004115aec69c58f57272c9",
    "function_urn" :
"urn:fss:region01:73d69ae0cfcf460190522d06b60f05ad:function:default:auto_testfunc93749",
    "invocation_type" : "sync",
    "timeout" : 5000,
    "version" : "latest",
    "register_time" : "2020-08-02T15:36:19.897262803Z",
    "update_time" : "2020-08-02T15:36:19.897262993Z",
    "status" : 1
  },
}
```

```
"cors" : false,
"req_protocol" : "HTTPS",
"req_uri" : "/test/function",
"remark" : "FunctionGraph backend API",
"type" : 1,
"version" : "V0.0.1",
"status" : 1,
"req_method" : "GET",
"result_normal_sample" : "Normal response example",
"result_failure_sample" : "Failure response example",
"tags" : [ "functionApi" ],
"register_time" : "2020-08-02T15:36:19.892012381Z",
"update_time" : "2020-08-02T15:36:19.892012627Z"
}
```

- Example 3

```
{
  "id" : "3a955b791bd24b1c9cd94c745f8d1aad",
  "arrange_necessary" : 2,
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "group_version" : "V1",
  "match_mode" : "SWA",
  "name" : "Api_mock",
  "auth_type" : "IAM",
  "auth_opt" : {
    "auth_code_auth_type" : "DISABLE"
  },
  "backend_type" : "MOCK",
  "mock_info" : {
    "id" : "e74bbc75825c4c38ae84ccab6bdc6175",
    "result_content" : "mock success",
    "update_time" : "2020-08-02T15:56:52.301790686Z",
    "register_time" : "2020-08-02T15:56:52.301790367Z"
  },
  "policy_mocks" : [ {
    "name" : "mock policy backend",
    "id" : "1cb05173a4c84b7d996e30145cce3c7d",
    "effect_mode" : "ANY",
    "result_content" : "mock policy success",
    "conditions" : [ {
      "condition_origin" : "source",
      "condition_value" : "1.0.1.0",
      "id" : "8650b3a94e7344df8251658d8aee1f6d"
    } ]
  } ],
  "cors" : false,
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/mock",
  "remark" : "Mock backend API",
  "type" : 1,
  "version" : "V0.0.1",
  "req_method" : "GET",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "tags" : [ "mockApi" ],
  "register_time" : "2020-08-02T15:56:52.286099413Z",
  "update_time" : "2020-08-02T15:56:52.286099715Z",
  "status" : 1
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3019",
  "error_msg" : "The function URN does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.3.2 Modifying an API

Function

This API is used to modify the information about an API, including its backend information.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/apis/{api_id}

Table 4-101 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Request Parameters

Table 4-102 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-103 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Yes	Integer	API type. 1: public 2: private
version	No	String	API version. Maximum: 16
req_protocol	Yes	String	API request protocol. - HTTP - HTTPS - BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	Yes	String	API request method.
req_uri	Yes	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.

Parameter	Mandatory	Type	Description
auth_type	Yes	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	No	AuthOpt object	Security authentication parameter.
cors	No	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	No	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	Yes	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	No	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	Yes	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	No	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480

Parameter	Mandatory	Type	Description
result_normal_sample	No	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	No	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	No	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	No	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	No	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	No	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65

Parameter	Mandatory	Type	Description
domain_name	No	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	No	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
mock_info	No	ApiMockCreate object	Mock backend details.
func_info	No	ApiFuncCreate object	FunctionGraph backend details.
req_params	No	Array of ReqParamBase objects	Request parameters.
backend_params	No	Array of BackendParamBase objects	Backend parameters
policy_mocks	No	Array of ApiPolicyMockCreate objects	Mock policy backends
policy_functions	No	Array of ApiPolicyFunctionCreate objects	FunctionGraph policy backends
backend_api	No	BackendApiCreate object	Web backend details
policy_https	No	Array of ApiPolicyHttpCreate objects	Web policy backends

Table 4-104 AuthOpt

Parameter	Mandatory	Type	Description
app_code_auth_type	No	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-105 ApiMockCreate

Parameter	Mandatory	Type	Description
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	No	String	Response.
version	No	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-106 ApiFuncCreate

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN.
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255

Parameter	Mandatory	Type	Description
invocation_type	Yes	String	Invocation mode. • async: asynchronous • sync: synchronous
version	No	String	Version. Maximum: 64
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-107 ReqParamBase

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	Yes	String	Parameter type.
location	Yes	String	Parameter location.
default_value	No	String	Default value.
sample_value	No	String	Example value.
required	No	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.

Parameter	Mandatory	Type	Description
valid_enable	No	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled
remark	No	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	No	String	Enumerated value.
min_num	No	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	No	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	No	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	No	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	No	String	Regular expression validation rule. This parameter is currently not supported.
json_schema	No	String	JSON validation rule. This parameter is currently not supported.
pass_through	No	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.

Table 4-108 ApiPolicyMockCreate

Parameter	Mandatory	Type	Description
result_content	No	String	Response.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
backend_params	No	Array of BackendParamBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-109 ApiPolicyFunctionCreate

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN.
invocation_type	Yes	String	Invocation mode. • async: asynchronous • sync: synchronous
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1

Parameter	Mandatory	Type	Description
version	No	String	Version. Ensure that the version does not exceed 64 characters.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
backend_params	No	Array of BackendParamBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.

Table 4-110 BackendApiCreate

Parameter	Mandatory	Type	Description
authorizer_id	No	String	Backend custom authorizer ID.

Parameter	Mandatory	Type	Description
url_domain	No	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	Yes	String	Request protocol.
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	Yes	String	Request method.
version	No	String	Web backend version, which can contain a maximum of 16 characters.

Parameter	Mandatory	Type	Description
req_uri	Yes	String	Request URI. The value can contain request parameters identified by braces {}, for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Yes	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	No	Boolean	Whether to enable two-way authentication.
vpc_channel_info	No	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	No	Integer	Indicates whether to use a VPC channel. • 1: A VPC channel is used. • 2: No VPC channel is used.

Table 4-111 VpcInfo

Parameter	Mandatory	Type	Description
ecs_id	No	String	Cloud server ID.

Parameter	Mandatory	Type	Description
ecs_name	No	Integer	Cloud server name.
cascade_flag	No	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	No	String	Proxy host.
vpc_channel_id	No	String	VPC channel ID. Maximum: 64
vpc_channel_port	No	String	VPC channel port.

Table 4-112 ApiPolicyHttpCreate

Parameter	Mandatory	Type	Description
url_domain	No	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	Yes	String	Request protocol. The value can be HTTP or HTTPS.
req_method	Yes	String	Request method

Parameter	Mandatory	Type	Description
req_uri	Yes	String	Request URI. The value can contain request parameters identified by braces {}, for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	No	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	No	Boolean	Whether to enable two-way authentication.
effect_mode	Yes	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
name	Yes	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64

Parameter	Mandatory	Type	Description
backend_params	No	Array of BackendParamBase objects	Backend parameters
conditions	Yes	Array of ApiConditionCreate objects	Policy conditions
authorizer_id	No	String	Backend custom authorizer ID.
vpc_channel_info	No	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	No	Integer	Indicates whether to use a VPC channel. • 1: A VPC channel is used. • 2: No VPC channel is used.

Table 4-113 BackendParamBase

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	Yes	String	Parameter location. The value can be PATH, QUERY, or HEADER.
origin	Yes	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.

Parameter	Mandatory	Type	Description
value	Yes	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255

Table 4-114 ApiConditionCreate

Parameter	Mandatory	Type	Description
req_param_name	No	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	No	String	Policy condition. • exact: exact match • enum: enumeration • pattern: regular expression This parameter is required if the policy type is param.
condition_origin	Yes	String	Policy type. • param: input parameter • source: source IP address
condition_value	Yes	String	Policy value.

Response Parameters

Status code: 200

Table 4-115 Response body parameters

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. 1: public 2: private
version	String	API version. Maximum: 16
req_protocol	String	API request protocol. - HTTP - HTTPS - BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	String	Security authentication mode. - NONE - APP - IAM - AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.

Parameter	Type	Description
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65

Parameter	Type	Description
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
status	Integer	API status. 1: valid
arrange_necessary	Integer	Indicates whether orchestration is required.
register_time	String	Time when the API was registered.
update_time	String	Time when the API was last modified.
group_name	String	API group name.
group_version	String	Version of the API group to which the API belongs.
run_env_name	String	Name of the environment in which the API was published

Parameter	Type	Description
run_env_id	String	ID of the environment in which the API was published.
publish_id	String	Publication record ID. You can separate multiple publication records with vertical bars ().
roma_app_name	String	Name of the integration application to which the API belongs.
ld_api_id	String	ID of the custom backend API when the API backend is a custom backend.
func_info	ApiFunc object	FunctionGraph backend details.
mock_info	ApiMock object	Mock backend details.
req_params	Array of ReqParam objects	Request parameters.
backend_params	Array of BackendParam objects	Backend parameters
policy_functions	Array of ApiPolicyFunctionResp objects	FunctionGraph policy backends
policy_mocks	Array of ApiPolicyMockResp objects	Mock policy backends
backend_api	BackendApi object	Web backend details
policy_https	Array of ApiPolicyHttpResp objects	Web policy backends

Table 4-116 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-117 ApiFunc

Parameter	Type	Description
function_urn	String	Function URN.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
invocation_type	String	Invocation mode. - async: asynchronous - sync: synchronous
version	String	Version. Maximum: 64
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. 1: valid
update_time	String	Update time.

Table 4-118 ApiMock

Parameter	Type	Description
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	String	Response.
version	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-119 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled

Parameter	Type	Description
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Table 4-120 ApiPolicyFunctionResp

Parameter	Type	Description
function_urn	String	Function URN.
invocation_type	String	Invocation mode. • async: asynchronous • sync: synchronous

Parameter	Type	Description
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
version	String	Version. Ensure that the version does not exceed 64 characters.
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Table 4-121 ApiPolicyMockResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64

Parameter	Type	Description
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
result_content	String	Response.

Table 4-122 BackendApi

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID.
url_domain	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	String	Request protocol.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	String	Request method.

Parameter	Type	Description
version	String	Web backend version, which can contain a maximum of 16 characters.
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
id	String	ID.
status	Integer	Backend status. 1: valid
register_time	String	Registration time.
update_time	String	Update time.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-123 VpcInfo

Parameter	Type	Description
ecs_id	String	Cloud server ID.

Parameter	Type	Description
ecs_name	Integer	Cloud server name.
cascade_flag	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	String	Proxy host.
vpc_channel_id	String	VPC channel ID. Maximum: 64
vpc_channel_port	String	VPC channel port.

Table 4-124 ApiPolicyHttpResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Parameter	Type	Description
url_domain	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	String	Request protocol. The value can be HTTP or HTTPS.
req_method	String	Request method
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.

Parameter	Type	Description
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-125 ConditionResp

Parameter	Type	Description
req_param_name	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	String	Policy condition. - exact: exact match - enum: enumeration - pattern: regular expression This parameter is required if the policy type is param.
condition_origin	String	Policy type. - param: input parameter - source: source IP address
condition_value	String	Policy value.
id	String	ID.
req_param_id	String	Input parameter ID.
req_param_location	String	Input parameter location.

Table 4-126 BackendParam

Parameter	Type	Description
name	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	String	Parameter location. The value can be PATH, QUERY, or HEADER.

Parameter	Type	Description
origin	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.
value	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
id	String	Parameter ID.
req_param_id	String	ID of the request parameter to which the backend parameter is mapped.

Status code: 400**Table 4-127** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-128** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-129 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-130** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-131** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "match_mode" : "NORMAL",
  "name" : "Api_http",
  "auth_type" : "APP",
  "backend_type" : "HTTP",
  "backend_api" : {
    "vpc_channel_status" : 1,
    "vpc_channel_info" : {
      "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
      "vpc_proxy_host" : "www.example.com"
    }
  },
  "req_protocol" : "HTTPS",
  "req_method" : "GET",
  "req_uri" : "/test/benchmark",
  "timeout" : 5000
},
{
  "cors" : false,
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/http",
  "remark" : "Web backend API",
  "type" : 1,
  "req_method" : "GET",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "backend_params" : [ {
```

```
"name" : "X-CONSTANT-HEADER",
"value" : "demo",
"location" : "HEADER",
"origin" : "CONSTANT",
"remark" : "constant_demo"
}, {
  "name" : "app-id",
  "value" : "$context.appId",
  "location" : "HEADER",
  "origin" : "SYSTEM",
  "remark" : "Application ID of the invoker."
}],
"tags" : [ "webApi" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "5f918d104dc84480a75166ba99efff21",
  "tags" : [ "webApi" ],
  "arrange_necessary" : 2,
  "backend_type" : "HTTP",
  "auth_type" : "APP",
  "auth_opt" : {
    "app_code_auth_type" : "DISABLE"
  },
  "backend_api" : {
    "update_time" : "2020-08-02T16:32:47.077028841Z",
    "vpc_channel_status" : 1,
    "vpc_channel_info" : {
      "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
      "vpc_channel_proxy_host" : "www.example.com"
    },
    "url_domain" : "56a7d7358e1b42459c9d730d65b14e59",
    "req_protocol" : "HTTPS",
    "id" : "1ce8fda3586d4371bd83c955df37e102",
    "req_method" : "GET",
    "register_time" : "2020-07-31T12:42:51Z",
    "req_uri" : "/test/benchmark",
    "timeout" : 5000,
    "status" : 1
  },
  "cors" : false,
  "status" : 1,
  "group_name" : "api_group_001",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_version" : "V1",
  "match_mode" : "NORMAL",
  "name" : "Api_http",
  "req_protocol" : "HTTPS",
  "req_method" : "GET",
  "req_uri" : "/test/http",
  "type" : 1,
  "version" : "V0.0.1",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "register_time" : "2020-07-31T12:42:51Z",
  "update_time" : "2020-08-02T16:32:47.046288842Z",
  "remark" : "Web backend API",
  "backend_params" : [ {
    "name" : "X-CONSTANT-HEADER",
    "value" : "demo",
    "location" : "HEADER",
    "origin" : "CONSTANT",
    "remark" : "constant_demo",
  } ]
}
```

```
"id" : "8cb2eba19e7a4423a4e835647a8b8d76"
}, {
  "name" : "app-id",
  "value" : "$context.appld",
  "location" : "HEADER",
  "origin" : "SYSTEM",
  "remark" : "Application ID of the invoker.",
  "id" : "216ddda836e74d528f364ff589d9dd21"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.3 Deleting an API

Function

This API is used to delete an API.

This operation will delete all related resources and binding relationships of the API, such as publication records, backend services, and app authorization information.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/apis/{api_id}

Table 4-132 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Request Parameters

Table 4-133 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401**Table 4-134** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-135** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-136** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-137 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.4 Publishing an API or Taking an API Offline

Function

This API is used to publish an API or take an API offline.

An API can be called in an environment where the API has been published. APIs that have not been published cannot be called.

You can remove an API from an environment in which it has been published. After this operation, the API can no longer be called in the environment.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apis/action

Table 4-138 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-139 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-140 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Required action. • online: Publish • offline: Take offline
api_id	Yes	String	ID of the API to be published or taken offline.
env_id	Yes	String	ID of the environment to which the API is to be published.
remark	No	String	Description of the publish action. The value can contain a maximum of 255 characters.

Response Parameters

Status code: 201

Table 4-141 Response body parameters

Parameter	Type	Description
publish_id	String	Publication record ID.
api_id	String	API ID.
api_name	String	API name.
env_id	String	ID of the environment in which the API has been published.
remark	String	Description about the publication.
publish_time	String	Time when the API is published.
version_id	String	API version currently in use.

Status code: 400

Table 4-142 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-143** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-144** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-145** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-146** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "action" : "online",
  "api_id" : "5f918d104dc84480a75166ba99efff21",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID"
}
```

Example Responses

Status code: 201

Created

```
{
  "api_id" : "5f918d104dc84480a75166ba99efff21",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "publish_id" : "9191cdb430724d4b8586ed7f1b962ca2",
  "publish_time" : "2020-08-03T01:36:00.592970615Z",
  "version_id" : "ee1a5a38d3d3493abf1dc4ed6cacfa0b"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:action. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.5 Querying Details of an API

Function

This API is used to query the details of an API.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apis/{api_id}

Table 4-147 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Request Parameters

Table 4-148 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-149** Response body parameters

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. 1: public 2: private
version	String	API version. Maximum: 16
req_protocol	String	API request protocol. - HTTP - HTTPS - BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.

Parameter	Type	Description
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65

Parameter	Type	Description
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255

Parameter	Type	Description
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
status	Integer	API status. 1: valid
arrange_necessary	Integer	Indicates whether orchestration is required.
register_time	String	Time when the API was registered.
update_time	String	Time when the API was last modified.
group_name	String	API group name.
group_version	String	Version of the API group to which the API belongs.
run_env_name	String	Name of the environment in which the API was published
run_env_id	String	ID of the environment in which the API was published.
publish_id	String	Publication record ID. You can separate multiple publication records with vertical bars ().
roma_app_name	String	Name of the integration application to which the API belongs.
ld_api_id	String	ID of the custom backend API when the API backend is a custom backend.
func_info	ApiFunc object	FunctionGraph backend details.
mock_info	ApiMock object	Mock backend details.
req_params	Array of ReqParam objects	Request parameters.
backend_params	Array of BackendParam objects	Backend parameters

Parameter	Type	Description
policy_functions	Array of ApiPolicyFunctionResp objects	FunctionGraph policy backends
policy_mock	Array of ApiPolicyMockResp objects	Mock policy backends
backend_api	BackendApi object	Web backend details
policy_https	Array of ApiPolicyHttpResp objects	Web policy backends

Table 4-150 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-151 ApiFunc

Parameter	Type	Description
function_urn	String	Function URN.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
invocation_type	String	Invocation mode. - async: asynchronous - sync: synchronous

Parameter	Type	Description
version	String	Version. Maximum: 64
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-152 ApiMock

Parameter	Type	Description
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	String	Response.
version	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-153 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.

Parameter	Type	Description
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Table 4-154 ApiPolicyFunctionResp

Parameter	Type	Description
function_urn	String	Function URN.
invocation_type	String	Invocation mode. • async: asynchronous • sync: synchronous
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
version	String	Version. Ensure that the version does not exceed 64 characters.
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Table 4-155 ApiPolicyMockResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
result_content	String	Response.

Table 4-156 BackendApi

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID.

Parameter	Type	Description
url_domain	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	String	Request protocol.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	String	Request method.
version	String	Web backend version, which can contain a maximum of 16 characters.
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1

Parameter	Type	Description
enable_client_ssl	Boolean	Whether to enable two-way authentication.
id	String	ID.
status	Integer	Backend status. 1: valid
register_time	String	Registration time.
update_time	String	Update time.
vpc_channel_info	VpclInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-157 VpclInfo

Parameter	Type	Description
ecs_id	String	Cloud server ID.
ecs_name	Integer	Cloud server name.
cascade_flag	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	String	Proxy host.
vpc_channel_id	String	VPC channel ID. Maximum: 64
vpc_channel_port	String	VPC channel port.

Table 4-158 ApiPolicyHttpResp

Parameter	Type	Description
id	String	ID.

Parameter	Type	Description
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
url_domain	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	String	Request protocol. The value can be HTTP or HTTPS.
req_method	String	Request method

Parameter	Type	Description
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-159 ConditionResp

Parameter	Type	Description
req_param_name	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	String	Policy condition. - exact: exact match - enum: enumeration - pattern: regular expression This parameter is required if the policy type is param.

Parameter	Type	Description
condition_origin	String	Policy type. - param: input parameter - source: source IP address
condition_value	String	Policy value.
id	String	ID.
req_param_id	String	Input parameter ID.
req_param_location	String	Input parameter location.

Table 4-160 BackendParam

Parameter	Type	Description
name	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	String	Parameter location. The value can be PATH, QUERY, or HEADER.
origin	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.
value	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
id	String	Parameter ID.
req_param_id	String	ID of the request parameter to which the backend parameter is mapped.

Status code: 401**Table 4-161** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-162** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-163** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-164** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "id": "5f918d104dc84480a75166ba99efff21",
  "tags": [ "webApi" ],
  "arrange_necessary": 2,
  "backend_type": "HTTP",
  "auth_type": "AUTHORIZER",
  "auth_opt": {
    "app_code_auth_type": "DISABLE"
  },
  "authorizer_id": "8d0443832a194eaa84244e0c1c1912ac",
  "backend_api": {
    "update_time": "2020-08-02T16:32:47.077029Z",
    "vpc_channel_status": 1,
    "vpc_channel_info": {
      "vpc_channel_id": "56a7d7358e1b42459c9d730d65b14e59",
      "vpc_channel_proxy_host": "www.example.com"
    },
    "url_domain": "56a7d7358e1b42459c9d730d65b14e59",
    "req_protocol": "HTTPS",
    "id": "1ce8fda3586d4371bd83c955df37e102",
    "req_method": "GET",
    "register_time": "2020-07-31T12:42:51Z",
    "req_uri": "/test/benchmark",
    "timeout": 5000,
    "status": 1
  },
  "cors": false,
  "status": 1,
  "group_name": "api_group_001",
  "group_id": "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_version": "V1",
  "match_mode": "NORMAL",
  "name": "Api_http",
  "req_protocol": "HTTPS",
  "req_method": "GET",
  "req_uri": "/test/http",
  "type": 1,
  "version": "V0.0.1",
  "result_normal_sample": "Normal response example",
  "result_failure_sample": "Failure response example",
  "register_time": "2020-07-31T12:42:51Z",
  "update_time": "2020-08-02T16:32:47.046289Z",
  "remark": "web backend api",
  "backend_params": [ {
    "name": "X-CONSTANT-HEADER",
    "value": "demo",
    "location": "HEADER",
    "origin": "CONSTANT",
    "remark": "constant_demo",
    "id": "8cb2eba19e7a4423a4e835647a8b8d76"
  }, {
    "name": "app-id",
    "value": "$context.appld",
    "location": "HEADER",
    "origin": "SYSTEM",
    "remark": "Application ID of the invoker.",
    "id": "216ddda836e74d528f364ff589d9dd21"
  } ]
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.3.6 Querying APIs****Function**

This API is used to query APIs to return details and publication information of the APIs. Backend information of the APIs will not be returned.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apis

Table 4-165 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-166 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	API ID.
name	No	String	API name.
group_id	No	String	API group ID.
req_protocol	No	String	Request protocol.
req_method	No	String	Request method.
req_uri	No	String	Request path.
auth_type	No	String	Authentication type.
env_id	No	String	ID of the environment in which the API has been published.
type	No	Integer	API type.
precise_search	No	String	Parameter name (name or req_uri) for exact matching.

Request Parameters

Table 4-167 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-168** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of ApiInfoPerPage objects	API list.

Table 4-169 ApiInfoPerPage

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. 1: public 2: private
version	String	API version. Maximum: 16

Parameter	Type	Description
req_protocol	String	API request protocol. • HTTP • HTTPS • BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend

Parameter	Type	Description
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65

Parameter	Type	Description
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
status	Integer	API status. 1: valid
arrange_necessary	Integer	Indicates whether orchestration is required.
register_time	String	Time when the API was registered.
update_time	String	Time when the API was last modified.
group_name	String	API group name.
group_version	String	Version of the API group to which the API belongs.
run_env_name	String	Name of the environment in which the API was published
run_env_id	String	ID of the environment in which the API was published.
publish_id	String	Publication record ID. You can separate multiple publication records with vertical bars ().
roma_app_name	String	Name of the integration application to which the API belongs.
ld_api_id	String	ID of the custom backend API when the API backend is a custom backend.

Parameter	Type	Description
req_params	Array of ReqParam objects	Request parameters.

Table 4-170 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-171 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. 1: enabled 2: disabled

Parameter	Type	Description
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Status code: 400**Table 4-172** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-173 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-174** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-175** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-176** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 3,
```

```
"size" : 3,
"apis" : [ {
  "arrange_necessary" : 2,
  "id" : "5f918d104dc84480a75166ba99efff21",
  "tags" : [ "webApi" ],
  "backend_type" : "HTTP",
  "auth_type" : "AUTHORIZER",
  "auth_opt" : {
    "app_code_auth_type" : "DISABLE"
  },
  "authorizer_id" : "8d0443832a194eaa84244e0c1c1912ac",
  "cors" : false,
  "status" : 1,
  "group_name" : "api_group_001",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_version" : "V1",
  "match_mode" : "NORMAL",
  "name" : "Api_http",
  "req_protocol" : "HTTPS",
  "req_method" : "GET",
  "req_uri" : "/test/http",
  "type" : 1,
  "version" : "V0.0.1",
  "register_time" : "2020-07-31T12:42:51Z",
  "update_time" : "2020-08-02T16:32:47.046289Z",
  "remark" : "Web backend API"
}, {
  "id" : "3a955b791bd24b1c9cd94c745f8d1aad",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "group_version" : "V1",
  "match_mode" : "SWA",
  "name" : "Api_mock",
  "auth_type" : "IAM",
  "auth_opt" : {
    "auth_code_auth_type" : "DISABLE"
  },
  "backend_type" : "MOCK",
  "cors" : false,
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/mock",
  "remark" : "Mock backend API",
  "type" : 1,
  "version" : "V0.0.1",
  "req_method" : "GET",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "tags" : [ "mockApi" ],
  "register_time" : "2020-08-02T15:56:52Z",
  "update_time" : "2020-08-02T15:56:52Z",
  "status" : 1
}, {
  "id" : "abd9c4b2ff974888b0ba79be7e6b2763",
  "arrange_necessary" : 2,
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "group_version" : "V1",
  "match_mode" : "NORMAL",
  "name" : "Api_function",
  "auth_type" : "APP",
  "auth_opt" : {
    "auth_code_auth_type" : "DISABLE"
  },
  "backend_type" : "FUNCTION",
  "cors" : false,
  "req_protocol" : "HTTPS",
  "req_uri" : "/test/function",
  "remark" : "FunctionGraph backend API",
  "type" : 1,
```



```
{
  "version" : "V0.0.1",
  "status" : 1,
  "req_method" : "GET",
  "tags" : [ "functionApi" ],
  "register_time" : "2020-08-02T15:36:19Z",
  "update_time" : "2020-08-02T15:47:53.499266Z"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.7 Publishing APIs or Taking APIs Offline in Batches

Function

This API is used to publish multiple APIs in an environment or to remove multiple APIs from the environment in which they have been published.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apis/publish

Table 4-177 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-178 Query parameters

Parameter	Mandatory	Type	Description
action	Yes	String	- online: publishing the APIs - offline: taking the APIs offline

Request Parameters

Table 4-179 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-180 Request body parameters

Parameter	Mandatory	Type	Description
apis	No	Array of strings	IDs of the APIs to be published or taken offline.
env_id	Yes	String	Environment ID.
remark	No	String	Description of the publication. Ensure that the length does not exceed 255 characters.

Response Parameters

Status code: 200

Table 4-181 Response body parameters

Parameter	Type	Description
success	Array of PublishResp objects	Message for successful API publication or taking offline.
failure	Array of BatchFailure objects	Error message and APIs that fail to be published or taken offline.

Table 4-182 PublishResp

Parameter	Type	Description
publish_id	String	Publication record ID.
api_id	String	API ID.
api_name	String	API name.

Parameter	Type	Description
env_id	String	ID of the environment in which the API has been published.
remark	String	Description about the publication.
publish_time	String	Time when the API is published.
version_id	String	API version currently in use.

Table 4-183 BatchFailure

Parameter	Type	Description
api_id	String	ID of an API that fails to be deleted.
api_name	String	Name of the API that fails to be operated.
error_code	String	Error code.
error_msg	String	Error information generated after an operation fails.

Status code: 400**Table 4-184** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-185** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-186 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-187** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-188** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "apis" : [ "3a955b791bd24b1c9cd94c745f8d1aad", "abd9c4b2ff974888b0ba79be7e6b2762" ],
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "remark" : "Publish to the production environment"
}
```

Example Responses**Status code: 200**

OK

```
{
  "success" : [ {
    "publish_id" : "9f27d1dc4f4242a9abf88e563dbfc33d",
    "api_id" : "3a955b791bd24b1c9cd94c745f8d1aad",
    "api_name" : "Api_mock",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "version_id" : "632b2c9e022941969af9a1d45735ae2c",
    "remark" : "Publish to the production environment",
    "publish_time" : "2020-08-03T03:01:31.26522821Z"
  } ],
  "failure" : [ {
    "api_id" : "abd9c4b2ff974888b0ba79be7e6b2762",

```

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "Api abd9c4b2ff974888b0ba79be7e6b2762 not found"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value: parameter action should be \\\\\"online\\\\\\" or \\\\\"offline\\\\\\"""
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.8 Debugging an API

Function

This API is used to debug an API in a specified environment. The API caller must have the permissions required for accessing this API.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apis/debug/{api_id}

Table 4-189 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Request Parameters

Table 4-190 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-191 Request body parameters

Parameter	Mandatory	Type	Description
body	No	String	Message body, with a maximum length of 2,097,152 bytes.
header	No	Map<String,Array<String>>	Header parameters, with each value being a character string array. Each parameter name must meet the following requirements: • Contains letters, digits, periods (.), or hyphens (-). • Starts with a letter, with a maximum of 32 bytes. • Case-insensitive and cannot start with X-Apig- or X-Sdk-. • Case-insensitive and cannot be X-Stage. • Case-insensitive and cannot be X-Auth-Token or Authorization when mode is set to MARKET or CONSUMER. NOTE Each header name is normalized before use. For example, x-MY-hEaDer is normalized as X-My-Header.
method	Yes	String	API request method.

Parameter	Mandatory	Type	Description
mode	Yes	String	Debugging mode. • DEVELOPER: Debugging the definition of an API that has not been published. • MARKET: Debugging the definition of an API purchased from the marketplace • CONSUMER: Debugging the definition of an API that has been published in a specified environment NOTE In DEVELOPER mode, the API caller must be the API provider. In MARKET mode, the API caller must be the API purchaser or owner. In CONSUMER mode, the API caller must be the API provider or has been authorized to access the API in a specific environment.
path	Yes	String	Request path of the API, starting with a slash (/) and containing up to 1024 characters. NOTE The request path must meet path requirements so that it can be correctly decoded after percent-encoding.

Parameter	Mandatory	Type	Description
query	No	Map<String,Array<String>>	Query strings, with each value being a character string array. Each parameter name must meet the following requirements: • Contains letters, digits, periods (.), hyphens (-), or underscores (_). • Starts with a letter, with a maximum of 32 bytes. - • Case-insensitive and cannot start with X-Apig- or X-Sdk-. • Case-insensitive and cannot be X-Stage.
scheme	Yes	String	API request protocol. • HTTP • HTTPS
app_key	No	String	AppKey used in the debugging request.
app_secret	No	String	AppSecret used in the debugging request.
domain	No	String	Access domain name of the API. If no value is specified, one of the following default values will be used based on the setting of mode: • For DEVELOPER, the subdomain name of the API group will be used. • For MARKET the domain name of the API group allocated by the marketplace will be used. • For CONSUMER, the subdomain name of the API group will be used.

Parameter	Mandatory	Type	Description
stage	No	String	Running environment specified by the debugging request. This parameter is available only if mode is set to CONSUMER. If this parameter is not specified, the following default value is used: CONSUMER RELEASE

Response Parameters

Status code: 200

Table 4-192 Response body parameters

Parameter	Type	Description
request	String	Body of the debugging request.
response	String	Body of the debugging response, with a maximum of 2,097,152 bytes. Any content beyond this threshold will be truncated. Any content beyond the length limit will be truncated, and text [TRUNCATED] will be added to the response body.
latency	String	Debugging duration in milliseconds.
log	String	Debugging logs.

Status code: 400

Table 4-193 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-194 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-195** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-196** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-197** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "mode" : "DEVELOPER",  
  "scheme" : "HTTPS",  
  "method" : "GET",  
  "path" : "/test/mock"  
}
```

Example Responses

Status code: 200

OK

```
{
  "request" : "GET /test/mock HTTP/1.1\r\nHost: c77f5e81d9cb4424bf704ef2b0ac7600.apic.****.com\r\nUser-Agent: APIGatewayDebugClient/1.0\r\nX-Apig-Mode: debug\r\n\r\n",
  "response" : "HTTP/1.1 200 OK\r\nTransfer-Encoding: chunked\r\nConnection: keep-alive\r\nContent-Type: application/json\r\nDate: Mon, 03 Aug 2020 02:51:22 GMT\r\nServer: api-gateway\r\nX-Apig-Latency: 0\r\nX-Apig-Ratelimit-Api: remain:99,limit:100,time:1 minute\r\nX-Apig-Ratelimit-Api-Allenv: remain:14999,limit:15000,time:1 second\r\nX-Request-Id: d4ec6e33148bdeffe8f55b43472d1251\r\n\r\n\r\nmock success",
  "latency" : 5,
  "log" : ""
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:mode. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 3a955b791bd24b1c9cd94c745f8d1aad does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.9 Switching API Versions

Function

This API is used to switch the version of an API. A version is generated based on the current definition of an API when the API is published. The version records the definition and status of the API when it is published.

You can switch between multiple versions of an API, but only one version of an API takes effect in the same environment.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/apis/publish/{api_id}

Table 4-198 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Request Parameters

Table 4-199 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-200 Request body parameters

Parameter	Mandatory	Type	Description
version_id	Yes	String	API version ID.

Response Parameters

Status code: 200

Table 4-201 Response body parameters

Parameter	Type	Description
publish_id	String	Publication record ID.
api_id	String	API ID.
api_name	String	API name.
env_id	String	ID of the environment in which the API has been published.
remark	String	Description about the publication.
publish_time	String	Time when the API is published.
version_id	String	API version currently in use.

Status code: 400

Table 4-202 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-203** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-204** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-205** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-206** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "version_id" : "ee1a5a38d3d3493abf1dc4ed6cacfa0b"  
}
```

Example Responses**Status code: 200**

OK

```
{
  "publish_id" : "9191cdb430724d4b8586ed7f1b962ca2",
  "api_id" : "5f918d104dc84480a75166ba99efff21",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "version_id" : "ee1a5a38d3d3493abf1dc4ed6cacfa0b",
  "publish_time" : "2020-08-03T03:27:49.483295655Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2000",
  "error_msg" : "Parameter error: Serialization error: unexpected end of JSON input"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3022",
  "error_msg" : "The API version does not exist,id:ee1a5a38d3d3493abf1dc4ed6cacfa0b"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.10 Querying Details of an API Version

Function

This API is used to query the details of a specified API version.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apis/versions/{version_id}

Table 4-207 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
version_id	Yes	String	API version number.

Request Parameters

Table 4-208 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-209 Response body parameters

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. • 1: public • 2: private
version	String	API version. Maximum: 16
req_protocol	String	API request protocol. • HTTP • HTTPS • BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.

Parameter	Type	Description
auth_type	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480

Parameter	Type	Description
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
status	Integer	API status. 1: valid
arrange_necessary	Integer	Indicates whether orchestration is required.

Parameter	Type	Description
register_time	String	Time when the API was registered.
update_time	String	Time when the API was last modified.
group_name	String	API group name.
group_version	String	Version of the API group to which the API belongs.
run_env_name	String	Name of the environment in which the API was published
run_env_id	String	ID of the environment in which the API was published.
publish_id	String	Publication record ID. You can separate multiple publication records with vertical bars ().
roma_app_name	String	Name of the integration application to which the API belongs.
ld_api_id	String	ID of the custom backend API when the API backend is a custom backend.
func_info	ApiFunc object	FunctionGraph backend details.
mock_info	ApiMock object	Mock backend details.
req_params	Array of ReqParam objects	Request parameters.
backend_params	Array of BackendParam objects	Backend parameters
policy_functions	Array of ApiPolicyFunctionResp objects	FunctionGraph policy backends
policy_mock	Array of ApiPolicyMockResp objects	Mock policy backends
backend_api	BackendApi object	Web backend details
policy_https	Array of ApiPolicyHttpResp objects	Web policy backends

Parameter	Type	Description
sl_domain	String	Subdomain name that ROMA Connect automatically allocates to the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.
version_id	String	API version ID.
publish_time	String	Time when the API version is published.

Table 4-210 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. - DISABLE: AppCode authentication is disabled. - HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-211 ApiFunc

Parameter	Type	Description
function_urn	String	Function URN.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
invocation_type	String	Invocation mode. - async: asynchronous - sync: synchronous
version	String	Version. Maximum: 64

Parameter	Type	Description
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-212 ApiMock

Parameter	Type	Description
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
result_content	String	Response.
version	String	Version. Ensure that the version does not exceed 64 characters.
authorizer_id	String	Backend custom authorizer ID.
id	String	ID.
register_time	String	Registration time.
status	Integer	Backend status. • 1: valid
update_time	String	Update time.

Table 4-213 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.

Parameter	Type	Description
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Table 4-214 ApiPolicyFunctionResp

Parameter	Type	Description
function_urn	String	Function URN.
invocation_type	String	Invocation mode. • async: asynchronous • sync: synchronous
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
version	String	Version. Ensure that the version does not exceed 64 characters.
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65

Table 4-215 ApiPolicyMockResp

Parameter	Type	Description
id	String	ID.
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
result_content	String	Response.

Table 4-216 BackendApi

Parameter	Type	Description
authorizer_id	String	Backend custom authorizer ID.

Parameter	Type	Description
url_domain	String	Address of the backend service. The value consists of the host (IP address or domain name) and port number. The total length cannot exceed 255 characters. The format is Host name:Port number (for example, apig.example.com:7443). If the port number is not specified, the default HTTPS port number is 443, and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, underscores (_), and hyphens (-), and must start with an English letter.
req_protocol	String	Request protocol.
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
req_method	String	Request method.
version	String	Web backend version, which can contain a maximum of 16 characters.
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1

Parameter	Type	Description
enable_client_ssl	Boolean	Whether to enable two-way authentication.
id	String	ID.
status	Integer	Backend status. 1: valid
register_time	String	Registration time.
update_time	String	Update time.
vpc_channel_info	VpclInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-217 VpclInfo

Parameter	Type	Description
ecs_id	String	Cloud server ID.
ecs_name	Integer	Cloud server name.
cascade_flag	Boolean	Indicates whether to use the cascading mode. This parameter is currently not supported.
vpc_channel_proxy_host	String	Proxy host.
vpc_channel_id	String	VPC channel ID. Maximum: 64
vpc_channel_port	String	VPC channel port.

Table 4-218 ApiPolicyHttpResp

Parameter	Type	Description
id	String	ID.

Parameter	Type	Description
name	String	Backend name, which must start with a letter and can contain letters, digits, and underscores (_). Minimum: 3 Maximum: 64
conditions	Array of ConditionResp objects	Policy conditions
backend_params	Array of BackendParam objects	Backend parameters
effect_mode	String	Effective mode of the backend policy. • ALL: All conditions are met. • ANY: Any condition is met.
authorizer_id	String	Backend custom authorizer ID. Minimum: 1 Maximum: 65
url_domain	String	Endpoint of the policy backend. The value consists of a domain name (or an IP address) and a port number. The total length cannot exceed 255 characters. The value is in Domain name:Port number format, for example, apig.example.com:7443. If the port number is not specified, the default HTTPS port number is 443 and the default HTTP port number is 80. Environment variables are supported. If environment variables are used, each variable name must contain 3 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter.
req_protocol	String	Request protocol. The value can be HTTP or HTTPS.
req_method	String	Request method

Parameter	Type	Description
req_uri	String	Request URI. The value can contain request parameters identified by braces ({}), for example, /getUserInfo/{userId}. Special characters such as * % - _ . are supported. The total length cannot exceed 512 characters and must meet the URI specifications. Environment variables are supported. If environment variables are used, each variable name is a string of 3 to 32 characters. The string consists of letters, digits, hyphens (-), and underscores (_) and must start with an English letter. The value must comply with the URI specifications.
timeout	Integer	Timeout interval allowed for ROMA Connect APIC to request the backend service. The unit is millisecond. The default value will be used if the specified value is outside the allowable range. Minimum: 1
enable_client_ssl	Boolean	Whether to enable two-way authentication.
vpc_channel_info	VpcInfo object	VPC channel details. This parameter is required if vpc_channel_status is set to 1.
vpc_channel_status	Integer	Indicates whether to use a VPC channel. 1: A VPC channel is used. 2: No VPC channel is used.

Table 4-219 ConditionResp

Parameter	Type	Description
req_param_name	String	Input parameter name. This parameter is required if the policy type is param.
condition_type	String	Policy condition. - exact: exact match - enum: enumeration - pattern: regular expression This parameter is required if the policy type is param.

Parameter	Type	Description
condition_origin	String	Policy type. - param: input parameter - source: source IP address
condition_value	String	Policy value.
id	String	ID.
req_param_id	String	Input parameter ID.
req_param_location	String	Input parameter location.

Table 4-220 BackendParam

Parameter	Type	Description
name	String	Parameter name, which must start with a letter and can only contain letters, digits, hyphens (-), underscores (_), and periods (.). Minimum: 1 Maximum: 32
location	String	Parameter location. The value can be PATH, QUERY, or HEADER.
origin	String	Parameter type. The value can be REQUEST, CONSTANT, and SYSTEM.
value	String	Parameter value, which can contain a maximum of 255 characters. If the parameter type is REQUEST, the value is a parameter name in req_params. If the parameter type is CONSTANT, the value is a constant. If the parameter type is SYSTEM, the value is a gateway parameter name. Maximum: 255
remark	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255
id	String	Parameter ID.
req_param_id	String	ID of the request parameter to which the backend parameter is mapped.

Status code: 401**Table 4-221** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-222** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-223** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-224** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "name": "Api_http",
  "type": 1,
  "version": "V0.0.1",
  "req_protocol": "HTTPS",
  "req_method": "GET",
  "req_uri": "/test/http",
  "auth_type": "AUTHORIZER",
  "auth_opt": [ {
    "app_code_auth_type": "DISABLE"
  } ],
  "authorizer_id": "8d0443832a194eaa84244e0c1c1912ac",
  "cors": false,
  "match_mode": "NORMAL",
  "backend_type": "HTTP",
  "group_id": "c77f5e81d9cb4424bf704ef2b0ac7600",
  "result_normal_sample": "Normal response example",
  "result_failure_sample": "Failure response example",
  "id": "5f918d104dc84480a75166ba99efff21",
  "status": 1,
  "arrange_necessary": 2,
  "remark": "Web backend Api",
  "register_time": "2020-07-31T12:42:51Z",
  "update_time": "2020-08-02T16:32:47.046289Z",
  "group_name": "api_group_001",
  "run_env_name": "RELEASE",
  "run_env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "sl_domain": "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
  "sl_domains": [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ],
  "version_id": "ee1a5a38d3d3493abf1dc4ed6cacfa0b",
  "publish_time": "2020-08-03T01:36:00Z",
  "backend_api": {
    "url_domain": "56a7d7358e1b42459c9d730d65b14e59",
    "req_protocol": "HTTPS",
    "req_method": "GET",
    "req_uri": "/test/benchmark",
    "timeout": 5000,
    "id": "1ce8fda3586d4371bd83c955df37e102",
    "status": 1,
    "register_time": "2020-07-31T12:42:51Z",
    "update_time": "2020-08-02T16:32:47.077029Z",
    "vpc_channel_status": 1,
    "vpc_channel_info": {
      "cascade_flag": false,
      "vpc_channel_id": "56a7d7358e1b42459c9d730d65b14e59",
      "vpc_channel_proxy_host": "www.example.com",
      "vpc_channel_port": 0
    }
  },
  "backend_params": [ {
    "name": "X-CONSTANT-HEADER",
    "location": "HEADER",
    "origin": "CONSTANT",
    "value": "demo",
    "remark": "constant_demo",
    "id": "8cb2eba19e7a4423a4e835647a8b8d76"
  }, {
    "name": "app-id",
    "location": "HEADER",
    "origin": "SYSTEM",
    "value": "$context.appld",
    "remark": "Application ID of the invoker.",
    "id": "216ddda836e74d528f364ff589d9dd21"
  } ]
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3022",
  "error_msg" : "The API version does not exist,id:ee1a5a38d3d3493abf1dc4ed6cacfa0b"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.11 Taking an API Version Offline

Function

This API is used to remove an effective version of an API. After this operation, the API cannot be called in the environment in which it takes effect.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/apis/versions/{version_id}

Table 4-225 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
version_id	Yes	String	API version number.

Request Parameters

Table 4-226 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-227 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-228 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404**Table 4-229** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-230** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3022",
}
```

```
{
  "error_msg" : "The API version does not exist,id:ee1a5a38d3d3493abf1dc4ed6cacfa0b"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.12 Querying Historical Versions of an API

Function

This API is used to query the historical versions of an API. APIC retains a maximum of 10 historical versions for each API in an environment.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apis/publish/{api_id}

Table 4-231 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Table 4-232 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
env_id	No	String	Environment ID.
env_name	No	String	Environment name.

Request Parameters

Table 4-233 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-234 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
api_versions	Array of ApiVersionResp objects	Historical version list.

Table 4-235 ApiVersionResp

Parameter	Type	Description
version_id	String	API version ID.
version_no	String	API version number.
api_id	String	API ID.
env_id	String	ID of the environment in which the API has been published.
env_name	String	Name of the environment in which the API has been published.
remark	String	Description about the publication.
publish_time	String	Time when the API is published.
status	Integer	Version status. • 1: effective • 2: not effective

Status code: 400**Table 4-236** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-237** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-238 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-239** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-240** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "size": 1,
  "api_versions": [ {
    "version_id": "ee1a5a38d3d3493abf1dc4ed6cacfa0b",
    "version_no": "20200803093600",
    "api_id": "5f918d104dc84480a75166ba99efff21",
    "env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name": "RELEASE",
    "publish_time": "2020-08-03T01:36:00Z",
    "status": 1
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:env_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.3.13 Querying the Runtime Definition of an API

Function

This API is used to query the runtime definition of an API in a specified environment. The runtime definition of an API in the RELEASE environment is queried if no environment is specified.

The definition of an API is classified into the following types:

- Temporary definition: definition of an API used after the API was last edited.
- Runtime definition: snapshot of the temporary definition of an API captured when the API is published in an environment.

The runtime definition of an API is accessed when the API is called in an environment.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apis/runtime/{api_id}

Table 4-241 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
api_id	Yes	String	API ID.

Table 4-242 Query parameters

Parameter	Mandatory	Type	Description
env_id	No	String	ID of the environment in which the API was published.

Request Parameters

Table 4-243 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-244 Response body parameters

Parameter	Type	Description
name	String	API name. The value can contain 3 to 255 characters, including letters, digits, hyphens (-), underscores (_), periods (.), slashes (/), parentheses, and colons (:). The value must start with a letter or digit. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 3 Maximum: 255
type	Integer	API type. 1: public 2: private
version	String	API version. Maximum: 16
req_protocol	String	API request protocol. - HTTP - HTTPS - BOTH: Both HTTP and HTTPS are supported. Default: HTTPS
req_method	String	API request method.

Parameter	Type	Description
req_uri	String	Request address, which can contain request parameters enclosed with brackets ({}). For example, /getUserInfo/{userId}. The request address can contain special characters, such as asterisks (*), percent signs (%), hyphens (-), and underscores (_). It can contain a maximum of 512 characters and must comply with URI specifications. The request address must comply with URI specifications.
auth_type	String	Security authentication mode. • NONE • APP • IAM • AUTHORIZER
auth_opt	AuthOpt object	Security authentication parameter.
cors	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
match_mode	String	Route matching mode. • SWA: prefix match • NORMAL: exact match The default value is NORMAL.
backend_type	String	Backend type. • HTTP: web backend • FUNCTION: FunctionGraph backend • MOCK: Mock backend
remark	String	Description of the API, which cannot contain < and >. NOTE Characters must be encoded using UTF-8 or Unicode. Minimum: 0 Maximum: 1000
group_id	String	ID of the API group to which the API belongs. Minimum: 1 Maximum: 65

Parameter	Type	Description
body_remark	String	API request body, which can be an example request body, media type, or parameters. Ensure that the response does not exceed 20,480 characters. Maximum: 20480
result_normal_sample	String	Example response for a successful request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
result_failure_sample	String	Example response for a failed request. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 20480
authorizer_id	String	ID of the frontend custom authorizer. Minimum: 1 Maximum: 65
tags	Array of strings	Tags. The value can contain only letters, digits, and underscores (_), and must start with a letter. You can enter multiple tags and separate them with commas (,). Minimum: 1 Maximum: 128
response_id	String	Group response ID. This parameter is currently not supported. Minimum: 1 Maximum: 65
roma_app_id	String	ID of the integration application to which an API belongs. This parameter is mandatory when the API group is a global group or when an API is bound to a user-defined domain name. Minimum: 1 Maximum: 65
domain_name	String	User-defined domain name bound to the API. If a user-defined domain name is used, the roma_app_id field is mandatory. Maximum: 255

Parameter	Type	Description
tag	String	Tag. This field will be deprecated. You can use the tags field instead. Maximum: 255
id	String	API ID.
group_name	String	API group name.
run_env_name	String	Name of the environment in which the API has been published.
run_env_id	String	ID of the environment in which the API has been published.
publish_id	String	Publication record ID.
sl_domain	String	Subdomain name of the API group.
sl_domains	Array of strings	List of subdomain names that ROMA Connect automatically allocates to the API group.
req_params	Array of ReqParam objects	Request parameter list.

Table 4-245 AuthOpt

Parameter	Type	Description
app_code_auth_type	String	Indicates whether AppCode authentication is enabled. This parameter is valid only if auth_type is set to App. The default value is DISABLE. • DISABLE: AppCode authentication is disabled. • HEADER: AppCode authentication is enabled and the AppCode is located in the header. Default: DISABLE

Table 4-246 ReqParam

Parameter	Type	Description
name	String	Parameter name. The value can contain letters, digits, hyphens (-), underscores (_), and periods (.) and must start with a letter. Minimum: 1 Maximum: 32
type	String	Parameter type.
location	String	Parameter location.
default_value	String	Default value.
sample_value	String	Example value.
required	Integer	Indicates whether the parameter is mandatory. 1: The parameter is mandatory. 2: The parameter is optional. The value of this parameter is 1 if Location is set to PATH, and 2 if Location is set to another value.
valid_enable	Integer	Indicates whether validity check is enabled. • 1: enabled • 2: disabled
remark	String	Description. NOTE Characters must be in UTF-8 or Unicode format. Maximum: 255
enumerations	String	Enumerated value.
min_num	Integer	Minimum value. This parameter is valid when type is set to NUMBER.
max_num	Integer	Maximum value. This parameter is valid when type is set to NUMBER.
min_size	Integer	Minimum length. This parameter is valid when type is set to STRING.
max_size	Integer	Maximum length. This parameter is valid when type is set to STRING.
regular	String	Regular expression validation rule. This parameter is currently not supported.

Parameter	Type	Description
json_schema	String	JSON validation rule. This parameter is currently not supported.
pass_through	Integer	Indicates whether to transparently transmit the parameter. 1: The parameter is transparently transmitted. 2: The parameter is not transparently transmitted.
id	String	Parameter ID.

Status code: 401**Table 4-247** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-248** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-249** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-250 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "name" : "Api_http",
  "type" : 1,
  "version" : "V0.0.1",
  "req_protocol" : "HTTPS",
  "req_method" : "GET",
  "req_uri" : "/test/http",
  "auth_type" : "AUTHORIZER",
  "authorizer_id" : "8d0443832a194eaa84244e0c1c1912ac",
  "auth_opt" : {
    "app_code_auth_type" : "DISABLE"
  },
  "cors" : false,
  "match_mode" : "NORMAL",
  "backend_type" : "HTTP",
  "remark" : "Web backend Api",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "result_normal_sample" : "Normal response example",
  "result_failure_sample" : "Failure response example",
  "id" : "5f918d104dc84480a75166ba99efff21",
  "group_name" : "api_group_001",
  "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "run_env_name" : "RELEASE",
  "publish_id" : "9191cdb430724d4b8586ed7f1b962ca2",
  "sl_domain" : "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
  "sl_domains" : [ "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.com",
    "c77f5e81d9cb4424bf704ef2b0ac7600.apic.***.cn" ]
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.3.14 Verifying the API Definition****Function**

This API is used to verify the API definition, that is, whether the API path or name already exists.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apis/check

Table 4-251 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-252 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-253 Request body parameters

Parameter	Mandatory	Type	Description
name	No	String	API name. This parameter is mandatory when type is set to name.
req_method	No	String	Request method. This parameter is mandatory when type is set to path.
req_uri	No	String	Access address of the API. This parameter is mandatory when type is set to path.
match_mode	No	String	API matching mode. - SWA: prefix match - NORMAL: exact match This parameter is mandatory when type is set to path.
group_id	No	String	API group ID. This parameter is mandatory when the API definition in the group is duplicate.

Parameter	Mandatory	Type	Description
roma_app_id	No	String	Integration application ID. This parameter is mandatory when the API definition in the application is duplicate.
api_id	No	String	ID of the API to be compared.
type	No	String	Verification type. • path: path type • name: name type

Response Parameters

Status code: 400

Table 4-254 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-255 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-256 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-257 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-258** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "type" : "name",
  "name" : "api_demo"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3202",
  "error_msg" : "The API name already exists, api_name:api_demo"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
}
```

```
{
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.4 Environment Management

4.4.1 Creating an Environment

Function

In actual production, an API provider may have multiple environments, such as the development, test, and production environments. Users can publish APIs to an environment for callers to invoke.

The API version, request address, and even request message may vary depending on the environment. For example, the v1.0 version of an API is a stable version and is published to the production environment. At the same time, the API is in iteration. The v1.1 version is the version delivered to the test personnel for testing and is published to the test environment. Concurrently, the development team is developing the v1.2 version, which can be published to the development environment for self-test.

To address such needs, ROMA Connect APIC provides the multi-environment management function to allow tenants to maximize the simulation of actual scenarios and access ROMA Connect APIC with low costs.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/envs

Table 4-259 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-260 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-261 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Environment name, which can contain only letters, digits, and underscores (_), and must start with a letter. Minimum: 3 Maximum: 64
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255

Response Parameters

Status code: 201

Table 4-262 Response body parameters

Parameter	Type	Description
create_time	String	Creation time.
name	String	Environment name.
remark	String	Description.
id	String	Environment ID.

Status code: 400**Table 4-263** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-264** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-265** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-266 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-267** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "DEV",
  "remark" : "Development environment"
}
```

Example Responses

Status code: 201

Created

```
{
  "create_time" : "2020-07-31T06:41:43.511347628Z",
  "name" : "DEV",
  "remark" : "Development environment",
  "env_id" : "7a1ad0c350844ee69479b47df9a881cb"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.4.2 Modifying an Environment

Function

This API is used to modify the information about an environment. Only the name and remark attributes of an environment can be modified.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/envs/{env_id}

Table 4-268 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
env_id	Yes	String	Environment ID.

Request Parameters

Table 4-269 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-270 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Environment name, which can contain only letters, digits, and underscores (_), and must start with a letter. Minimum: 3 Maximum: 64
remark	No	String	Description. NOTE Characters must be encoded using UTF-8 or Unicode. Maximum: 255

Response Parameters

Status code: 200

Table 4-271 Response body parameters

Parameter	Type	Description
create_time	String	Creation time.
name	String	Environment name.
remark	String	Description.
id	String	Environment ID.

Status code: 400**Table 4-272** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-273** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-274** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-275 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "DEV",
  "remark" : "Development environment"
}
```

Example Responses

Status code: 200

OK

```
{
  "create_time" : "2020-07-31T06:41:43Z",
  "name" : "DEV",
  "remark" : "Development environment",
  "id" : "7a1ad0c350844ee69479b47df9a881cb"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3003",
  "error_msg" : "Environment 7a1ad0c350844ee69479b47df9a881cb does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.4.3 Deleting an Environment

Function

This API is used to delete an environment.

This operation will cause the APIs published in the environment to become inaccessible to relevant apps and users. Ensure that you have notified users of the deletion or confirm that the APIs can be removed from the deleted environment. An environment that contains published APIs cannot be deleted.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/envs/{env_id}

Table 4-276 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Parameter	Mandatory	Type	Description
env_id	Yes	String	Environment ID.

Request Parameters

Table 4-277 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-278 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-279 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-280 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3003",
  "error_msg" : "Environment 7a1ad0c350844ee69479b47df9a881cb does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.4.4 Querying Environments

Function

This API is used to query environments.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/envs

Table 4-281 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-282 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
name	No	String	Environment name.

Request Parameters

Table 4-283 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-284** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
envs	Array of EnvInfo objects	Environment list.

Table 4-285 EnvInfo

Parameter	Type	Description
create_time	String	Creation time.
name	String	Environment name.
remark	String	Description.
id	String	Environment ID.

Status code: 400**Table 4-286** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-287** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-288** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-289** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-290** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "envs" : [ {
    "create_time" : "2019-02-12T19:42:19.914989Z",
    "name" : "RELEASE",
    "remark" : "xxx",
    "id" : "DEFAULT_ENVIRONMENT_RELEASE_ID"
  }, {
    "create_time" : "2020-07-31T06:41:43Z",
    "name" : "DEV",
    "remark" : "Development environment",
    "id" : "7a1ad0c350844ee69479b47df9a881cb"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.5 Environment Variable Management

4.5.1 Creating an Environment Variable

Function

After an API is published in different environments, the environment variables, such as the API service deployment address and request version number, may vary depending on the environment.

Users can define different environment variables when defining APIs. When an API is called, ROMA Connect APIC replaces the variables with actual values to distinguish different environments.

Environment variables are defined in an API group and can be used by all APIs in the group.

1. The name of an environment variable must be unique. That is, an API group cannot have two variables with the same name in the same environment.
2. Environment variables are case sensitive. That is, variables ABC and abc are different.
3. After an environment variable is set, the debugging function of the API that uses the variable cannot be used.
4. After the environment variables are defined, the places where the environment variables are used must be symmetric.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/env-variables

Table 4-291 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-292 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-293 Request body parameters

Parameter	Mandatory	Type	Description
variable_value	Yes	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).
env_id	No	String	Environment ID. Minimum: 1 Maximum: 65
group_id	No	String	API group ID. Minimum: 1 Maximum: 65

Parameter	Mandatory	Type	Description
variable_name	No	String	Variable name. The value is a string of 3 to 32 characters, which can contain letters, digits, underscores (_), and hyphens (-) and must start with a letter. In the API definition, the number sign (#) (case-sensitive) in the value of #Name is replaced with the variable value when the API is published in the environment.

Response Parameters

Status code: 201

Table 4-294 Response body parameters

Parameter	Type	Description
variable_value	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).
env_id	String	Environment ID. Minimum: 1 Maximum: 65
group_id	String	API group ID. Minimum: 1 Maximum: 65
variable_name	String	Variable name. The value is a string of 3 to 32 characters, which can contain letters, digits, underscores (_), and hyphens (-) and must start with a letter. In the API definition, the number sign (#) (case-sensitive) in the value of #Name is replaced with the variable value when the API is published in the environment.
id	String	Environment variable ID.

Status code: 400

Table 4-295 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-296** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-297** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-298** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "variable_name": "address",
  "variable_value": "192.168.1.5",
  "env_id": "7a1ad0c350844ee69479b47df9a881cb",
  "group_id": "c77f5e81d9cb4424bf704ef2b0ac7600"
}
```

Example Responses

Status code: 201

Created

```
{
  "variable_value" : "192.168.1.5",
  "env_id" : "7a1ad0c350844ee69479b47df9a881cb",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "id" : "25054838a624400bbf2267cf5b3a3f70",
  "variable_name" : "address"
}
```

Status code: 400**Bad Request**

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:variable_name"
}
```

Status code: 401**Unauthorized**

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403**Forbidden**

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404**Not Found**

```
{
  "error_code" : "APIG.3003",
  "error_msg" : "Environment 7a1ad0c350844ee69479b47df9a881cb does not exist"
}
```

Status code: 500**Internal Server Error**

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.5.2 Deleting an Environment Variable

Function

This API is used to delete an environment variable.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/env-variables/
{env_variable_id}

Table 4-299 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
env_variable_id	Yes	String	Environment variable ID.

Request Parameters

Table 4-300 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-301 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-302 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-303 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
}
```

```
{
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3011",
  "error_msg" : "The environment variable does not exist, id: 25054838a624400bbf2267cf5b3a3f70"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.5.3 Querying Details of an Environment Variable

Function

This API is used to query the details of an environment variable.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/env-variables/{env_variable_id}

Table 4-304 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
env_variable_id	Yes	String	Environment variable ID.

Request Parameters

Table 4-305 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-306 Response body parameters

Parameter	Type	Description
variable_value	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).
env_id	String	Environment ID. Minimum: 1 Maximum: 65
group_id	String	API group ID. Minimum: 1 Maximum: 65

Parameter	Type	Description
variable_name	String	Variable name. The value is a string of 3 to 32 characters, which can contain letters, digits, underscores (_), and hyphens (-) and must start with a letter. In the API definition, the number sign (#) (case-sensitive) in the value of #Name is replaced with the variable value when the API is published in the environment.
id	String	Environment variable ID.

Status code: 401**Table 4-307** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-308** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-309** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "variable_value" : "192.168.1.5",
  "env_id" : "7a1ad0c350844ee69479b47df9a881cb",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "id" : "25054838a624400bbf2267cf5b3a3f70",
  "variable_name" : "address"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3011",
  "error_msg" : "The environment variable does not exist, id: 25054838a624400bbf2267cf5b3a3f70"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.5.4 Querying Environment Variables

Function

This API is used to query all environment variables under an API group.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/env-variables

Table 4-310 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-311 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
group_id	Yes	String	API group ID.
env_id	No	String	Environment ID.
variable_name	No	String	Environment variable name.
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-312 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-313** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
variables	Array of EnvVariableInfo objects	List of environment variables.

Table 4-314 EnvVariableInfo

Parameter	Type	Description
variable_value	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).
env_id	String	Environment ID. Minimum: 1 Maximum: 65
group_id	String	API group ID. Minimum: 1 Maximum: 65

Parameter	Type	Description
variable_name	String	Variable name. The value is a string of 3 to 32 characters, which can contain letters, digits, underscores (_), and hyphens (-) and must start with a letter. In the API definition, the number sign (#) (case-sensitive) in the value of #Name is replaced with the variable value when the API is published in the environment.
id	String	Environment variable ID.

Status code: 400**Table 4-315** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-316** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-317** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-318 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-319** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "variables": [ {
    "variable_value": "8080",
    "env_id": "cca3616af3684b329064b2a631cb3eeb",
    "group_id": "73c58022f20d495aa18885d718647f09",
    "id": "09ab8135722440b9bf5d107f2a09d409",
    "variable_name": "port"
  }, {
    "variable_value": "192.168.1.5",
    "env_id": "7a1ad0c350844ee69479b47df9a881cb",
    "group_id": "c77f5e81d9cb4424bf704ef2b0ac7600",
    "id": "25054838a624400bbf2267cf5b3a3f70",
    "variable_name": "address"
  } ],
  "total": 2,
  "size": 2
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2012",
  "error_msg": "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.5.5 Modifying an Environment Variable

Function

This API is used to modify an environment variable. If an environment variable is referenced by the backend service address of an API, modifying the environment variable will publish all APIs that use the variable again.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/env-variables/{env_variable_id}

Table 4-320 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
env_variable_id	Yes	String	Environment variable ID.

Request Parameters

Table 4-321 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-322 Request body parameters

Parameter	Mandatory	Type	Description
variable_value	Yes	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).

Response Parameters

Status code: 200

Table 4-323 Response body parameters

Parameter	Type	Description
variable_value	String	The variable value can contain 1 to 255 characters, including letters, digits, underscores (_), hyphens (-), slashes (/), periods (.), and colons (:).
env_id	String	Environment ID. Minimum: 1 Maximum: 65
group_id	String	API group ID. Minimum: 1 Maximum: 65
variable_name	String	Variable name. The value is a string of 3 to 32 characters, which can contain letters, digits, underscores (_), and hyphens (-) and must start with a letter. In the API definition, the number sign (#) (case-sensitive) in the value of #Name is replaced with the variable value when the API is published in the environment.
id	String	Environment variable ID.

Status code: 400**Table 4-324** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-325** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-326 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-327** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "variable_value" : "192.168.1.5"
}
```

Example Responses

Status code: 200

OK

```
{
  "variable_value" : "192.168.1.5",
  "env_id" : "7a1ad0c350844ee69479b47df9a881cb",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "id" : "25054838a624400bbf2267cf5b3a3f70",
  "variable_name" : "address"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:variable_name"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden


```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3003",
  "error_msg" : "Environment 7a1ad0c350844ee69479b47df9a881cb does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6 Domain Name Management

4.6.1 Binding a Domain Name

Function

A user-defined domain name takes effect only after the CNAME is added to the subdomain name of the API group. For details, see section "Adding a Record Set of the CAME Type" in the Domain Name Service User Guide. An API group can be bound to a maximum of five domain names. After you bind a domain name to an API group, APIs in the group can be called using the domain name.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains

Table 4-328 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.

Request Parameters

Table 4-329 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-330 Request body parameters

Parameter	Mandatory	Type	Description
min_ssl_version	No	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1
url_domain	No	String	Custom domain name, which can contain a maximum of 255 characters and must comply with domain name specifications.

Response Parameters

Status code: 201

Table 4-331 Response body parameters

Parameter	Type	Description
url_domain	String	Custom domain name.
id	String	Domain ID.
status	Integer	CNAME resolution status. • 1: not parsed • 2: parsing • 3: parsing succeeded • 4: parsing failed
min_ssl_version	String	Minimum SSL version supported.

Status code: 400**Table 4-332** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-333** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-334** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-335** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-336** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "url_domain" : "www.company.com"  
}
```

Example Responses

Status code: 201

Created

```
{  
  "url_domain" : "www.company.com",  
  "id" : "c5e0d5ba62a34d26ad5c709ae22c1a17",  
  "status" : 3,  
  "min_ssl_version" : "TLSv1.1"  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.2024",  
  "error_msg" : "Invalid URL domain name"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code" : "APIG.1002",  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6.2 Adding a Certificate to a Domain Name

Function

When you create an API to be accessed through HTTPS, you must add an SSL certificate to the independent domain name that has been bound to the group the API belongs to. This API is used to add a certificate to a specific domain name.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains/{domain_id}/certificate

Table 4-337 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.
domain_id	Yes	String	Domain ID.

Request Parameters

Table 4-338 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-339 Request body parameters

Parameter	Mandatory	Type	Description
cert_content	Yes	String	Certificate content.
name	Yes	String	Certificate name. The value contains 4 to 50 characters, including letters, digits, and underscores (_). The value must start with a letter.
private_key	Yes	String	Private key.

Response Parameters

Status code: 201

Table 4-340 Response body parameters

Parameter	Type	Description
url_domain	String	Custom domain name.
id	String	Domain ID.
status	Integer	CNAME resolution status. • 1: not parsed • 2: parsing • 3: parsing succeeded • 4: parsing failed
min_ssl_version	String	Minimum SSL version supported.
ssl_name	String	Certificate name.
ssl_id	String	Certificate ID.

Status code: 400**Table 4-341** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-342** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-343** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404

Table 4-344 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-345 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```

{
  "name": "cert_demo",
  "private_key": "-----BEGIN CERTIFICATE-----\n
\nMIIeCDDCCAtigAwBAGlRAKUyqTtQbsPhVauuteGD8kMwDQYJKoZlHvcNAQELBQAw\
\nngZSMxHjAcBgNwBAoTFW1rY2VydCBkZXZlbg9wbWVudCBDQTEOMDIGA1UECwwrQ0hJ\
\nTkFcbDAwNDk1MzA1QERFU0tUT1AtTDJURk9GSCAobGl1cnVpeHVlKTE7MDkGA1UE\
\nAwwybWtjZXJ0IENISU5BXGwwMDQ5NTMwNUBERVNLVE9QLUwyVEZPRkggKGxpdxJ1\
\nXh1ZSkwHhcNMtkwNjAxMDAwMDAwWhcNMzAwODAwMDc0MTE5WjBfMScwJQYDVQKQ\
\nXEx5ta2NlcngZGVZ2ZWxcvG1lbnQgY2Y2VydGlmaWNhdGUxNDAYBgNVBASMKONISU5B\
\nXGwwMDQ5NTMwNUBERVNLVE9QLUwyVEZPRkggKGxpdxJ1aXh1ZSkgwGgEiMA0GCSqG\
\nS1b3DQEBAQUAA4IBDwAwggEKAoIABQDDYvPx9H8ZY9iUf5A8hT8s/gTTHEOa3nswW\
\n\\n\\jxxU58+dliwvzdlloc+CaggMz/rjt3bt9jRilKvzkJjryUxLNOe3JsdJogm0OSxc\
\n\\n\\nSJWOhdZd/vScImWajM5t3M/M7xgt1g813PNEVJ/uTAEw6m6K3sAlqGJfjU\
\n/ep6pb\\n\\n4S9i1c3VYLTfGF2ND5kTaysp69/mYhL4lUDWn82n0tpjB4BvoiyD9ORMcvBBGCBh\\n\\nU2x497Uyo0X/MkreoxLxLEO2s4/TZfpZ0Ezsi/\
\nwXjTRQ0ut5t3KbsZD0b7F3HLE\\n\\nPw1Y4q2s4qjN6lmZmkYX+Qvx5MxdHCNsfPsDFTYX2rl+vCpqtDW/\
\nAgMBAAGcjBw\\n\\nMA4GA1UdDwEB/wQEAwIfoDATBgNVHSUEDDAKBggrBgEFBQCcDATAMBgNVHRMBAf8E\
\n\\n\\nAjaAAMB8GA1UdIwQYMBaAFEV9QNgv6FDCbMBo14uT/JL/8ZHjMBoGA1UdEqQTMBCG\
\n\\n\\nD3d3dy5jb21wY55LmNvbTANBgkqhkiG9w0BAQsFAAOCAQEAXkrRU2z0xEGBIe3\
\n\\n\\ncvGtePxErVM0cdU1f17qoQRd8bg0KJwvCvFfJZoCWD41saZnXcfwn+1eAD6txWsV\
\n\\n\\nkqg784DeTltqC5tU6l6kpyYU1lkTm9U7/Qbb8QG8BG8GARAP9VJTLFozjjeZrj/55L\
\n\\n\\nyrSkK84hvo6XSAehqaBUWQN1qr8MY9/P0sZ2H0S9uu3Ezu9r/jx849aYDKen4Zdf\\n\\nxda1iXz\
\n+6UYUQKo5cveGKu+HmlW5V+sVVUfBCbr1FrUgaSbeZDnKdm6xLQZ70los\
\n\\n\\nn4yLrpbDL0r5x41es94PaLSZC9+UANL7fGqKpYlYdUUU3YigUs3ed9Cn1f1Scl6V\
\n\\n\\njGR5tyK0dAb1n5tJwMD2FA0cu56L3h2h71Jxgs4mEvBlqy+h6wV0lboj4UzQrnm+t\
\n\\n\\n1Um4rYopw240iy4orTYQ3dc3A3yKcTzA+LCUOcnWcaZSfLk9EKqCWLjZs51A\\n\\n\
\nuux1UisF8p/iMnYzPoPYIBQnO+oN2GJ72krl2pmMjEkag38\\n\\n-----END CERTIFICATE-----\\n",
  "cert_content": "-----BEGIN PRIVATE KEY-----\n
\nMIIeEvQIBADANBgkqhkiG9w0BAQEFAASCBKcwggSjAgEAAoIABQDDYvPx9H8ZY9iUf\
\n\\n\\n5A8hT8s/gTTHEOa3nswW\\jxxU58+dliwvzdlloc+CaggMz/rjt3bt9jRilKvzkJj\
\nrUxLNOe3JsdJogm0OSxc\\n\\nSJWOhdZd/vScImWajM5t3M/M7xgt1g813PNEVJ/u\
\nTAEw6m6K3sAlqGJfjU/ep6pb4S9i1c3VYLTfGF2ND5kTaysp69/

```



```
mXl4lUDWn82n0Tpi\\nB4BvoiYD9ORMcvBBGCBhnU2x497Uyo0X/MkreoxLxLEO2s4/TZfpZ0Ezsi/yHwjT\
\nRQ0ut53lKbSZDoBf3HLEPw1Y4q2s4qjN6ImZmkYX+Qvx5MxdHCNsfPsDFTYX2rl+\\nvCpqtDW/
AgMBAAECggEBAMJGvOiHp+qsUODCM5G/jcdR0Q2Bcd3b+MKr61BsLdyC\\n+iqripXCh1g2JRse/
pvs6gUpsRFAhNWhooGQAdRUCvRQTUjCd4JV0V6zLWQASgO1\
\nepvN9VdQqeUujhH7q6fCfGxhFSoF1QnuCfOhPnz6zaWNf+4kBzTIA74IG38vvLD6\\nTccgvXNrJEWMM
+AN6uCndEMkPG2VtCor9VDA5iuBN9NsAxTGZu9wgrZzg1W0rVZ\\nC/Psh2U2gwXHBzsiygB3n08R
+7MSwulpsvUone2E4IT+VDURWIIlcVQztT6SxuRt\\npFEy7E/
PfKv1VRvEvyGtZSSLkt0WxqHPENrj3LuW77kCgYEA4X+iRh6jTsmJ1fHl\\n0qhCSFWXjp1B
+cajNs62N2kFcRkOtD5BvWihlDbuLaq/eYfErKET6Z8jnbRyQCJV\\n/ePqRIZ30gjTPPr55X8ZXb
+hCfchHnK5LZah6HwyRL337FzejTxs3J7C1rVmYq/n\\nCjfa3bJQ6zUtxRO
+B2BlCgES9q0CgYEA9g4ByVyydao8ZEC9Qbn9Pzd/LslbBOAG\\nPg7Ib0vwHyRv9oPHTc7dla+YBTfNVuFOt2e/
KKf0meZnM6OiW/r38zgwLMwzHHcs\\nryMNGgwwfSwmDXgrswkXu5lCuoc1+2s3GGNFkjg7lrfcHlEpVAn/
ttJTCmbvTMGo\\nHM+oJPPGp5sCgYAopHx27ua37ZiuOt8VTMZFi0e5qJPkoGwSymEayVT8RQ5YE8w\\n
+D7HG+9pw7CnEtVb19xi6w/cSL2e2ZFujToAB8xoyrZn+Qi5WGMWBofb6DcbNcoy\
\nCufVQy08PpEEExOhHxHBKq0Lst/cwKkwWB2MnOhBjLD4fmyNQ6QrM9syYMQKBgH+8\\nv9Kwq/kH
+rg1H8uKad2yyvUUUGCS6Mq40/drneoc+X8p5IMRXNnDwhEbah+rcjkm\
\nxAewQfzPr04Qqk5EGQsMZx4sOHCTsf/uG3QlTQenrs2ZUF5u3wJCh+Yclbs3au/f\
\nQZPqW1Dn0H9wtRrq4fUgdXnV/G+FreffKjSgNaP3AoGAT8wX6ZszA5HrIGSo4pi7\
\nDnbMNuYe1cpCyAi178YVklom6uGutliafngapViESKZ0Y8X/lyzU6ELclimqJPB\\nXD4nSD64YVvi
+TjzwLK61tEUuAnYlWrtXQORWPQ5tHGlhCZPrciO2QH5P9cxoU3Z\\npGfmyACUF4Od9tdq4t4S9j4=\\n-----
END PRIVATE KEY-----\\n"
```

Example Responses

Status code: 201

Created

```
{
  "ssl_name" : "cert_demo",
  "url_domain" : "www.example.com",
  "ssl_id" : "a27be832f2e9441c8127fe48e3b5ac67",
  "id" : " f6bb84ccf1c34035878aa51b7253b21c",
  "status" : 3
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3020",
  "error_msg" : "The URL domain does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6.3 Modifying a Domain Name

Function

This API is used to modify the configuration of a domain name bound to an API group.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains/{domain_id}

Table 4-346 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.
domain_id	Yes	String	Domain ID.

Request Parameters

Table 4-347 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-348 Request body parameters

Parameter	Mandatory	Type	Description
min_ssl_version	No	String	Minimum SSL version. TLS 1.1 and TLS 1.2 are supported. Default: TLSv1.1

Response Parameters

Status code: 200

Table 4-349 Response body parameters

Parameter	Type	Description
url_domain	String	Custom domain name.
id	String	Domain ID.

Parameter	Type	Description
status	Integer	CNAME resolution status. • 1: not parsed • 2: parsing • 3: parsing succeeded • 4: parsing failed
min_ssl_version	String	Minimum SSL version supported.

Status code: 400**Table 4-350** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-351** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-352** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-353 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-354** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "min_ssl_version" : "TLSv1.2"
}
```

Example Responses

Status code: 200

No Content

```
{
  "id" : "0a515af69f4e4dcca84fbf85f68c0e27",
  "url_domain" : "www.example.com",
  "status" : 3,
  "min_ssl_version" : "TLSv1.2"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3474",
  "error_msg" : "The API group ID in the URL does not match the API group to which the URL domain has been bound"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3020",
  "error_msg" : "The URL domain does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6.4 Unbinding a Domain Name

Function

This API is used to unbind a custom domain name from an API group.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains/{domain_id}

Table 4-355 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.
domain_id	Yes	String	Domain ID.

Request Parameters

Table 4-356 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-357 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-358 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-359** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-360** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-361** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3474",
  "error_msg" : "The API group ID in the URL does not match the API group to which the URL domain has
been bound"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
```



```
{  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "APIG.1005",  
  "error_msg" : "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "APIG.3020",  
  "error_msg" : "The URL domain does not exist"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6.5 Deleting a Certificate Bound to a Domain Name

Function

This API is used to delete a certificate that is no longer needed or has expired.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains/{domain_id}/certificate/{certificate_id}

Table 4-362 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.
domain_id	Yes	String	Domain ID.
certificate_id	Yes	String	Certificate ID.

Request Parameters

Table 4-363 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-364 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-365 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-366** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-367** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-368** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.2012",  
}
```

```
{
  "error_msg": "Invalid parameter value,parameterName:domain_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3020",
  "error_msg": "The URL domain does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
  "error_msg": "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.6.6 Querying Details of the Certificate Bound to a Domain Name

Function

This API is used to query the details of the certificate bound to a domain name.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/api-groups/{group_id}/domains/{domain_id}/certificate/{certificate_id}

Table 4-369 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
group_id	Yes	String	API group ID.
domain_id	Yes	String	Domain ID.
certificate_id	Yes	String	Certificate ID.

Request Parameters

Table 4-370 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-371 Response body parameters

Parameter	Type	Description
common_name	String	Request throttling policy list.
san	Array of strings	SAN domain name.
version	String	Certificate version.
organization	Array of strings	Company and organization.
organizational_unit	Array of strings	Department.
locality	Array of strings	City.
state	Array of strings	Province.
country	Array of strings	Country.
not_before	String	Start time of the certificate validity period.
not_after	String	End time of the certificate validity period.
serial_number	String	Serial number.
issuer	Array of strings	Issuer.
signature_algorithm	String	Signature algorithm.

Status code: 400**Table 4-372** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-373 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-374** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-375** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-376** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "serial_number" : "219450666855693268010130472645821723203",  
}
```

```
"version" : 3,
"san" : [ "www.company.com" ],
"not_before" : "2019-06-01T00:00:00Z",
"issuer" : [ "mkcert development CA" ],
"not_after" : "2030-08-04T07:41:19Z",
"organization" : [ "mkcert development certificate" ],
"signature_algorithm" : "SHA256-RSA",
"organizational_unit" : [ "Country\\\\"DESKTOP-L2TFOFH" ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:domain_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3020",
  "error_msg" : "The URL domain does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.7 Request Throttling Policy Management

4.7.1 Creating a Request Throttling Policy

Function

After an API goes online, the system attaches a request throttling policy to it by default. The API provider can change the request throttling policy based on the service capabilities and load of the API. A request throttling policy restricts the maximum number of times an API can be called within a specified period.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/throttles

Table 4-377 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-378 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-379 Request body parameters

Parameter	Mandatory	Type	Description
app_call_limits	No	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	Yes	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	Yes	String	Time unit for limiting the number of API calls.
remark	No	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.

Parameter	Mandatory	Type	Description
api_call_limits	Yes	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.
type	No	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	No	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	No	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
time_interval	Yes	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Mandatory	Type	Description
ip_call_limits	No	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.

Response Parameters

Status code: 201

Table 4-380 Response body parameters

Parameter	Type	Description
app_call_limits	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	String	Time unit for limiting the number of API calls.
remark	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.
api_call_limits	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Type	Description
type	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.
ip_call_limits	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
id	String	Request throttling policy ID.
bind_num	Integer	Number of APIs to which the request throttling policy has been bound.
is_included_special_throttle	Integer	Whether an excluded request throttling configuration has been created. • 1: yes • 2: no
create_time	String	Creation time.

Status code: 400

Table 4-381 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-382** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-383** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-384** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-385** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "api_call_limits" : 800,
  "app_call_limits" : 300,
  "enable_adaptive_control" : "FALSE",
  "ip_call_limits" : 600,
  "name" : "throttle_demo",
  "remark" : "Throttling Policy 1",
  "time_interval" : 1,
  "time_unit" : "SECOND",
  "type" : 1,
  "user_call_limits" : 500
}
```

Example Responses

Status code: 201

Created

```
{
  "name" : "throttle_demo",
  "create_time" : "2020-07-31T08:44:02.205366118Z",
  "remark" : "Throttling Policy 1",
  "type" : 1,
  "time_interval" : 1,
  "ip_call_limits" : 600,
  "app_call_limits" : 300,
  "time_unit" : "SECOND",
  "api_call_limits" : 800,
  "id" : "3437448ad06f4e0c91a224183116e965",
  "user_call_limits" : 500,
  "enable_adaptive_control" : "FALSE",
  "bind_num" : 0,
  "is_inclu_special_throttle" : 2
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.7.2 Modifying a Request Throttling Policy

Function

This API is used to modify the information about a request throttling policy.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}

Table 4-386 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.

Request Parameters

Table 4-387 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-388 Request body parameters

Parameter	Mandatory	Type	Description
app_call_limits	No	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	Yes	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	Yes	String	Time unit for limiting the number of API calls.
remark	No	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.

Parameter	Mandatory	Type	Description
api_call_limits	Yes	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.
type	No	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	No	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	No	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
time_interval	Yes	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Mandatory	Type	Description
ip_call_limits	No	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.

Response Parameters

Status code: 200

Table 4-389 Response body parameters

Parameter	Type	Description
app_call_limits	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	String	Time unit for limiting the number of API calls.
remark	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.
api_call_limits	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Type	Description
type	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.
ip_call_limits	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
id	String	Request throttling policy ID.
bind_num	Integer	Number of APIs to which the request throttling policy has been bound.
is_included_special_throttle	Integer	Whether an excluded request throttling configuration has been created. • 1: yes • 2: no
create_time	String	Creation time.

Status code: 400

Table 4-390 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-391** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-392** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-393** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-394** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "api_call_limits" : 800,
  "app_call_limits" : 300,
  "enable_adaptive_control" : "FALSE",
  "ip_call_limits" : 600,
  "name" : "throttle_demo",
  "remark" : "Throttling Policy 1",
  "time_interval" : 1,
  "time_unit" : "SECOND",
  "type" : 1,
  "user_call_limits" : 500
}
```

Example Responses

Status code: 200

OK

```
{
  "name" : "throttle_demo",
  "create_time" : "2020-07-31T08:44:02.205366118Z",
  "remark" : "Throttling Policy 1",
  "type" : 1,
  "time_interval" : 1,
  "ip_call_limits" : 600,
  "app_call_limits" : 300,
  "time_unit" : "SECOND",
  "api_call_limits" : 800,
  "id" : "3437448ad06f4e0c91a224183116e965",
  "user_call_limits" : 500,
  "enable_adaptive_control" : "FALSE",
  "bind_num" : 0,
  "is_inclu_special_throttle" : 2
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.7.3 Deleting a Request Throttling Policy

Function

This API is used to delete a request throttling policy and all binding relationships between the policy and APIs.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}

Table 4-395 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.

Request Parameters

Table 4-396 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-397 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-398 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-399 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 500

Table 4-400 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.7.4 Querying Request Throttling Policies

Function

This API is used to query all request throttling policies.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttles

Table 4-401 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-402 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	Request throttling policy ID.
name	No	String	Request throttling policy name.
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-403 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-404 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
throttles	Array of ThrottlesInfo objects	Request throttling policy list.

Table 4-405 ThrottlesInfo

Parameter	Type	Description
app_call_limits	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	String	Time unit for limiting the number of API calls.
remark	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.
api_call_limits	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.
type	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Type	Description
time_interval	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.
ip_call_limits	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
id	String	Request throttling policy ID.
bind_num	Integer	Number of APIs to which the request throttling policy has been bound.
is_inclu_special_throttle	Integer	Whether an excluded request throttling configuration has been created. • 1: yes • 2: no
create_time	String	Creation time.

Status code: 400**Table 4-406** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-407** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-408 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-409** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-410** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "throttles" : [ {
    "name" : "throttle_demo",
    "create_time" : "2020-07-31T08:44:02.205366118Z",
    "remark" : "Throttling Policy 1",
    "type" : 1,
    "time_interval" : 1,
    "ip_call_limits" : 600,
    "app_call_limits" : 300,
    "time_unit" : "SECOND",
    "api_call_limits" : 800,
    "id" : "3437448ad06f4e0c91a224183116e965",
    "user_call_limits" : 500,
    "enable_adaptive_control" : "FALSE",
```

```
{
  "bind_num" : 0,
  "is_inclu_special_throttle" : 2
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.7.5 Querying Details of a Request Throttling Policy

Function

This API is used to query the details of a request throttling policy.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}

Table 4-411 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.

Request Parameters

Table 4-412 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-413 Response body parameters

Parameter	Type	Description
app_call_limits	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	String	Time unit for limiting the number of API calls.
remark	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.
api_call_limits	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.
type	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.
user_call_limits	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.

Parameter	Type	Description
time_interval	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.
ip_call_limits	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
id	String	Request throttling policy ID.
bind_num	Integer	Number of APIs to which the request throttling policy has been bound.
is_inclu_special_throttle	Integer	Whether an excluded request throttling configuration has been created. • 1: yes • 2: no
create_time	String	Creation time.

Status code: 401**Table 4-414** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-415** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-416 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-417** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "name" : "throttle_demo",
  "create_time" : "2020-07-31T08:44:02.205366118Z",
  "remark" : "Throttling Policy 1",
  "type" : 1,
  "time_interval" : 1,
  "ip_call_limits" : 600,
  "app_call_limits" : 300,
  "time_unit" : "SECOND",
  "api_call_limits" : 800,
  "id" : "3437448ad06f4e0c91a224183116e965",
  "user_call_limits" : 500,
  "enable_adaptive_control" : "FALSE",
  "bind_num" : 0,
  "is_inclu_special_throttle" : 2
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
}
```

```
{
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3005",
  "error_msg": "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
  "error_msg": "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.8 Binding/Unbinding Request Throttling Policies

4.8.1 Binding a Request Throttling Policy

Function

The request throttling policy bound to an API will control access of all users to the API.

If the number of API calls within a specified period reaches the limit, subsequent access will be rejected, protecting the backend API from abnormal traffic and ensuring stable service running.

This API is used to bind a request throttling policy to an API that has been published in an environment. You can bind different request throttling policies to

an API in different environments, but can bind only one request throttling policy to the API in each environment.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings

Table 4-418 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-419 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-420 Request body parameters

Parameter	Mandatory	Type	Description
strategy_id	Yes	String	Request throttling policy ID. Minimum: 1 Maximum: 65
publish_ids	Yes	Array of strings	API publication record ID.

Response Parameters

Status code: 201

Table 4-421 Response body parameters

Parameter	Type	Description
throttle_applies	Array of ThrottleBindingResp objects	List of binding relationships between APIs and request throttling policies.

Table 4-422 ThrottleBindingResp

Parameter	Type	Description
publish_id	String	ID of an API publication record.
scope	Integer	Scope of the request throttling policy. 1: access of both users and apps 2: access of a user 3: access of an app Currently, only 1 is supported.
strategy_id	String	Request throttling policy ID.
apply_time	String	Time when the policy is bound to the API.
id	String	Binding record ID.

Status code: 401**Table 4-423** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-424** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-425 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-426** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "publish_ids" : [ "40e7162dc6b94bbbb1a60d2a24b1b0c" ],
  "strategy_id" : "3437448ad06f4e0c91a224183116e965"
}
```

Example Responses

Status code: 201

Created

```
{
  "throttle_applies" : [ {
    "publish_id" : "40e7162dc6b94bbbb1a60d2a24b1b0c",
    "scope" : 1,
    "strategy_id" : "3437448ad06f4e0c91a224183116e965",
    "apply_time" : "2020-08-03T12:25:52.257613934Z",
    "id" : "3e06ac135e18477e918060d3c59d6f6a"
  } ]
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.8.2 Unbinding a Request Throttling Policy

Function

This API is used to unbind a request throttling policy from an API.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings/{throttle_binding_id}

Table 4-427 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.
throttle_binding_id	Yes	String	ID of the binding relationship between the API and request throttling policy.

Request Parameters

Table 4-428 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-429 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-430 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-431 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-432** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-433** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3012",
  "error_msg" : "The request throttling policy binding record does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.8.3 Querying APIs Bound with a Request Throttling Policy

Function

This API is used to query the APIs to which a specified request throttling policy has been bound.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings/binded-apis

Table 4-434 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-435 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
throttle_id	Yes	String	Request throttling policy ID.
env_id	No	String	Environment ID.
group_id	No	String	API group ID.
api_id	No	String	API ID.
api_name	No	String	API name.

Request Parameters

Table 4-436 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-437 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of ApiForThrottle objects	API list.

Table 4-438 ApiForThrottle

Parameter	Type	Description
auth_type	String	Security authentication mode.
run_env_name	String	Name of the environment in which the API has been published.
group_name	String	API group name.
publish_id	String	Publication record ID.
group_id	String	ID of the API group to which the API belongs.
name	String	API name.
remark	String	API description.
run_env_id	String	ID of the environment in which the API has been published.
id	String	API ID.
req_uri	String	API request address.
type	Integer	API type.
throttle_apply_id	String	Binding record ID.
throttle_name	String	Name of the request throttling policy bound to the API.
apply_time	String	Time when the request throttling policy is bound to the API.

Status code: 400

Table 4-439 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-440** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-441** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-442** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-443** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "apis" : [ {
    "run_env_name" : "RELEASE",
    "group_name" : "api_group_001",
    "publish_id" : "40e7162dc6b94bbbbb1a60d2a24b1b0c",
    "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
    "throttle_apply_id" : "3e06ac135e18477e918060d3c59d6f6a",
    "name" : "Api_http",
    "apply_time" : "2020-08-03T12:25:52Z",
    "remark" : "Web backend Api",
    "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "id" : "5f918d104dc84480a75166ba99efff21",
    "type" : 1,
    "throttle_name" : "throttle_demo",
    "auth_type" : "APP",
    "req_uri" : "/test/http"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:throttle_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.8.4 Querying APIs Not Bound with a Request Throttling Policy

Function

This API is used to query the self-developed APIs to which a request throttling policy has not been bound. Only published APIs will be displayed.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings/unbound-apis

Table 4-444 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-445 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
throttle_id	Yes	String	Request throttling policy ID.
env_id	No	String	Environment ID.
group_id	No	String	API group ID.
api_id	No	String	API ID.
api_name	No	String	API name.

Request Parameters

Table 4-446 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-447 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.

Parameter	Type	Description
apis	Array of ApiForThrottle objects	API list.

Table 4-448 ApiForThrottle

Parameter	Type	Description
auth_type	String	Security authentication mode.
run_env_name	String	Name of the environment in which the API has been published.
group_name	String	API group name.
publish_id	String	Publication record ID.
group_id	String	ID of the API group to which the API belongs.
name	String	API name.
remark	String	API description.
run_env_id	String	ID of the environment in which the API has been published.
id	String	API ID.
req_uri	String	API request address.
type	Integer	API type.
throttle_apply_id	String	Binding record ID.
throttle_name	String	Name of the request throttling policy bound to the API.
apply_time	String	Time when the request throttling policy is bound to the API.

Status code: 400**Table 4-449** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-450** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-451** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-452** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-453** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "total" : 2,
  "size" : 2,
  "apis" : [ {
    "run_env_name" : "RELEASE",
    "group_name" : "api_group_001",
    "publish_id" : "9f27d1dc4f4242a9abf88e563dbfc33d",
    "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
    "name" : "Api_mock",
    "remark" : "Mock backend API",
    "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "id" : "3a955b791bd24b1c9cd94c745f8d1aad",
    "type" : 1,
    "auth_type" : "IAM",
    "req_uri" : "/test/mock"
  }, {
    "run_env_name" : "RELEASE",
    "group_name" : "APIGroup_d00511069",
    "publish_id" : "0c613568c8644a1b92172156f77a5759",
    "group_id" : "d7d0b9a54469424f942e16a6b6026936",
    "name" : "API_nevj",
    "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "id" : "9e07bc00a1864ab4aafd4a23d19dd1c2",
    "type" : 1,
    "auth_type" : "APP",
    "req_uri" : "/fdasf"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:throttle_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.8.5 Querying Request Throttling Policies Bound to an API

Function

This API is used to query the request throttling policies that have been bound to an API. Only one request throttling policy can be bound to an API in an environment.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings/binded-throttles

Table 4-454 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-455 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
api_id	Yes	String	API ID.
throttle_id	No	String	ID of a request throttling policy.
throttle_name	No	String	Request throttling policy name.
env_id	No	String	Environment ID.

Request Parameters

Table 4-456 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-457 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.

Parameter	Type	Description
throttles	Array of ThrottleForApi objects	Request throttling policy list.

Table 4-458 ThrottleForApi

Parameter	Type	Description
app_call_limits	Integer	Maximum number of times the API can be accessed by an app within the same period. The value of this parameter must be less than that of user_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
name	String	Request throttling policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
time_unit	String	Time unit for limiting the number of API calls.
remark	String	Description of the request throttling policy, which can contain a maximum of 255 characters. NOTE Characters must be encoded using UTF-8 or Unicode.
api_call_limits	Integer	Maximum number of times an API can be accessed within a specified period. The value of this parameter cannot exceed the default limit 200 TPS. You can change the default limit to meet service requirements. The maximum value is 2,147,483,647. The value is a positive integer.
type	Integer	Type of the request throttling policy. • 1: basic, limiting the maximum number of times a single API bound to the policy can be called within the specified period. • 2: shared, limiting the maximum number of times all APIs bound to the policy can be called within the specified period.
enable_adaptive_control	String	Whether to enable dynamic request throttling. • TRUE • FALSE This parameter is currently not supported.

Parameter	Type	Description
user_call_limits	Integer	Maximum number of times the API can be accessed by a user within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
time_interval	Integer	Period of time for limiting the number of API calls. This parameter applies with each of the preceding three API call limits. The maximum value is 2,147,483,647. The value is a positive integer.
ip_call_limits	Integer	Maximum number of times the API can be accessed by an IP address within the same period. The value of this parameter must be less than that of api_call_limits. The maximum value is 2,147,483,647. The value is a positive integer.
id	String	Request throttling policy ID.
bind_num	Integer	Number of APIs to which the request throttling policy has been bound.
is_inclu_special_throttle	Integer	Whether an excluded request throttling configuration has been created. • 1: yes • 2: no
create_time	String	Creation time.
env_name	String	Environment in which the request throttling policy takes effect.
bind_id	String	Binding record ID.
bind_time	String	Time when the request throttling policy is bound to the API.

Status code: 400**Table 4-459** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-460 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-461** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-462** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-463** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 1,
```

```
"size" : 1,
"throttles" : [ {
  "id" : "3437448ad06f4e0c91a224183116e965",
  "name" : "throttle_demo",
  "api_call_limits" : 800,
  "user_call_limits" : 500,
  "app_call_limits" : 300,
  "ip_call_limits" : 600,
  "time_interval" : 1,
  "time_unit" : "SECOND",
  "create_time" : "2020-07-31T08:44:02Z",
  "remark" : "Throttling Policy 1",
  "is_inclu_special_throttle" : 2,
  "env_name" : "RELEASE",
  "type" : 1,
  "bind_id" : "3e06ac135e18477e918060d3c59d6f6a",
  "bind_time" : "2020-08-03T12:25:52Z",
  "bind_num" : 0,
  "enable_adaptive_control" : "FALSE"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:throttle_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.8.6 Unbinding Request Throttling Policies

Function

This API is used to unbind request throttling policies from APIs.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/throttle-bindings

Table 4-464 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-465 Query parameters

Parameter	Mandatory	Type	Description
action	Yes	String	The value must be delete.

Request Parameters

Table 4-466 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-467 Request body parameters

Parameter	Mandatory	Type	Description
throttle_bindings	No	Array of strings	Request throttling policy binding records to be canceled.

Response Parameters

Status code: 200

Table 4-468 Response body parameters

Parameter	Type	Description
success_count	Integer	Number of request throttling policies that have been successfully unbound from APIs.
failure	Array of ThrottleBindingBatchFailure objects	Error message and request throttling policies that fail to be unbound.

Table 4-469 ThrottleBindingBatchFailure

Parameter	Type	Description
bind_id	String	ID of a binding record that fails to be canceled.
error_code	String	Error code displayed for a binding failure.
error_msg	String	Error message displayed for a binding failure.
api_id	String	ID of an API from which a policy fails to be unbound.

Parameter	Type	Description
api_name	String	Name of the API from which a policy fails to be unbound.

Status code: 400**Table 4-470** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-471** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-472** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-473** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-474** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "throttle_bindings" : [ "6a6a75b425df416cbdc7821da30be8d", "b11e5970f732440dbea647580647d57f" ]
}
```

Example Responses**Status code: 200**

OK

```
{
  "failure" : [ {
    "bind_id" : "b11e5970f732440dbea647580647d57f",
    "error_code" : "APIG.3012",
    "error_msg" : "The request throttling policy binding record does not exist"
  } ],
  "success_count" : 1
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "parameter action should be \\\"delete\\\""
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
}
```

```
{
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.9 Excluded Request Throttling Configuration

4.9.1 Creating an Excluded Request Throttling Configuration

Function

A request throttling policy controls the maximum number of times an API can be accessed within a specified period and the maximum numbers of times the API can be accessed by a tenant or an app within the same period.

When necessary, you can create an excluded request throttling configuration to specify the threshold of API calls for a specific app. For example, after you set the API call threshold for all apps to 500 calls/minute, you can specify the API call threshold of app 1 as 800 calls/minute.

You can add excluded apps or tenants to a request throttling policy.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}/throttle-specials

Table 4-475 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.

Request Parameters

Table 4-476 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-477 Request body parameters

Parameter	Mandatory	Type	Description
call_limits	Yes	Integer	Maximum number of times that a special object can access an API within the throttling period. Minimum: 1
object_id	Yes	String	ID of a special app or account ID of a special tenant. Minimum: 1 Maximum: 65
object_type	Yes	String	Excluded object type.

Response Parameters

Status code: 201

Table 4-478 Response body parameters

Parameter	Type	Description
id	String	Excluded request throttling configuration ID.
call_limits	Integer	Maximum number of times the excluded object can access an API within the throttling period.
apply_time	String	Time when the excluded request throttling configuration is created.
app_name	String	Name of the app to which the excluded request throttling configuration applies.
app_id	String	ID of the app to which the excluded request throttling configuration applies.
object_id	String	ID of an object specified in the excluded request throttling configuration.
object_type	String	Excluded object type, which can be APP or USER.
object_name	String	Name of an app or a tenant to which the excluded request throttling configuration applies.
throttle_id	String	Request throttling policy ID.

Status code: 400**Table 4-479** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-480** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-481 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-482** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-483** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "call_limits" : 150,
  "object_id" : "356de8eb7a8742168586e5daf5339965",
  "object_type" : "APP"
}
```

Example Responses

Status code: 201

Created

```
{
  "call_limits" : 150,
  "app_name" : "app_demo",
  "object_name" : "app_demo",
  "object_id" : "356de8eb7a8742168586e5daf5339965",
  "throttle_id" : "3437448ad06f4e0c91a224183116e965",
  "apply_time" : "2020-08-04T02:40:56.717710961Z",
  "id" : "a3e9ff8db55544ed9db91d8b048770c0",
  "app_id" : "356de8eb7a8742168586e5daf5339965",
  "object_type" : "APP"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2003",
  "error_msg" : "The parameter value is too large,parameterName:call_limits. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.9.2 Modifying an Excluded Request Throttling Configuration

Function

This API is used to modify an excluded configuration of a request throttling policy.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}/throttle-specials/{strategy_id}

Table 4-484 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.
strategy_id	Yes	String	ID of an excluded configuration.

Request Parameters

Table 4-485 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-486 Request body parameters

Parameter	Mandatory	Type	Description
call_limits	Yes	Integer	Maximum number of times that an excluded object can access an API within the throttling period.

Response Parameters

Status code: 200

Table 4-487 Response body parameters

Parameter	Type	Description
id	String	Excluded request throttling configuration ID.
call_limits	Integer	Maximum number of times the excluded object can access an API within the throttling period.
apply_time	String	Time when the excluded request throttling configuration is created.
app_name	String	Name of the app to which the excluded request throttling configuration applies.
app_id	String	ID of the app to which the excluded request throttling configuration applies.
object_id	String	ID of an object specified in the excluded request throttling configuration.
object_type	String	Excluded object type, which can be APP or USER.
object_name	String	Name of an app or a tenant to which the excluded request throttling configuration applies.
throttle_id	String	Request throttling policy ID.

Status code: 400

Table 4-488 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 401**Table 4-489** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-490** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-491** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-492** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "call_limits" : 200,
  "app_name" : "app_demo",
  "object_name" : "app_demo",
  "object_id" : "356de8eb7a8742168586e5daf5339965",
  "throttle_id" : "3437448ad06f4e0c91a224183116e965",
  "apply_time" : "2020-08-04T02:40:56Z",
  "id" : "a3e9ff8db55544ed9db91d8b048770c0",
  "app_id" : "356de8eb7a8742168586e5daf5339965",
  "object_type" : "APP"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2003",
  "error_msg" : "The parameter value is too large,parameterName:call_limits. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3013",
  "error_msg" : "Excluded request throttling configuration a3e9ff8db55544ed9db91d8b048770c0 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.9.3 Deleting an Excluded Request Throttling Configuration

Function

This API is used to delete an excluded configuration of a request throttling policy.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}/
throttle-specials/{strategy_id}

Table 4-493 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
throttle_id	Yes	String	ID of a request throttle policy.
strategy_id	Yes	String	ID of an excluded configuration.

Request Parameters

Table 4-494 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400**Table 4-495** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-496** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-497** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-498 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-499** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3013",
  "error_msg" : "Excluded request throttling configuration a3e9ff8db55544ed9db91d8b048770c0 does not"
}
```

```
exist"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.9.4 Querying Excluded Request Throttling Configurations

Function

This API is used to query all excluded configurations of a request throttling policy.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/throttles/{throttle_id}/throttle-specials

Table 4-500 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Parameter	Mandatory	Type	Description
throttle_id	Yes	String	ID of a request throttle policy.

Table 4-501 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
object_type	No	String	Object type, which can be APP or USER.
app_name	No	String	Name of an excluded app.

Request Parameters

Table 4-502 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-503 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.

Parameter	Type	Description
total	Long	Number of resources that match the query conditions.
throttle_specials	Array of ThrottleSpecialInfo objects	List of excluded configurations.

Table 4-504 ThrottleSpecialInfo

Parameter	Type	Description
id	String	Excluded request throttling configuration ID.
call_limits	Integer	Maximum number of times the excluded object can access an API within the throttling period.
apply_time	String	Time when the excluded request throttling configuration is created.
app_name	String	Name of the app to which the excluded request throttling configuration applies.
app_id	String	ID of the app to which the excluded request throttling configuration applies.
object_id	String	ID of an object specified in the excluded request throttling configuration.
object_type	String	Excluded object type, which can be APP or USER.
object_name	String	Name of an app or a tenant to which the excluded request throttling configuration applies.
throttle_id	String	Request throttling policy ID.

Status code: 400**Table 4-505** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-506 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-507** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-508** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-509** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 1,
```

```
"size" : 1,
"throttle_specials" : [ {
  "call_limits" : 200,
  "app_name" : "app_demo",
  "object_name" : "app_demo",
  "object_id" : "356de8eb7a8742168586e5daf5339965",
  "throttle_id" : "3437448ad06f4e0c91a224183116e965",
  "apply_time" : "2020-08-04T02:40:56Z",
  "id" : "a3e9ff8db55544ed9db91d8b048770c0",
  "app_id" : "356de8eb7a8742168586e5daf5339965",
  "object_type" : "APP"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3005",
  "error_msg" : "Request throttling policy 3437448ad06f4e0c91a224183116e965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.10 Signature Key Management

4.10.1 Creating a Signature Key

Function

To ensure API security, tenants are advised to provide a protection mechanism for API access. That is, for APIs exposed by tenants, the request sources must be authenticated. Requests that do not meet the authentication requirements will be rejected.

The signature key is one of the API security protection mechanisms.

A tenant creates a signature key and binds it to an API. When requesting the API, ROMA Connect APIC uses the bound signature key to encrypt the request parameters and generate a signature. When a tenant's backend service receives a request, it verifies the signature. If the signature verification fails, the request is not sent by ROMA Connect APIC. In this case, the tenant can reject the request to ensure API security and prevent the API from being attacked by requests from unknown sources.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/signs

Table 4-510 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-511 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-512 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Signature key name. The value can contain only letters, digits, and underscores(_) and must start with a letter. NOTE Characters must be in UTF-8 or Unicode format. Minimum: 3 Maximum: 64

Parameter	Mandatory	Type	Description
sign_type	No	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.

Parameter	Mandatory	Type	Description
sign_key	No	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Mandatory	Type	Description
sign_secret	No	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.

Response Parameters

Status code: 201

Table 4-513 Response body parameters

Parameter	Type	Description
name	String	Signature key name. The value can contain only letters, digits, and underscores(_) and must start with a letter. NOTE Characters must be in UTF-8 or Unicode format. Minimum: 3 Maximum: 64
sign_type	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.
sign_key	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Type	Description
sign_secret	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.
update_time	String	Update time.
create_time	String	Creation time.
id	String	Signature key ID.

Status code: 400**Table 4-514** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-515 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-516** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-517** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-518** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "signature_demo",
  "sign_key" : "signkeysignkey",
  "sign_secret" : "signsecretsignsecret"
}
```

Example Responses

Status code: 201

Created

```
{
  "sign_secret" : "signsecretsignsecretsignsecret",
  "update_time" : "2020-08-03T03:39:38.119032888Z",
  "create_time" : "2020-08-03T03:39:38.119032659Z",
  "name" : "signature_demo",
  "id" : "0b0e8f456b8742218af75f945307173c",
  "sign_key" : "signkeysignkey",
  "sign_type" : "hmac"
}
```

Status code: 400**Bad Request**

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401**Unauthorized**

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403**Forbidden**

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404**Not Found**

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500**Internal Server Error**

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.10.2 Modifying a Signature Key

Function

This API is used to modify the information about a signature key.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/signs/{sign_id}

Table 4-519 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
sign_id	Yes	String	Signature key ID.

Request Parameters

Table 4-520 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-521 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Signature key name. The value can contain only letters, digits, and underscores(_) and must start with a letter. NOTE Characters must be in UTF-8 or Unicode format. Minimum: 3 Maximum: 64
sign_type	No	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.

Parameter	Mandatory	Type	Description
sign_key	No	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Mandatory	Type	Description
sign_secret	No	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.

Response Parameters

Status code: 201

Table 4-522 Response body parameters

Parameter	Type	Description
name	String	Signature key name. The value can contain only letters, digits, and underscores(_) and must start with a letter. NOTE Characters must be in UTF-8 or Unicode format. Minimum: 3 Maximum: 64
sign_type	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.
sign_key	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Type	Description
sign_secret	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.
update_time	String	Update time.
create_time	String	Creation time.
id	String	Signature key ID.

Status code: 400**Table 4-523** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-524 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-525** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-526** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-527** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "name" : "signature_demo"  
}
```

Example Responses**Status code: 201**

OK

```
{
  "sign_secret" : "dc02fc5f30714d6bb21888389419e2b3",
  "update_time" : "2020-08-03T03:50:14.989785802Z",
  "create_time" : "2020-08-03T03:39:38Z",
  "name" : "signature_demo",
  "id" : "0b0e8f456b8742218af75f945307173c",
  "sign_key" : "a071a20d460a4f639a636c3d7e3d8163",
  "sign_type" : "hmac"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3017",
  "error_msg" : "Signature key 0b0e8f456b8742218af75f945307173c does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	OK
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.10.3 Deleting a Signature Key

Function

This API is used to delete a signature key. This operation will invalidate the signature key and unbind it from the APIs to which it was bound.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/signs/{sign_id}

Table 4-528 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
sign_id	Yes	String	Signature key ID.

Request Parameters

Table 4-529 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 401

Table 4-530 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-531 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-532 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-533 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3017",
  "error_msg" : "Signature key 0b0e8f456b8742218af75f945307173c does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.10.4 Querying Signature Keys

Function

This API is used to query all the signature keys.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/signs

Table 4-534 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-535 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	Signature key ID.
name	No	String	Signature key name.
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-536 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-537** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
signs	Array of SignatureWithBindNum objects	Signature key list.

Table 4-538 SignatureWithBindNum

Parameter	Type	Description
name	String	Signature key name. The value can contain only letters, digits, and underscores(_) and must start with a letter. NOTE Characters must be in UTF-8 or Unicode format. Minimum: 3 Maximum: 64

Parameter	Type	Description
sign_type	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.
sign_key	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Type	Description
sign_secret	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.
update_time	String	Update time.
create_time	String	Creation time.
id	String	Signature key ID.
bind_num	Integer	Number of bound APIs.
ldapi_bind_num	Integer	Number of bound custom backends.

Status code: 400**Table 4-539** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-540** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-541** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-542** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-543** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "total" : 2,
  "size" : 2,
  "signs" : [ {
    "sign_secret" : "signsecretsignsecretsignsecretsignsecret",
    "update_time" : "2018-02-07T02:00:27.964766Z",
    "create_time" : "2018-02-06T12:17:36Z",
    "name" : "signature_demo",
    "id" : "0b0e8f456b8742218af75f945307173c",
    "sign_key" : "signkeysignkey",
    "sign_type" : "hmac",
    "bind_num" : 0,
    "ldapi_bind_num" : 0
  }, {
    "sign_secret" : "9ce16b029034464898ee33540c42e16a",
    "update_time" : "2020-07-30T03:56:58Z",
    "create_time" : "2020-07-30T03:56:58Z",
    "name" : "Signature_udlu",
    "id" : "9dc388382fba485aadd19f932303f4c9",
    "sign_key" : "ca50c5b670044c83b5b890a9a68a30d5",
    "sign_type" : "hmac",
    "bind_num" : 0,
    "ldapi_bind_num" : 0
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
}
```

```
"error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.11 Binding/Unbinding Signature Keys

4.11.1 Binding a Signature Key

Function

A signature key takes effect only after being bound to an API.

When requesting the backend service, ROMA Connect APIC uses the signature key to cryptographically sign requests. The backend service verifies the signature to identify request sources.

This API is used to bind a signature key to one or more published APIs. You can bind different signature keys to an API in different environments, but can bind only one signature key to the API in each environment.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/sign-bindings

Table 4-544 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-545 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-546 Request body parameters

Parameter	Mandatory	Type	Description
sign_id	Yes	String	Signature key ID.
publish_ids	Yes	Array of strings	ID of an API publication record.

Response Parameters

Status code: 201

Table 4-547 Response body parameters

Parameter	Type	Description
bindings	Array of SignApiBindingInfo objects	List of binding relationships between APIs and signature keys.

Table 4-548 SignApiBindingInfo

Parameter	Type	Description
publish_id	String	API publication ID.
api_id	String	API ID.
group_name	String	API group name.
binding_time	String	Time when the policy is bound to the API.
env_id	String	ID of the environment in which the API was published.
env_name	String	Name of the environment in which the API was published.
api_type	Integer	API type.
api_name	String	API name.
id	String	Binding record ID.
api_remark	String	API description.
sign_id	String	Signature key ID.
sign_name	String	Signature key name, The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
sign_key	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.

Parameter	Type	Description
sign_secret	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.
sign_type	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.

Status code: 400

Table 4-549 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-550** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-551** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-552** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-553** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "sign_id" : "0b0e8f456b8742218af75f945307173c",
  "publish_ids" : [ "40e7162dc6b94bbbb1a60d2a24b1b0c" ]
}
```

Example Responses

Status code: 201

Created

```
{
  "bindings" : [ {
    "api_id" : "5f918d104dc84480a75166ba99efff21",
    "sign_secret" : "dc02fc5f30714d6bb21888389419e2b3",
    "group_name" : "api_group_001",
    "sign_id" : "0b0e8f456b8742218af75f945307173c",
    "sign_key" : "a071a20d460a4f639a636c3d7e3d8163",
    "binding_time" : "2020-08-03T04:00:11.638167852Z",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name" : "RELEASE",
    "sign_name" : "signature_demo",
    "api_type" : 1,
    "api_name" : "Api_http",
    "id" : "25082bd52f74442bb1d273993d567938",
    "api_remark" : "Web backend Api",
    "publish_id" : "66a645f1d6294fa6899cb1ed1c51bc4c"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:sign_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3017",
  "error_msg" : "Signature key 0b0e8f456b8742218af75f945307173c does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.11.2 Unbinding a Signature Key

Function

This API is used to unbind a signature key from an API.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/sign-bindings/
{sign_bindings_id}

Table 4-554 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
sign_bindings_id	Yes	String	ID of the binding relationship between an API and a signature key.

Request Parameters

Table 4-555 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-556 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-557 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-558 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-559 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-560 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3018",
  "error_msg" : "The signature key binding record does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.11.3 Querying Signature Keys Bound to an API****Function**

This API is used to query the signature keys that have been bound to a specified API. Only one signature key can be bound to an API in an environment.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/sign-bindings/binded-signs

Table 4-561 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-562 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
api_id	Yes	String	API ID.
sign_id	No	String	Signature key ID.
sign_name	No	String	Signature key name.
env_id	No	String	Environment ID.

Request Parameters

Table 4-563 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-564 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.

Parameter	Type	Description
bindings	Array of SignApiBindingInfo objects	List of binding relationships between APIs and signature keys.

Table 4-565 SignApiBindingInfo

Parameter	Type	Description
publish_id	String	API publication ID.
api_id	String	API ID.
group_name	String	API group name.
binding_time	String	Time when the policy is bound to the API.
env_id	String	ID of the environment in which the API was published.
env_name	String	Name of the environment in which the API was published.
api_type	Integer	API type.
api_name	String	API name.
id	String	Binding record ID.
api_remark	String	API description.
sign_id	String	Signature key ID.
sign_name	String	Signature key name, The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.

Parameter	Type	Description
sign_key	String	Signature key. • hmac signature key: The value contains 8 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • basic signature key: The value contains 4 to 32 characters, including letters, digits, underscores (_), and hyphens (-). The value must start with a letter or digit. A key is automatically generated by the backend if no key is specified. • public_key signature key: The value contains 8 to 512 characters, including letters, digits, underscores (_), hyphens (-), plus signs (+), slashes (/), and equal signs (=). The value must start with a letter, digit, plus sign (+), or slash (/). A key is automatically generated by the backend if no key is specified.
sign_secret	String	Signature secret. • hmac signature secret: The value contains 16 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • basic signature secret: The value contains 8 to 64 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), and percent signs (%). The value must start with a letter or digit. A secret is automatically generated by the backend if no secret is specified. • public_key signature secret: The value contains 15 to 2048 characters, including letters, digits, underscores (_), hyphens (-), exclamation marks (!), at signs (@), number signs (#), dollar signs (\$), percent signs (%), plus signs (+), slashes (/), and equal signs (=). The value must with a letter, digit, plus sign (+), or slash (/). A secret is automatically generated by the backend if no secret is specified.

Parameter	Type	Description
sign_type	String	Signature key type. • hmac • basic • public_key The basic key type requires the instance to be upgraded to the corresponding version. If the basic key configuration does not exist in the instance, contact technical support to upgrade the instance. The public_key type can be used only when public_key is enabled for the instance. For details about the instance feature configuration, see Appendix > APIC Features Supported by ROMA Connect Instances in the API Reference. If the public_key configuration does not exist in the instance, contact technical support to enable public_key.

Status code: 400**Table 4-566** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-567** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-568 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-569** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-570** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "size": 1,
  "bindings": [ {
    "api_id": "5f918d104dc84480a75166ba99efff21",
    "group_name": "api_group_001",
    "binding_time": "2020-08-03T04:00:11Z",
    "env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name": "RELEASE",
    "sign_id": "0b0e8f456b8742218af75f945307173c",
    "sign_name": "signature_demo",
    "sign_key": "a071a20d460a4f639a636c3d7e3d8163",
    "sign_secret": "dc02fc5f30714d6bb21888389419e2b3",
    "api_type": 1,
    "api_name": "Api_http",
    "id": "25082bd52f74442bb1d273993d567938",
```



```
{
  "api_remark": "Web backend Api",
  "publish_id": "66a645f1d6294fa6899cb1ed1c51bc4c"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2012",
  "error_msg": "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3002",
  "error_msg": "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
  "error_msg": "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.11.4 Querying APIs Not Bound with a Signature Key

Function

This API is used to query the APIs to which a signature key has not been bound. Only published APIs will be displayed.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/sign-bindings/unbinded-apis

Table 4-571 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-572 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Parameter	Mandatory	Type	Description
sign_id	Yes	String	Signature key ID.
env_id	No	String	Environment ID.
api_id	No	String	API ID.
api_name	No	String	API name.
group_id	No	String	API group ID.

Request Parameters

Table 4-573 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-574 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of ApiForSign objects	API list.

Table 4-575 ApiForSign

Parameter	Type	Description
auth_type	String	Security authentication mode.
run_env_name	String	Name of the environment in which the API has been published.

Parameter	Type	Description
group_name	String	API group name.
publish_id	String	Publication record ID.
group_id	String	ID of the API group to which the API belongs.
name	String	API name.
remark	String	API description.
run_env_id	String	ID of the environment in which the API has been published.
id	String	API ID.
req_uri	String	API request address.
type	Integer	API type.
signature_name	String	Name of the signature key bound to the API.

Status code: 400**Table 4-576** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-577** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-578 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-579** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-580** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "apis" : [ {
    "run_env_name" : "RELEASE",
    "group_name" : "api_group_001",
    "remark" : "Mock backend API",
    "publish_id" : "9f27d1dc4f4242a9abf88e563dbfc33d",
    "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
    "name" : "Api_mock",
    "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "id" : "3a955b791bd24b1c9cd94c745f8d1aad",
    "type" : 1,
    "auth_type" : "IAM",
    "req_uri" : "/test/mock"
```

```
  }]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.2012",  
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support  
documentation"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code" : "APIG.1002",  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "APIG.1005",  
  "error_msg" : "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "APIG.3017",  
  "error_msg" : "Signature key 0b0e8f456b8742218af75f945307173c does not exist"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.11.5 Querying APIs Bound with a Signature Key

Function

This API is used to query the APIs to which a signature key has been bound.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/sign-bindings/binded-apis

Table 4-581 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-582 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
sign_id	Yes	String	Signature key ID.
env_id	No	String	Environment ID.
api_id	No	String	API ID.
api_name	No	String	API name.
group_id	No	String	API group ID.

Request Parameters

Table 4-583 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-584** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
bindings	Array of SignApiBindingBase objects	List of binding relationships between signature keys and APIs.

Table 4-585 SignApiBindingBase

Parameter	Type	Description
publish_id	String	API publication ID.
api_id	String	API ID.
group_name	String	API group name.
binding_time	String	Time when the policy is bound to the API.
env_id	String	ID of the environment in which the API was published.
env_name	String	Name of the environment in which the API was published.
api_type	Integer	API type.
api_name	String	API name.
id	String	Binding record ID.

Parameter	Type	Description
api_remark	String	API description.
sign_id	String	Signature key ID.
sign_name	String	Signature key name, The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.

Status code: 400**Table 4-586** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-587** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-588** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-589 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-590 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "bindings" : [ {
    "api_id" : "5f918d104dc84480a75166ba99efff21",
    "group_name" : "api_group_001",
    "binding_time" : "2020-08-03T04:00:11Z",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name" : "RELEASE",
    "sign_name" : "signature_demo",
    "api_type" : 1,
    "api_name" : "Api_http",
    "id" : "25082bd52f74442bb1d273993d567938",
    "api_remark" : "Web backend Api",
    "publish_id" : "40e7162dc6b94bbbbb1a60d2a24b1b0c"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3017",
  "error_msg" : "Signature key 0b0e8f456b8742218af75f945307173c does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.12 Access Control Policy Management

4.12.1 Creating an Access Control Policy

Function

This API is used to create an access control policy to allow or deny API access from certain IP addresses or tenants. The `acl_value` value of a domain is a tenant name rather than a domain name (such as `www.exampleDomain.com`).

URI

POST `/v2/{project_id}/apic/instances/{instance_id}/acls`

Table 4-591 Path parameters

Parameter	Mandatory	Type	Description
<code>project_id</code>	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
<code>instance_id</code>	Yes	String	Instance ID.

Request Parameters

Table 4-592 Request header parameters

Parameter	Mandatory	Type	Description
<code>X-Auth-Token</code>	Yes	String	User token, which can be obtained by calling the IAM API (value of <code>X-Subject-Token</code> in the response header).

Table 4-593 Request body parameters

Parameter	Mandatory	Type	Description
<code>acl_name</code>	Yes	String	Access control policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.

Parameter	Mandatory	Type	Description
acl_type	Yes	String	Access control type. • PERMIT (whitelist) • DENY (blacklist)
acl_value	Yes	String	One or more objects from which the access will be controlled. Separate multiple objects with commas.
entity_type	Yes	String	Object type. • IP • DOMAIN

Response Parameters

Status code: 201

Table 4-594 Response body parameters

Parameter	Type	Description
acl_name	String	Name.
acl_type	String	Type. • PERMIT (whitelist) • DENY (blacklist)
acl_value	String	Access control objects.
entity_type	String	Object type. • IP • DOMAIN
id	String	ID.
update_time	String	Update time.

Status code: 400

Table 4-595 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-596** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-597** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-598** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-599** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "acl_name" : "acl_demo",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "entity_type" : "IP"
}
```

Example Responses

Status code: 201

Created

```
{
  "id" : "7eb619ecf2a24943b099833cd24a01ba",
  "acl_name" : "acl_demo",
  "entity_type" : "IP",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "update_time" : "2020-08-04T08:42:43.461276217Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:acl_type. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.12.2 Modifying an Access Control Policy

Function

This API is used to modify a specified access control policy. Only attributes `acl_name`, `acl_type`, and `acl_value` can be modified.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/acls/{acl_id}

Table 4-600 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
acl_id	Yes	String	Access control policy ID.

Request Parameters

Table 4-601 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-602 Request body parameters

Parameter	Mandatory	Type	Description
acl_name	Yes	String	Access control policy name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). It must start with a letter. NOTE Characters must be in UTF-8 or Unicode format.
acl_type	Yes	String	Access control type. • PERMIT (whitelist) • DENY (blacklist)
acl_value	Yes	String	One or more objects from which the access will be controlled. Separate multiple objects with commas.
entity_type	Yes	String	Object type. • IP • DOMAIN

Response Parameters

Status code: 200**Table 4-603** Response body parameters

Parameter	Type	Description
acl_name	String	Name.

Parameter	Type	Description
acl_type	String	Type. • PERMIT (whitelist) • DENY (blacklist)
acl_value	String	Access control objects.
entity_type	String	Object type. • IP • DOMAIN
id	String	ID.
update_time	String	Update time.

Status code: 400**Table 4-604** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-605** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-606** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-607 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-608** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "acl_name" : "acl_demo",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "entity_type" : "IP"
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "7eb619ecf2a24943b099833cd24a01ba",
  "acl_name" : "acl_demo",
  "entity_type" : "IP",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "update_time" : "2020-08-04T08:54:55.975856802Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:acl_type. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
}
```

```
{  
  "error_msg": "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code": "APIG.1005",  
  "error_msg": "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code": "APIG.3006",  
  "error_msg": "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code": "APIG.9999",  
  "error_msg": "System error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.12.3 Deleting an Access Control Policy

Function

This API is used to delete an access control policy. Access control policies bound to APIs cannot be deleted.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/acls/{acl_id}

Table 4-609 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
acl_id	Yes	String	Access control policy ID.

Request Parameters

Table 4-610 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-611 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-612 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 403**Table 4-613** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-614** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-615** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3006",
  "error_msg" : "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.12.4 Deleting Multiple Access Control Policies

Function

This API is used to delete multiple access control policies.

Access control policies bound to APIs cannot be deleted.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/acls

Table 4-616 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-617 Query parameters

Parameter	Mandatory	Type	Description
action	Yes	String	The value must be delete.

Request Parameters

Table 4-618 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-619 Request body parameters

Parameter	Mandatory	Type	Description
acls	No	Array of strings	IDs of the access control policies to be deleted.

Response Parameters

Status code: 200

Table 4-620 Response body parameters

Parameter	Type	Description
success_count	Integer	Number of access control policies that have been successfully deleted.
failure	Array of AclBatchFailure objects	Error message and access control policies that fail to be deleted.

Table 4-621 AclBatchFailure

Parameter	Type	Description
acl_id	String	ID of an access control policy that fails to be deleted.
acl_name	String	Name of the access control policy.
error_code	String	Error code displayed for a deletion failure.
error_msg	String	Error message displayed for a deletion failure.

Status code: 400

Table 4-622 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-623 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-624 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-625** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-626** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "acls" : [ "7eb619ecf2a24943b099833cd24a01ba", "3a68d39f115d4c128fccd6f624ea6109" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "failure" : [ {
    "acl_id" : "7eb619ecf2a24943b099833cd24a01ba",
    "acl_name" : "acl_demo",
    "error_code" : "APIG.3447",
    "error_msg" : "The Acl Strategy has already binded to APIs"
  } ],
  "success_count" : 1
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value: parameter action should be \\\\\"delete\\\\\\\""
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.12.5 Querying Details of an Access Control Policy

Function

This API is used to query the details of an access control policy.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/acls/{acl_id}

Table 4-627 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
acl_id	Yes	String	Access control policy ID.

Request Parameters

Table 4-628 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-629 Response body parameters

Parameter	Type	Description
acl_name	String	Name.
acl_type	String	Type. • PERMIT (whitelist) • DENY (blacklist)

Parameter	Type	Description
acl_value	String	Access control objects.
entity_type	String	Object type. • IP • DOMAIN
id	String	ID.
update_time	String	Update time.

Status code: 400**Table 4-630** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-631** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-632** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-633 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-634** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id" : "7eb619ecf2a24943b099833cd24a01ba",
  "acl_name" : "acl_demo",
  "entity_type" : "IP",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "update_time" : "2020-08-04T08:42:43Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3006",
  "error_msg" : "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.12.6 Querying Access Control Policies

Function

This API is used to query all the access control policies.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/acls

Table 4-635 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-636 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	Access control policy ID.
name	No	String	Access control policy name.
acl_type	No	String	Access control type. ● PERMIT (whitelist) ● DENY (blacklist)
entity_type	No	String	Application object type. ● IP ● DOMAIN
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-637 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-638** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
acls	Array of ApiAclInfoWithBindNum objects	Access control policy list.

Table 4-639 ApiAclInfoWithBindNum

Parameter	Type	Description
acl_name	String	Access control policy name.
acl_type	String	Type. • PERMIT (whitelist) • DENY (blacklist)
acl_value	String	Access control objects.
bind_num	Integer	Number of bound APIs.
entity_type	String	Object type. • IP • DOMAIN
id	String	Access control policy ID.
update_time	String	Update time.

Status code: 400**Table 4-640** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-641** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-642** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-643** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-644** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "acls" : [ {
    "bind_num" : 0,
    "id" : "7eb619ecf2a24943b099833cd24a01ba",
    "acl_name" : "acl_demo",
    "entity_type" : "IP",
    "acl_type" : "PERMIT",
    "acl_value" : "192.168.1.5,192.168.10.1",
    "update_time" : "2020-08-04T08:42:43Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.13 Binding/Unbinding Access Control Policies

4.13.1 Binding an Access Control Policy to an API

Function

This API is used to bind an access control policy to a specified API.

You can bind different access control policies to an API in different environments, but you can bind only one access control policy to the API in each environment.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/acl-bindings

Table 4-645 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-646 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-647 Request body parameters

Parameter	Mandatory	Type	Description
acl_id	Yes	String	Access control policy ID. Minimum: 1 Maximum: 65
publish_ids	Yes	Array of strings	API publication record ID.

Response Parameters

Status code: 201

Table 4-648 Response body parameters

Parameter	Type	Description
acl_bindings	Array of AclApiBindingInfo objects	Access control policy binding record list.

Table 4-649 AclApiBindingInfo

Parameter	Type	Description
id	String	Binding ID.
api_id	String	API ID.
env_id	String	Environment ID.
acl_id	String	Access control policy ID.
create_time	String	Time when the policy is bound to the API.

Status code: 400**Table 4-650** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-651** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-652** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-653 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-654** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "acl_id" : "7eb619ecf2a24943b099833cd24a01ba",
  "publish_ids" : [ "40e7162dc6b94b000000000000000000" ]
}
```

Example Responses

Status code: 201

Created

```
{
  "acl_bindings" : [ {
    "id" : "332c5db1458a477b89b2ea741fec94a3",
    "api_id" : "5f918d104dc84480a75166ba99efff21",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "acl_id" : "7eb619ecf2a24943b099833cd24a01ba",
    "create_time" : "2020-08-04T08:58:03.001228747Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:acl_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3006",
  "error_msg" : "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.13.2 Unbinding an Access Control Policy from an API

Function

This API is used to unbind an access control policy from an API.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/acl-bindings/{acl_bindings_id}

Table 4-655 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
acl_bindings_id	Yes	String	Binding ID.

Request Parameters

Table 4-656 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-657 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-658 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-659** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-660** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-661** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3010",
  "error_msg" : "The access control policy binding record does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.13.3 Unbinding Multiple Access Control Policies from APIs

Function

Unbinding Multiple Access Control Policies from APIs

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/acl-bindings

Table 4-662 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-663 Query parameters

Parameter	Mandatory	Type	Description
action	Yes	String	The value must be delete.

Request Parameters

Table 4-664 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-665 Request body parameters

Parameter	Mandatory	Type	Description
acl_bindings	No	Array of strings	Access control policy binding records to be canceled.

Response Parameters

Status code: 200

Table 4-666 Response body parameters

Parameter	Type	Description
success_count	Integer	Number of access control policies that have been successfully unbound from the API.

Parameter	Type	Description
failure	Array of AclBindingBatchFailure objects	Error message and access control policies that fail to be unbound.

Table 4-667 AclBindingBatchFailure

Parameter	Type	Description
bind_id	String	ID of a binding record that fails to be canceled.
error_code	String	Error code displayed for a binding failure.
error_msg	String	Error message displayed for a binding failure.
api_id	String	ID of an API from which a policy fails to be unbound.
api_name	String	Name of the API from which a policy fails to be unbound.

Status code: 400**Table 4-668** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-669** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-670 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-671** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-672** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "acl-bindings" : [ "332c5db1458a477b89b2ea741fec94a3" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "failure" : [ {
    "bind_id" : "3a68d39f115d4c128fccd6f624ea6109",
    "error_code" : "APIG.3010",
    "error_msg" : "The access control policy binding record does not exist"
  } ],
  "success_count" : 1
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
}
```

```
{
  "error_msg" : "Invalid parameter value: parameter action should be \\\\\"delete\\\\\\\""
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.13.4 Querying APIs Bound with an Access Control Policy

Function

Querying APIs Bound with an Access Control Policy

URI

GET /v2/{project_id}/apic/instances/{instance_id}/acl-bindings/binded-apis

Table 4-673 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-674 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
acl_id	Yes	String	ACL ID.
api_name	No	String	API name.
env_id	No	String	Environment ID.
group_id	No	String	API group ID.

Request Parameters

Table 4-675 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-676** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of AclBindApiInfo objects	API list.

Table 4-677 AclBindApiInfo

Parameter	Type	Description
api_id	String	API ID.
api_name	String	API name.
group_name	String	API group name.
api_type	String	API type.
api_remark	String	API description.
env_id	String	ID of the environment in which the API takes effect.
env_name	String	Name of the environment in which the API takes effect.
bind_id	String	Binding ID.
bind_time	String	Time when the policy is bound to the API.
publish_id	String	API publication record ID.

Status code: 400**Table 4-678** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-679** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-680** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-681** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-682 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "apis" : [ {
    "api_id" : "5f918d104dc84480a75166ba99efff21",
    "api_name" : "Api_http",
    "group_name" : "api_group_001",
    "api_type" : 1,
    "api_remark" : "Web backend Api",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name" : "RELEASE",
    "bind_id" : "332c5db1458a477b89b2ea741fec94a3",
    "bind_time" : "2020-08-04T08:58:03Z",
    "publish_id" : "40e7162dc6b94bbbb1a60d2a24b1b0c"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3006",
  "error_msg" : "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"
}
```

Status code: 500**Internal Server Error**

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.13.5 Querying APIs Not Bound with an Access Control Policy

Function

This API is used to query the published APIs to which an access control policy has not been bound.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/acl-bindings/unbinded-apis

Table 4-683 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-684 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
acl_id	Yes	String	Access control policy ID.
api_id	No	String	API ID.
api_name	No	String	API name.
env_id	No	String	Environment ID.
group_id	No	String	API group ID.

Request Parameters

Table 4-685 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-686 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of UnbindApiForAcl objects	API list.

Table 4-687 UnbindApiForAcl

Parameter	Type	Description
auth_type	String	Security authentication mode.
run_env_name	String	Name of the environment in which the API has been published.
group_name	String	API group name.
publish_id	String	Publication record ID.
group_id	String	ID of the API group to which the API belongs.
name	String	API name.
remark	String	API description.
run_env_id	String	ID of the environment in which the API has been published.
id	String	API ID.
req_uri	String	API request address.
type	Integer	API type.
acl_name	String	Name of the same type of access control policy that has been bound to the API.

Status code: 400

Table 4-688 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-689** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-690** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-691** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-692** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "apis" : [ {
    "name" : "Api_mock",
    "type" : 1,
    "remark" : "Mock backend API",
    "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
    "id" : "3a955b791bd24b1c9cd94c745f8d1aad",
    "group_name" : "api_group_001",
    "run_env_name" : "RELEASE",
    "run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "publish_id" : "9f27d1dc4f4242a9abf88e563dbfc33d",
    "req_uri" : "/test/mock",
    "auth_type" : "IAM"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3006",
  "error_msg" : "Access control policy 7eb619ecf2a24943b099833cd24a01ba does not exist"
}
```

Status code: 500

Internal Server Error


```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.13.6 Querying Access Control Policies Bound to an API

Function

Querying Access Control Policies Bound to an API

URI

GET /v2/{project_id}/apic/instances/{instance_id}/acl-bindings/binded-acls

Table 4-693 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-694 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
api_id	Yes	String	API ID.
env_id	No	String	Environment ID.
env_name	No	String	Environment name.
acl_id	No	String	Access control policy ID.
acl_name	No	String	Access control policy name.

Request Parameters

Table 4-695 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-696 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.

Parameter	Type	Description
acls	Array of ApiBindAclInfo objects	Access control policy list.

Table 4-697 ApiBindAclInfo

Parameter	Type	Description
acl_id	String	Access control policy ID.
acl_name	String	Access control policy name.
entity_type	String	Object type.
acl_type	String	Access control policy type. • PERMIT: whitelist • DENY: blacklist
acl_value	String	Access control objects.
env_id	String	ID of the environment in which the API takes effect.
env_name	String	Name of the environment in which the API takes effect.
bind_id	String	Binding ID.
bind_time	String	Time when the policy is bound to the API.

Status code: 400**Table 4-698** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-699** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 403**Table 4-700** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-701** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-702** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 1,  
  "size" : 1,  
  "acls" : [ {
```

```
{
  "acl_id" : "7eb619ecf2a24943b099833cd24a01ba",
  "acl_name" : "acl_demo",
  "entity_type" : "IP",
  "acl_type" : "PERMIT",
  "acl_value" : "192.168.1.5,192.168.10.1",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "env_name" : "RELEASE",
  "bind_id" : "332c5db1458a477b89b2ea741fec94a3",
  "bind_time" : "2020-08-04T08:58:03Z"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:acl_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.14 API Import and Export

4.14.1 Exporting APIs

Function

This API is used to export API definition information in an API group. The exported file content must comply with the Swagger standard.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/openapi/export

Table 4-703 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-704 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-705 Request body parameters

Parameter	Mandatory	Type	Description
env_id	No	String	ID of the environment in which the API group was published.
group_id	Yes	String	API group ID.
define	No	String	Definition scope of the export API: • spec: basic definition, including only the API frontend definition. • proxy: full definition, including the API frontend and backend definitions. • all: extended definition, including the API frontend and backend definitions, as well as extended definitions such as request throttle, access control, and customized authentication. • dev: development definition, including the frontend and backend definitions of APIs that are not published. Default: spec
type	No	String	Format of the exported API definition. Default: json
version	No	String	Version of the exported API definition. The default value is the current time.

Parameter	Mandatory	Type	Description
apis	No	Array of strings	List of exported API IDs.

Response Parameters

Status code: 200

Table 4-706 Response body parameters

Parameter	Type	Description
-	File	OK

Status code: 400

Table 4-707 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-708 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-709 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-710** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-711** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "define" : "all"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2001",
  "error_msg" : "The request parameters must be specified,parameterName:env_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.14.2 Importing APIs

Function

This API is used to import APIs. The content of the imported file must comply with the Swagger standard. For details about the customized extended fields, see "Appendix: Swagger Extension Definition of Frontend APIs" in the ROMA Connect User Guide.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/openapi/import

Table 4-712 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-713 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-714 FormData parameters

Parameter	Mandatory	Type	Description
is_create_group	No	Boolean	Whether to create a new group. Default: true
group_id	No	String	API group ID. This parameter is mandatory when is_create_group is set to false.
app_id	No	String	Application ID. This parameter is mandatory when is_create_group is set to false and the integration application group is used.

Parameter	Mandatory	Type	Description
extend_mode	No	String	Import mode of extended information. • merge: Retain the original extended information if a conflict occurs. • override: Override the original extended information if a conflict occurs. Default: merge
simple_mode	No	Boolean	Whether to enable fast import. Default: false
mock_mode	No	Boolean	Whether to enable the Mock backend. Default: false
api_mode	No	String	Import mode. • merge: Retain the original API information if a conflict occurs. • override: Override the original API information if a conflict occurs. Default: merge
file_name	Yes	File	Request body in JSON or YAML format for importing APIs

Response Parameters

Status code: 200

Table 4-715 Response body parameters

Parameter	Type	Description
success	Array of Success objects	Import success information.
failure	Array of Failure objects	Import failure information.

Parameter	Type	Description
swagger	Swagger object	Swagger file import result. This parameter is currently not supported.
group_id	String	API group ID.
ignore	Array of Ignore objects	Information about APIs that are ignored during import.

Table 4-716 Success

Parameter	Type	Description
path	String	API request path.
method	String	API request method.
action	String	Import type. • update: Update the APIs in an existing API group. • create: Create APIs for a new API group.
id	String	ID of an imported API.

Table 4-717 Failure

Parameter	Type	Description
path	String	API request path.
error_msg	String	Error message displayed for an import failure.
method	String	API request method.
error_code	String	Error code displayed for an import failure.

Table 4-718 Swagger

Parameter	Type	Description
id	String	Swagger file No.
result	String	Import result description.

Table 4-719 Ignore

Parameter	Type	Description
method	String	API request method.
path	String	API request path.

Status code: 400**Table 4-720** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-721** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-722** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-723** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-724** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "is_create_group" : false,
  "group_id" : "d9ce8c9eede54b3f841ec324fe0bfdc2",
  "file_name" : "APIGroup_test.json"
}
```

Example Responses**Status code: 200**

OK

```
{
  "group_id" : "d9ce8c9eede54b3f841ec324fe0bfdc2",
  "failure" : [ {
    "path" : "/test/demo",
    "error_msg" : "The API already exists, An API with the same combination of the method, path, and x-
apigateway-match-mode fields already exists. API name: API_demo",
    "method" : "GET",
    "error_code" : "APIG.3301"
  } ],
  "success" : [ {
    "path" : "/test",
    "method" : "GET",
    "action" : "create",
    "id" : "8ae6bcafab6f49d78242bff26ad8a4f0"
  } ],
  "swagger" : {
    "swagger_id" : "412488ba965041f9838a5266a5f8e574",
    "result" : "Success"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3201",
  "error_msg" : "The API group name already exists"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.14.3 Exporting Custom Backend APIs

Function

This API is used to export custom backend APIs. The exported file content must comply with the swagger standard.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/openapi/livedata-apis/export

Table 4-725 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-726 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-727 Request body parameters

Parameter	Mandatory	Type	Description
app_id	No	String	ID of the Application to which an API belongs.
format	No	String	Format for exporting API definitions. Default: json
apis	No	Array of strings	List of exported custom backend API IDs.
status	No	Integer	Status of the exported backend API. - 1: pending development - 3: developing - 4: deployed

Response Parameters

Status code: 200

Table 4-728 Response body parameters

Parameter	Type	Description
-	File	OK

Status code: 400**Table 4-729** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-730** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-731** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-732** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-733** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "app_id" : "e311fea0-57d0-462d-b96b-949548adcb67 "
}
```

Example Responses**Status code: 400**

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
  "error_msg" : "API group c77f5e81d9cb4424bf704ef2b0ac7600 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.14.4 Importing Custom Backend APIs

Function

This API is used to import custom backend APIs. The content of the imported file must comply with the Swagger standard. For details about the customized extended fields, see "Appendix: Swagger Extension Definition of Backend APIs" in the ROMA Connect User Guide.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/openapi/livedata-apis/import

Table 4-734 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-735 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-736 FormData parameters

Parameter	Mandatory	Type	Description
extend_mode	No	String	Import mode of extended information. - merge: Retain the original extended information if a conflict occurs. - override: Override the original extended information if a conflict occurs. Default: merge
api_mode	No	String	Import mode. - merge: Retain the original API information if a conflict occurs. - override: Override the original API information if a conflict occurs. Default: merge
file_name	Yes	File	Request body in JSON or YAML format for importing APIs

Response Parameters

Status code: 200

Table 4-737 Response body parameters

Parameter	Type	Description
success	Array of Success objects	Import success information.
failure	Array of Failure objects	Import failure information.
swagger	Swagger object	Swagger file import result. This parameter is currently not supported.

Table 4-738 Success

Parameter	Type	Description
path	String	API request path.
method	String	API request method.
action	String	Import type. • update: Update the APIs in an existing API group. • create: Create APIs for a new API group.
id	String	ID of an imported API.

Table 4-739 Failure

Parameter	Type	Description
path	String	API request path.
error_msg	String	Error message displayed for an import failure.
method	String	API request method.
error_code	String	Error code displayed for an import failure.

Table 4-740 Swagger

Parameter	Type	Description
id	String	Swagger file No.
result	String	Import result description.

Status code: 400**Table 4-741** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-742** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-743** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-744** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-745** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Example Requests

```
{
  "file_name" : "APIGroup_test.json"
}
```

Example Responses

Status code: 200

OK

```
{
  "failure" : [ {
    "path" : "/test/demo",
    "error_msg" : "The backend API already exists",
    "method" : "GET",
    "error_code" : "APIG.3314"
  } ],
  "success" : [ {
    "path" : "/test",
    "method" : "GET",
    "action" : "create",
    "id" : "8ae6bcfab6f49d78242bff26ad8a4f0"
  } ],
  "swagger" : { }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3201",
  "error_msg" : "The API group name already exists"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3001",
}
```



```
{
  "error_msg" : "API group not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15 VPC Channel Management

4.15.1 Creating a VPC Channel

Function

This API is used to create a VPC channel from ROMA Connect APIC to your private VPC resources. Afterwards, when creating an API, you can configure your backend service to use this VPC channel so that ROMA Connect APIC can directly access your private VPC resources.

** NOTE**

You can create a maximum of 30 VPC channels.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/vpc-channels

Table 4-746 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-747 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-748 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Yes	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function

Parameter	Mandatory	Type	Description
port	No	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.
balance_strategy	No	Integer	Distribution algorithm. • 1: WRR • 2: WLC • 3: SH • 4: URI hashing This parameter is required if the VPC channel type is set to 2.
member_type	No	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
members	No	Array of MemberInfo objects	Backend server list. Only one backend server is included if the VPC channel type is set to 1.
vpc_health_config	No	VpcHealthConfig object	Health check details. This parameter is valid only when the VPC channel type is set to 2.

Table 4-749 MemberInfo

Parameter	Mandatory	Type	Description
host	No	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64

Parameter	Mandatory	Type	Description
weight	No	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100
ecs_id	No	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	No	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64

Table 4-750 VpcHealthConfig

Parameter	Mandatory	Type	Description
protocol	Yes	String	Protocol for performing health checks on backend servers in the VPC channel
path	No	String	Destination path for health checks. This parameter is required if protocol is set to http.
method	No	String	Request method for health checks. Default: GET

Parameter	Mandatory	Type	Description
port	No	Integer	Destination port for health checks. By default, the host port of the VPC channel is used. Minimum: 0 Maximum: 65535
threshold_normal	Yes	Integer	Healthy threshold, which refers to the number of consecutive successful checks required for a backend server to be considered healthy. Minimum: 2 Maximum: 10
threshold_abnormal	Yes	Integer	Unhealthy threshold, which refers to the number of consecutive failed checks required for a backend server to be considered unhealthy. Minimum: 2 Maximum: 10
time_interval	Yes	Integer	Interval between consecutive checks. Unit: s. The value must be greater than that of timeout. Minimum: 5 Maximum: 300
http_code	No	String	Response codes for determining a successful HTTP response. The value can be any integer within 100–599 in one of the following formats: Multiple values, for example, 200,201,202 Range, for example, 200-299 Multiple values and ranges, for example, 201,202,210-299. This parameter is required if protocol is set to http.

Parameter	Mandatory	Type	Description
enable_client_ssl	No	Boolean	Whether to enable two-way authentication . If this function is enabled, the certificate specified by backend_client_certificate in the instance configuration is used. Default: false
timeout	No	Integer	Timeout for determining whether a health check fails. Unit: s. The value must be less than that of time_interval. Minimum: 2 Maximum: 30

Response Parameters

Status code: 201

Table 4-751 Response body parameters

Parameter	Type	Description
name	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function
port	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.

Parameter	Type	Description
balance_strategy	Integer	Distribution algorithm. • 1: WRR • 2: WLC • 3: SH • 4: URI hashing This parameter is required if the VPC channel type is set to 2.
member_type	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
create_time	String	Time when the VPC channel is created
id	String	VPC channel ID.
status	Integer	VPC channel status.
elb_id	String	ID of a private network ELB channel. This parameter is valid only when the VPC channel type is set to 1.

Status code: 400**Table 4-752** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-753** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-754** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-755** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-756** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "balance_strategy" : 1,
  "member_type" : "ip",
  "name" : "VPC_demo",
  "port" : 22,
  "type" : 2,
  "vpc_health_config" : {
    "http_code" : "200",
    "path" : "/vpc/demo",
    "port" : 22,
    "protocol" : "http",
    "threshold_abnormal" : 5,
    "threshold_normal" : 2,
    "time_interval" : 10,
    "timeout" : 5,
    "enable_client_ssl" : false
  },
  "members" : [ {
    "host" : "192.168.0.5",
    "weight" : 1
  }, {
    "host" : "192.168.1.124",
    "weight" : 2
  } ]
}
```



```
  }]  
}
```

Example Responses

Status code: 201

Created

```
{  
  "id" : "105c6902457144a4820dff8b1ad63331",  
  "balance_strategy" : 1,  
  "create_time" : "2020-07-23T07:11:57.244829604Z",  
  "member_type" : "ip",  
  "port" : 22,  
  "status" : 1,  
  "name" : "VPC_demo",  
  "type" : 2  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.2001",  
  "error_msg" : "The request parameters must be specified, parameter name:members"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code" : "APIG.1002",  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "APIG.1005",  
  "error_msg" : "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "APIG.3030",  
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15.2 Updating a VPC Channel

Function

This API is used to update the parameters of a VPC channel.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/{vpc_channel_id}

Table 4-757 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Request Parameters

Table 4-758 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-759 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Yes	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function
port	No	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.

Parameter	Mandatory	Type	Description
balance_strategy	No	Integer	Distribution algorithm. • 1: WRR • 2: WLC • 3: SH • 4: URI hashing This parameter is required if the VPC channel type is set to 2.
member_type	No	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
members	No	Array of MemberInfo objects	Backend server list. Only one backend server is included if the VPC channel type is set to 1.
vpc_health_config	No	VpcHealthConfig object	Health check details. This parameter is valid only when the VPC channel type is set to 2.

Table 4-760 MemberInfo

Parameter	Mandatory	Type	Description
host	No	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64

Parameter	Mandatory	Type	Description
weight	No	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100
ecs_id	No	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	No	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64

Table 4-761 VpcHealthConfig

Parameter	Mandatory	Type	Description
protocol	Yes	String	Protocol for performing health checks on backend servers in the VPC channel
path	No	String	Destination path for health checks. This parameter is required if protocol is set to http.
method	No	String	Request method for health checks. Default: GET

Parameter	Mandatory	Type	Description
port	No	Integer	Destination port for health checks. By default, the host port of the VPC channel is used. Minimum: 0 Maximum: 65535
threshold_normal	Yes	Integer	Healthy threshold, which refers to the number of consecutive successful checks required for a backend server to be considered healthy. Minimum: 2 Maximum: 10
threshold_abnormal	Yes	Integer	Unhealthy threshold, which refers to the number of consecutive failed checks required for a backend server to be considered unhealthy. Minimum: 2 Maximum: 10
time_interval	Yes	Integer	Interval between consecutive checks. Unit: s. The value must be greater than that of timeout. Minimum: 5 Maximum: 300
http_code	No	String	Response codes for determining a successful HTTP response. The value can be any integer within 100–599 in one of the following formats: Multiple values, for example, 200,201,202 Range, for example, 200-299 Multiple values and ranges, for example, 201,202,210-299. This parameter is required if protocol is set to http.

Parameter	Mandatory	Type	Description
enable_client_ssl	No	Boolean	Whether to enable two-way authentication . If this function is enabled, the certificate specified by backend_client_certificate in the instance configuration is used. Default: false
timeout	No	Integer	Timeout for determining whether a health check fails. Unit: s. The value must be less than that of time_interval. Minimum: 2 Maximum: 30

Response Parameters

Status code: 200

Table 4-762 Response body parameters

Parameter	Type	Description
name	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function
port	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.

Parameter	Type	Description
balance_strategy	Integer	Distribution algorithm. • 1: WRR • 2: WLC • 3: SH • 4: URI hashing This parameter is required if the VPC channel type is set to 2.
member_type	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
create_time	String	Time when the VPC channel is created
id	String	VPC channel ID.
status	Integer	VPC channel status.
elb_id	String	ID of a private network ELB channel. This parameter is valid only when the VPC channel type is set to 1.

Status code: 400**Table 4-763** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-764** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-765** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-766** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-767** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "balance_strategy" : 2,
  "member_type" : "ip",
  "name" : "VPC_demo",
  "port" : 22,
  "type" : 2,
  "vpc_health_config" : {
    "http_code" : "200",
    "path" : "/vpc/demo",
    "port" : 22,
    "protocol" : "http",
    "threshold_abnormal" : 5,
    "threshold_normal" : 2,
    "time_interval" : 10,
    "timeout" : 5,
    "enable_client_ssl" : false
  },
  "members" : [ {
    "host" : "192.168.0.5",
    "weight" : 1
  }, {
    "host" : "192.168.1.124",
    "weight" : 2
  } ]
}
```

```
  }]  
}
```

Example Responses

Status code: 200

OK

```
{  
  "balance_strategy" : 2,  
  "create_time" : "2020-07-23T07:11:57Z",  
  "member_type" : "ip",  
  "port" : 22,  
  "status" : 1,  
  "name" : "VPC_demo",  
  "type" : 2  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "APIG.2001",  
  "error_msg" : "The request parameters must be specified, parameter name:members"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code" : "APIG.1002",  
  "error_msg" : "Incorrect token or token resolution failed"  
}
```

Status code: 403

Forbidden

```
{  
  "error_code" : "APIG.1005",  
  "error_msg" : "No permissions to request this method"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "APIG.3023",  
  "error_msg" : "The VPC channel does not exist,id:56a7d7358e1b42459c9d730d65b14e59"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "APIG.9999",  
  "error_msg" : "System error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15.3 Deleting a VPC Channel

Function

This API is used to delete a VPC channel.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/{vpc_channel_id}

Table 4-768 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Request Parameters

Table 4-769 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-770 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-771 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-772 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-773 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-774** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3023",
  "error_msg" : "The VPC channel does not exist,id:56a7d7358e1b42459c9d730d65b14e59"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.15.4 Querying Details of a VPC Channel****Function**

This API is used to query the details of a VPC channel.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/{vpc_channel_id}

Table 4-775 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Request Parameters

Table 4-776 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-777** Response body parameters

Parameter	Type	Description
name	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function
port	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.
balance_strategy	Integer	Distribution algorithm. 1: WRR 2: WLC 3: SH 4: URI hashing This parameter is required if the VPC channel type is set to 2.

Parameter	Type	Description
member_type	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
create_time	String	Time when the VPC channel is created
id	String	VPC channel ID.
status	Integer	VPC channel status.
elb_id	String	ID of a private network ELB channel. This parameter is valid only when the VPC channel type is set to 1.
members	Array of VpcMemberInfo objects	Backend server list. Only one backend server is included if the VPC channel type is set to 1.
vpc_health_config	VpcHealthConfigInfo object	Health check details. This parameter is valid only when the VPC channel type is set to 2.

Table 4-778 VpcMemberInfo

Parameter	Type	Description
host	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64
weight	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100

Parameter	Type	Description
ecs_id	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64
id	String	Backend instance object ID.
status	Number	Backend server status. 1: valid
vpc_channel_id	String	VPC channel ID.
create_time	String	Time when the backend server is added to the VPC channel.

Table 4-779 VpcHealthConfigInfo

Parameter	Type	Description
protocol	String	Protocol for performing health checks on backend servers in the VPC channel
path	String	Destination path for health checks. This parameter is required if protocol is set to http.
method	String	Request method for health checks. Default: GET
port	Integer	Destination port for health checks. By default, the host port of the VPC channel is used. Minimum: 0 Maximum: 65535
threshold_normal	Integer	Healthy threshold, which refers to the number of consecutive successful checks required for a backend server to be considered healthy. Minimum: 2 Maximum: 10

Parameter	Type	Description
threshold_abnormal	Integer	Unhealthy threshold, which refers to the number of consecutive failed checks required for a backend server to be considered unhealthy. Minimum: 2 Maximum: 10
time_interval	Integer	Interval between consecutive checks. Unit: s. The value must be greater than that of timeout. Minimum: 5 Maximum: 300
http_code	String	Response codes for determining a successful HTTP response. The value can be any integer within 100–599 in one of the following formats: Multiple values, for example, 200,201,202 Range, for example, 200-299 Multiple values and ranges, for example, 201,202,210-299. This parameter is required if protocol is set to http.
enable_client_ssl	Boolean	Whether to enable two-way authentication . If this function is enabled, the certificate specified by backend_client_certificate in the instance configuration is used. Default: false
timeout	Integer	Timeout for determining whether a health check fails. Unit: s. The value must be less than that of time_interval. Minimum: 2 Maximum: 30
vpc_channel_id	String	VPC channel ID.
id	String	Health check ID.
create_time	String	Creation time.

Status code: 400**Table 4-780** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 401**Table 4-781** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-782** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-783** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-784** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id" : "56a7d7358e1b42459c9d730d65b14e59",
  "balance_strategy" : 1,
  "create_time" : "2020-07-23T07:11:57.244829604Z",
  "member_type" : "ip",
  "port" : 22,
  "status" : 1,
  "name" : "VPC_demo",
  "type" : 2,
  "vpc_health_config" : {
    "create_time" : "2020-07-23T07:11:57Z",
    "http_code" : "200",
    "id" : "3b3d02026c5f402d85e8645ea95b0816",
    "method" : "GET",
    "path" : "/vpc/demo",
    "port" : 22,
    "protocol" : "http",
    "threshold_abnormal" : 5,
    "threshold_normal" : 2,
    "time_interval" : 10,
    "timeout" : 5,
    "enable_client_ssl" : false
  },
  "members" : [ {
    "create_time" : "2020-07-23T07:11:57Z",
    "host" : "192.168.0.5",
    "id" : "be63c6260a1043888187f84af39c9f0e",
    "status" : 1,
    "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
    "weight" : 1
  }, {
    "create_time" : "2020-07-23T07:11:57Z",
    "host" : "192.168.1.124",
    "id" : "a57b13f1b89b417ca8acd76909e6df67",
    "status" : 1,
    "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
    "weight" : 2
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3023",
  "error_msg" : "The VPC channel does not exist,id:56a7d7358e1b42459c9d730d65b14e59"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.15.5 Querying VPC Channels****Function**

This API is used to query the VPC channels.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/vpc-channels

Table 4-785 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-786 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	VPC channel ID.
name	No	String	VPC channel name.
vpc_type	No	Integer	VPC channel type.
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-787 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-788 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
vpc_channels	Array of VpcChannelInfo objects	VPC channel list.

Table 4-789 VpcChannelInfo

Parameter	Type	Description
name	String	VPC channel name. The value is a string of 3 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The value must start with an English letter. NOTE Characters must be encoded using UTF-8 or Unicode.
type	Integer	VPC channel type. 1: private network ELB channel (to be deprecated) 2: fast channel with the load balancing function
port	Integer	Port number of the host in the VPC channel. The value ranges from 1 to 65535. This parameter is valid only if the VPC channel type is 2. This parameter is mandatory only if the VPC channel type is 2.
balance_strategy	Integer	Distribution algorithm. 1: WRR 2: WLC 3: SH 4: URI hashing This parameter is required if the VPC channel type is set to 2.

Parameter	Type	Description
member_type	String	Member type of the VPC channel. • ip • ecs This parameter is required if the VPC channel type is set to 2. Default: ecs
create_time	String	Time when the VPC channel is created
id	String	VPC channel ID.
status	Integer	VPC channel status.
elb_id	String	ID of a private network ELB channel. This parameter is valid only when the VPC channel type is set to 1.

Status code: 400**Table 4-790** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-791** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-792** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404

Table 4-793 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-794 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "vpc_channels" : [ {
    "member_type" : "instance",
    "balance_strategy" : 1,
    "create_time" : "2020-07-23T07:24:33Z",
    "port" : 8080,
    "name" : "channel 1",
    "id" : "105c6902457144a4820dff8b1ad63331",
    "type" : 1,
    "status" : 1
  }, {
    "member_type" : "ip",
    "balance_strategy" : 2,
    "create_time" : "2020-07-23T07:11:57Z",
    "port" : 8088,
    "name" : "channel 2",
    "id" : "56a7d7358e1b42459c9d730d65b14e59",
    "type" : 2,
    "status" : 1
  } ]
}
```

```
"status" : 1
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "The request parameters must be specified,parameterName:name. Please refer to the
support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15.6 Adding Backend Servers

Function

This API is used to add cloud servers to a VPC channel.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/{vpc_channel_id}/members

Table 4-795 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Request Parameters

Table 4-796 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-797 Request body parameters

Parameter	Mandatory	Type	Description
members	Yes	Array of MemberInfo objects	Backend server list.

Table 4-798 MemberInfo

Parameter	Mandatory	Type	Description
host	No	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64
weight	No	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100
ecs_id	No	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	No	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64

Response Parameters

Status code: 201

Table 4-799 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
members	Array of VpcMemberInfo objects	Cloud server list.

Table 4-800 VpcMemberInfo

Parameter	Type	Description
host	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64
weight	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100
ecs_id	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64
id	String	Backend instance object ID.

Parameter	Type	Description
status	Number	Backend server status. 1: valid
vpc_channel_id	String	VPC channel ID.
create_time	String	Time when the backend server is added to the VPC channel.

Status code: 400**Table 4-801** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-802** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-803** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-804 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-805** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

- Adding a cloud server name to a VPC channel

```
{
  "members": [ {
    "host": "192.168.2.25",
    "weight": 1
  } ]
}
```

- Adding a cloud server IP address to a VPC channel

```
{
  "members": [ {
    "ecs_id": "1082720c-3c15-409c-9ae3-4983ddfb6a9d",
    "ecs_name": "APIGtest02",
    "weight": 2
  } ]
}
```

Example Responses

Status code: 201**Created**

- Example 1

```
{
  "total": 1,
  "size": 1,
  "members": [ {
    "create_time": "2020-07-23T09:13:24Z",
    "host": "192.168.2.25",
    "id": "683b6807cad54122a6777ad047a6178e",
    "status": 1,
    "vpc_channel_id": "56a7d7358e1b42459c9d730d65b14e59",
    "weight": 1
  } ]
}
```

- Example 2

```
{
  "total" : 2,
  "size" : 2,
  "members" : [ {
    "create_time" : "2020-07-23T09:03:53Z",
    "host" : "192.168.0.17",
    "id" : "5c868f0224084710a1e188b7d3057c52",
    "ecs_id" : "1082720c-3c15-409c-9ae3-4983ddfb6a9d",
    "ecs_name" : "APIGtest02",
    "status" : 1,
    "vpc_channel_id" : "105c6902457144a4820dff8b1ad63331",
    "weight" : 2
  }, {
    "create_time" : "2020-07-23T07:24:34Z",
    "host" : "192.168.0.39",
    "id" : "33ac0e39d005492eb1f4683e66d1a0d1",
    "ecs_id" : "ebe1104f-1254-4ac6-8ed7-366bec84f36e",
    "ecs_name" : "APIGtest01",
    "status" : 1,
    "vpc_channel_id" : "105c6902457144a4820dff8b1ad63331",
    "weight" : 1
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2004",
  "error_msg" : "The parameter value is outside the allowable range,parameterName:weight. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3023",
  "error_msg" : "The VPC channel does not exist,id:56a7d7358e1b42459c9d730d65b14e59"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
}
```



```
"error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15.7 Querying Backend Servers of a VPC Channel

Function

This API is used to query the backend servers of a VPC channel.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/{vpc_channel_id}/members

Table 4-806 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Table 4-807 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
name	No	String	Cloud server name.

Request Parameters

Table 4-808 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-809 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
members	Array of VpcMemberInfo objects	Cloud server list.

Table 4-810 VpcMemberInfo

Parameter	Type	Description
host	String	Backend server address. This parameter is valid when the member type is IP address. Maximum: 64
weight	Integer	Backend server weight. The higher the weight is, the more requests a cloud server will receive. The weight is only available for the WRR and WLC algorithms. It is valid only when the VPC channel type is set to 2. Minimum: 0 Maximum: 100
ecs_id	String	Backend server ID. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), and underscores (_). Maximum: 255
ecs_name	String	Backend server name. This parameter is valid only when the backend instance type is instance. The value can contain 1 to 64 characters, including letters, digits, hyphens (-), underscores (_), and periods (.). Maximum: 64
id	String	Backend instance object ID.
status	Number	Backend server status. 1: valid
vpc_channel_id	String	VPC channel ID.
create_time	String	Time when the backend server is added to the VPC channel.

Status code: 400**Table 4-811** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 401**Table 4-812** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-813** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-814** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-815** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "members" : [ {
    "create_time" : "2020-07-23T07:11:57Z",
    "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
    "host" : "192.168.0.5",
    "weight" : 1,
    "id" : "be63c6260a1043888187f84af39c9f0e",
    "status" : 1
  }, {
    "create_time" : "2020-07-23T07:11:57Z",
    "vpc_channel_id" : "56a7d7358e1b42459c9d730d65b14e59",
    "host" : "192.168.1.124",
    "weight" : 2,
    "id" : "a57b13f1b89b417ca8acd76909e6df67",
    "status" : 1
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3023",
  "error_msg" : "The VPC channel does not exist,id:56a7d7358e1b42459c9d730d65b14e59"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.15.8 Deleting a Backend Server

Function

This API is used to delete a backend server of a VPC channel.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/vpc-channels/
{vpc_channel_id}/members/{member_id}

Table 4-816 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
vpc_channel_id	Yes	String	VPC channel ID.

Parameter	Mandatory	Type	Description
member_id	Yes	String	Backend instance object ID.

Request Parameters

Table 4-817 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-818 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-819 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-820 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-821** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-822** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3024",
  "error_msg" : "The VPC instance does not exist,id:be63c6260a1043888187f84af39c9f0e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16 Client Configuration

4.16.1 Querying Apps

Function

This API is used to query apps.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps

Table 4-823 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-824 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	App ID.
name	No	String	App name.
status	No	Integer	App status.
app_key	No	String	AppKey.
precise_search	No	String	Parameter name (name) for exact matching.

Request Parameters

Table 4-825 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-826 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apps	Array of AppInfoWithBindNum objects	App list.

Table 4-827 AppInfoWithBindNum

Parameter	Type	Description
id	String	ID.
name	String	Name.
remark	String	Description.
creator	String	Creator of the app. • USER: The app is created by the API user. • MARKET: The app is allocated by the marketplace. The value MARKET is currently not supported.
update_time	String	Update time.
app_key	String	AppKey.
app_secret	String	Key.
register_time	String	Registration time.
status	Integer	Status. • 1: valid
app_type	String	App type. • apig: inventory APIG, which is not recommended. • roma: ROMA integration application

Parameter	Type	Description
roma_app_type	Object	ROMA app type. • subscription: subscription application • integration: integration application
bind_num	Integer	Number of bound APIs.

Status code: 400**Table 4-828** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-829** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-830** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-831** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 500

Table 4-832 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "apps" : [ {
    "bind_num" : 0,
    "creator" : "USER",
    "update_time" : "2020-08-03T13:09:13Z",
    "app_key" : "ee8f878c252747028f07eb116c2cd91b",
    "name" : "app_demo",
    "remark" : "app example",
    "id" : "356de8eb7a8742168586e5daf5339965",
    "app_secret" : "416b6b2a1d394111b9bc1df0e6842ab8",
    "register_time" : "2020-08-03T13:09:13Z",
    "status" : 1,
    "app_type" : "apig"
  }, {
    "bind_num" : 3,
    "creator" : "USER",
    "update_time" : "2020-05-27T10:38:03.133586Z",
    "app_key" : "840b8b5b1efc4ec686639759c2c584da",
    "name" : "app_001",
    "id" : "9ed8b7fe84224de681e7d7a5587e76dc",
    "app_secret" : "0a4e7035e81e424ab4c2c571980d5c6e",
    "register_time" : "2020-03-28T11:09:06Z",
    "status" : 1
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
```

```
{
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.2 Querying Details of an App

Function

This API is used to query the details of an app.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}

Table 4-833 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-834 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-835 Response body parameters

Parameter	Type	Description
id	String	ID.
name	String	Name.
remark	String	Description.

Parameter	Type	Description
creator	String	Creator of the app. • USER: The app is created by the API user. • MARKET: The app is allocated by the marketplace. The value MARKET is currently not supported.
update_time	String	Update time.
app_key	String	AppKey.
app_secret	String	Key.
register_time	String	Registration time.
status	Integer	Status. • 1: valid
app_type	String	App type. • apig: inventory APIG, which is not recommended. • roma: ROMA integration application
roma_app_type	Object	ROMA app type. • subscription: subscription application • integration: integration application

Status code: 400**Table 4-836** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-837** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-838** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-839** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-840** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "creator" : "USER",
  "update_time" : "2020-08-03T13:09:13Z",
  "app_key" : "ee8f878c252747028f07eb116c2cd91b",
  "name" : "app_demo",
  "remark" : "app example",
  "id" : "356de8eb7a8742168586e5daf5339965",
  "app_secret" : "416b6b2a1d394111b9bc1df0e6842ab8",
  "register_time" : "2020-08-03T13:09:13Z",
  "status" : 1,
  "app_type" : "apig"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.3 Creating an AppCode

Function

This API is used to query the details of an AppCode created for an app for simple authentication.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-codes

Table 4-841 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-842 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-843 Request body parameters

Parameter	Mandatory	Type	Description
app_code	Yes	String	AppCode value. An AppCode value contains 64 to 180 characters, including letters and the following special characters are allowed: +_!@#\$/=. The value must start with a letter, plus sign (+), or slash (/). Minimum: 64 Maximum: 180

Response Parameters

Status code: 201

Table 4-844 Response body parameters

Parameter	Type	Description
app_code	String	AppCode value. An AppCode value contains 64 to 180 characters, including letters and the following special characters are allowed: +_!@#\$/=. The value must start with a letter, plus sign (+), or slash (/). Minimum: 64 Maximum: 180
id	String	ID.
app_id	String	Application ID
create_time	String	Creation time.

Status code: 400

Table 4-845 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-846** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-847** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-848** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-849** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "app_code" : "GjOD3g80AABuuFeEIjVQADBlAjBh3UzC7W
+gr4VJBB5BtJ4fdVOQoSvoji3gFxUDb5pWBz9wUcw9+8/bFZ1B/4pq29wCMQC0pQWX6zTndljDEl99As1pw
+WntAU9xcq+ffagoH6zDpKUvdxV6Ezj8LcCcPZN6BU="
}
```

Example Responses

Status code: 201

Created

```
{
  "app_code" : "GjOD3g80AABuuFeElpVQADBLAjBh3UzC7W
+gr4VJBB5BtJ4fdVOQoSvoji3gFxUDb5pWBz9wUcw9+8/bFZ1B/4pq29wCMQC0pQWX6zTndljDEl99As1pw
+WntAU9xcq+ffagoH6zDpKUvdxV6Ezj8LcCcPZN6BU=",
  "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
  "id" : "32dc8ca22d1b4b9cb94022186880576b",
  "create_time" : "2020-07-24T02:37:24.835128293Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.4 Generating an AppCode

Function

This API is used to generate a random AppCode.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-codes

Table 4-850 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-851 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 201**Table 4-852** Response body parameters

Parameter	Type	Description
app_code	String	AppCode value. An AppCode value contains 64 to 180 characters, including letters and the following special characters are allowed: +_!@#\$\$%/. The value must start with a letter, plus sign (+), or slash (/). Minimum: 64 Maximum: 180
id	String	ID.
app_id	String	Application ID
create_time	String	Creation time.

Status code: 400**Table 4-853** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-854 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-855** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-856** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-857** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 201

Created

```
{  
  "app_code" : "fdc8d90a30174460a91ddacfa54d6f04c92e523a85cc4a1894f87cb13b6f572a",  
}
```

```
{
  "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
  "id" : "b3d34f746d0847fb95138670e10207ed",
  "create_time" : "2020-07-24T02:31:45.790909295Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.5 Querying AppCodes of an App

Function

This API is used to query the AppCodes of an app.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-codes

Table 4-858 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Table 4-859 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Request Parameters

Table 4-860 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-861** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
app_codes	Array of AppCodeBaseInfo objects	AppCode list.

Table 4-862 AppCodeBaseInfo

Parameter	Type	Description
app_code	String	AppCode value. An AppCode value contains 64 to 180 characters, including letters and the following special characters are allowed: +_!@#\$\$%/. The value must start with a letter, plus sign (+), or slash (/). Minimum: 64 Maximum: 180
id	String	ID.
app_id	String	Application ID
create_time	String	Creation time.

Status code: 400

Table 4-863 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-864** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-865** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-866** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-867** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "app_codes" : [ {
    "app_code" : "GjOD3g80AABuuFeElpVQADBlAjBh3UzC7W
+gr4VJBB5BtJ4fdVOQoSvoji3gFxUDb5pWBz9wUcw9+8/bFZ1B/4pq29wCMQC0pQWX6zTndljDEl99As1pw
+WntAU9xcq+ffagoH6zDpKUvdxV6Ezj8LcCcPZN6BU=",
    "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
    "id" : "32dc8ca22d1b4b9cb94022186880576b",
    "create_time" : "2020-07-24T02:37:24Z"
  }, {
    "app_code" : "fdc8d90a30174460a91ddacfa54d6f04c92e523a85cc4a1894f87cb13b6f572a",
    "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
    "id" : "b3d34f746d0847fb95138670e10207ed",
    "create_time" : "2020-07-24T02:31:45Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.6 Querying Details of an AppCode

Function

This API is used to query the details of an AppCode created for an app for simple authentication.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-codes/{app_code_id}

Table 4-868 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID
app_code_id	Yes	String	AppCode ID.

Request Parameters

Table 4-869 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 201**Table 4-870** Response body parameters

Parameter	Type	Description
app_code	String	AppCode value. An AppCode value contains 64 to 180 characters, including letters and the following special characters are allowed: +_!@#\$\$%/. The value must start with a letter, plus sign (+), or slash (/). Minimum: 64 Maximum: 180
id	String	ID.
app_id	String	Application ID
create_time	String	Creation time.

Status code: 400**Table 4-871** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-872 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-873** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-874** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-875** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 201

Created

```
{  
  "app_code" : "fdc8d90a30174460a91ddacfa54d6f04c92e523a85cc4a1894f87cb13b6f572a",  
}
```

```
{
  "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
  "id" : "b3d34f746d0847fb95138670e10207ed",
  "create_time" : "2020-07-24T02:31:45Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.7 Deleting an AppCode

Function

This API is used to delete an AppCode. Deleted AppCodes cannot be used for simple authentication.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-codes/{app_code_id}

Table 4-876 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID
app_code_id	Yes	String	AppCode ID.

Request Parameters

Table 4-877 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-878 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-879 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-880 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-881 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-882 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.8 Querying Application Quotas Associated with an Application Quota

Function

This API is used to query the application quota associated with a specified client application.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/bound-quota

Table 4-883 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-884 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-885** Response body parameters

Parameter	Type	Description
app_quota_id	String	Client quota ID.
name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
call_limits	Integer	Maximum number of times a client quota can be called.
time_unit	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Integer	Time limit of a quota.
remark	String	Parameter description. Maximum: 255
reset_time	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
create_time	String	Creation time.
bound_app_num	Integer	Number of applications bound to the quota policy.

Status code: 400

Table 4-886 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-887** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-888** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-889** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-890** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "app_quota_id" : "c900c5612dbe451bb43cbcc49cfaf2f3",
  "call_limits" : 1000,
  "create_time" : "2020-09-19T07:27:47Z",
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00 +0000 +0000",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "App 98df09fb-d459-4cbf-83a7-2b55ca6f3d5d does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.9 Configuring Access Control for an App

Function

This API is used to configure access control for a client configuration.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-acl

Table 4-891 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-892 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-893 Request body parameters

Parameter	Mandatory	Type	Description
app_acl_type	Yes	String	Access control type. • PERMIT (whitelist) • DENY (blacklist)
app_acl_values	Yes	Array of strings	ACL policy value. The value can be an IP address, IP address segment, or CIDR block. Use hyphens (-) to separate IP address segments.

Response Parameters

Status code: 201**Table 4-894** Response body parameters

Parameter	Type	Description
app_id	String	App ID.
app_acl_type	String	Access control type. • PERMIT (whitelist) • DENY (blacklist)
app_acl_values	Array of strings	ACL policy value. The value can be an IP address, IP address segment, or CIDR block. Use hyphens (-) to separate IP address segments.

Status code: 400

Table 4-895 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-896** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-897** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-898** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-899** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "app_acl_type" : "PERMIT",
  "app_acl_values" : [ "192.168.0.1", "192.168.0.5-192.168.0.10", "192.168.0.100/28" ]
}
```

Example Responses

Status code: 201

Ok

```
{
  "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
  "app_acl_type" : "PERMIT",
  "app_acl_values" : [ "192.168.0.1", "192.168.0.5-192.168.0.10", "192.168.0.100/28" ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Ok
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.10 Querying Details About App Access Control

Function

This API is used to query the details about the app access control.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-acl

Table 4-900 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-901 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 201**Table 4-902** Response body parameters

Parameter	Type	Description
app_id	String	App ID.
app_acl_type	String	Access control type. • PERMIT (whitelist) • DENY (blacklist)
app_acl_values	Array of strings	ACL policy value. The value can be an IP address, IP address segment, or CIDR block. Use hyphens (-) to separate IP address segments.

Status code: 400**Table 4-903** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-904** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 403**Table 4-905** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-906** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-907** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 201

Created

```
{
  "app_id" : "9ed8b7fe84224de681e7d7a5587e76dc",
  "app_acl_type" : "PERMIT",
  "app_acl_values" : [ "192.168.0.1", "192.168.0.5-192.168.0.10", "192.168.0.100/28" ]
}
```


Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.16.11 Deleting Access Control for an App

Function

This API is used to delete access control for a client configuration.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/app-acl

Table 4-908 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-909 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-910 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-911** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-912** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-913** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-914** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 9ed8b7fe84224de681e7d7a5587e76dc does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17 Client Quota

4.17.1 This API is used to create a client quota.

Function

This API is used to create a client quota.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/app-quotas

Table 4-915 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-916 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-917 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter. Minimum: 3 Maximum: 255
call_limits	Yes	Integer	Maximum number of times a client quota can be called.
time_unit	Yes	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Yes	Integer	Unit of the time interval for throttling.
reset_time	No	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
remark	No	String	Parameter description, which cannot contain < and >. Maximum: 255

Response Parameters

Status code: 201

Table 4-918 Response body parameters

Parameter	Type	Description
app_quota_id	String	Client quota ID.
name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
call_limits	Integer	Maximum number of times a client quota can be called.

Parameter	Type	Description
time_unit	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Integer	Time limit of a quota.
remark	String	Parameter description. Maximum: 255
reset_time	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
create_time	String	Creation time.
bound_app_num	Integer	Number of applications bound to the quota policy.

Status code: 400**Table 4-919** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-920** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-921** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404**Table 4-922** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-923** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "call_limits" : 1000,
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Example Responses

Status code: 201

OK

```
{
  "app_quota_id" : "c900c5612dbe451bb43cbcc49cfaf2f3",
  "call_limits" : 1000,
  "create_time" : "2020-09-19T15:27:47.60571141+08:00",
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Status code: 400

Bad Request


```
{
  "error_code" : "APIG.3325",
  "error_msg" : "The API quota name already exists"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.2 Modifying a Client Quota

Function

Modifying a Client Quota

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}

Table 4-924 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Request Parameters

Table 4-925 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-926 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter. Minimum: 3 Maximum: 255
call_limits	Yes	Integer	Maximum number of times a client quota can be called.

Parameter	Mandatory	Type	Description
time_unit	Yes	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Yes	Integer	Unit of the time interval for throttling.
reset_time	No	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
remark	No	String	Parameter description, which cannot contain < and >. Maximum: 255

Response Parameters

Status code: 200

Table 4-927 Response body parameters

Parameter	Type	Description
app_quota_id	String	Client quota ID.
name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
call_limits	Integer	Maximum number of times a client quota can be called.
time_unit	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Integer	Time limit of a quota.
remark	String	Parameter description. Maximum: 255
reset_time	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.

Parameter	Type	Description
create_time	String	Creation time.
bound_app_num	Integer	Number of applications bound to the quota policy.

Status code: 400**Table 4-928** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-929** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-930** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-931** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-932** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "call_limits" : 1000,
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Example Responses**Status code: 200**

OK

```
{
  "app_quota_id" : "c900c5612dbe451bb43bcc49cfaf2f3",
  "call_limits" : 1000,
  "create_time" : "2020-09-19T07:27:47Z",
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3325",
  "error_msg" : "The API quota name already exists"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "App quota c900c5612dbe451bb43cbcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.3 Delete a Client Quota

Function

This API is used to delete a client quota. When a client quota is deleted, the association between the client quota and client application is also deleted.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}

Table 4-933 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Request Parameters

Table 4-934 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-935 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-936 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-937 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-938** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-939** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support
documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "App quota c900c5612dbe451bb43cbcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.4 Querying Details of a Client Quota

Function

Querying Details of a Client Quota

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}

Table 4-940 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Request Parameters

Table 4-941 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-942 Response body parameters

Parameter	Type	Description
app_quota_id	String	Client quota ID.
name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
call_limits	Integer	Maximum number of times a client quota can be called.
time_unit	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Integer	Time limit of a quota.
remark	String	Parameter description. Maximum: 255

Parameter	Type	Description
reset_time	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
create_time	String	Creation time.
bound_app_num	Integer	Number of applications bound to the quota policy.

Status code: 400**Table 4-943** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-944** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-945** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-946 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-947** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "app_quota_id" : "c900c5612dbe451bb43cbcc49cfaf2f3",
  "call_limits" : 1000,
  "create_time" : "2020-09-19T07:27:47Z",
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00 +0000 +0000",
  "time_interval" : 1,
  "time_unit" : "DAY"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "App quota c900c5612dbe451bb43cbcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.5 Querying Client Quotas

Function

This API is used to query client quotas. Fuzzy query by name is supported.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-quotas

Table 4-948 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-949 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
name	No	String	Client quota name.

Request Parameters

Table 4-950 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-951 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
quotas	Array of AppQuotaInfo objects	Client quota list.

Table 4-952 AppQuotaInfo

Parameter	Type	Description
app_quota_id	String	Client quota ID.
name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
call_limits	Integer	Maximum number of times a client quota can be called.
time_unit	String	Time unit. The options are SECOND (second), MINUTE (minute), HOURE (hour), and DAY (day).
time_interval	Integer	Time limit of a quota.
remark	String	Parameter description. Maximum: 255
reset_time	String	Time when the quota is reset for the first time. If this parameter is not specified, the time is calculated based on the first calling time by default.
create_time	String	Creation time.
bound_app_num	Integer	Number of applications bound to the quota policy.

Status code: 400

Table 4-953 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-954 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-955 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-956 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
```



```
"size" : 1,
"quotas" : [ {
  "app_quota_id" : "c900c5612dbe451bb43cbcc49cfaf2f3",
  "call_limits" : 1000,
  "create_time" : "2020-09-19T07:27:47Z",
  "name" : "ClientQuota_demo",
  "reset_time" : "2020-09-20 00:00:00 +0000 +0000",
  "time_interval" : 1,
  "time_unit" : "DAY"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.6 Binding Client Applications to a Client Quota

Function

Binding Client Applications to a Client Quota

URI

POST /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}/binding-apps

Table 4-957 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Request Parameters

Table 4-958 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-959 Request body parameters

Parameter	Mandatory	Type	Description
app_ids	Yes	Array of strings	Client application ID list.

Response Parameters

Status code: 201

Table 4-960 Response body parameters

Parameter	Type	Description
applies	Array of AppQuotaAppBinding objects	List of client applications bound to client quotas.

Table 4-961 AppQuotaAppBinding

Parameter	Type	Description
app_quota_id	String	Client quota ID.
app_id	String	Client application ID.
bound_time	String	Time when the policy is bound to the API.

Status code: 400

Table 4-962 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-963 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-964 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-965** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-966** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "app_ids" : [ "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d" ]
}
```

Example Responses

Status code: 201

OK

```
{
  "applies" : [ {
    "app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "app_quota_id" : "c900c5612dbe451bb43cbcc49cfaf2f3",
    "bound_time" : "2020-09-19T07:43:11.948178051Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
}
```

```
{
  "error_msg": "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3093",
  "error_msg": "The App quota c900c5612dbe451bb43cbcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
  "error_msg": "System error"
}
```

Status Codes

Status Code	Description
201	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.7 Unbinding Client Applications from a Client Quota

Function

Unbinding Client Applications from a Client Quota

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}/bound-apps/{app_id}

Table 4-967 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-968 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-969 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-970** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-971** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-972** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-973** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 400**

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "The App quota c900c5612dbe451bb43bcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.8 Querying Client Applications Bound to a Client Quota

Function

This API is used to query client applications bound to a client quota. Fuzzy match by client application name is supported.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}/bound-apps

Table 4-974 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Table 4-975 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_name	No	String	Client application name.

Request Parameters

Table 4-976 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-977** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apps	Array of AppQuotaAppInfo objects	Client application list.

Table 4-978 AppQuotaAppInfo

Parameter	Type	Description
app_id	String	Client application ID.
name	String	Client application name.
status	Integer	Status of the client application. 1: enabled 2: disabled
app_key	String	Client application key.
remark	String	Client application description.
register_time	String	Creation time.
update_time	String	Update time.
app_quota_id	String	Client quota ID.

Parameter	Type	Description
app_quota_name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
bound_time	String	Time when the policy is bound to the API.

Status code: 400**Table 4-979** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-980** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-981** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-982** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 500

Table 4-983 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "apps" : [ {
    "app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "app_key" : "9b93db07-4634-4b7a-99d8-869933ed055d",
    "app_quota_name" : "ClientQuota_demo",
    "bound_time" : "2020-09-19T07:43:11Z",
    "name" : "app-demo",
    "register_time" : "2020-09-18T09:25:19Z",
    "status" : 1,
    "update_time" : "2020-09-18T09:25:19Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404**Not Found**

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "The App quota c900c5612dbe451bb43bcc49cfaf2f3 does not exist"
}
```

Status code: 500**Internal Server Error**

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.17.9 Querying Client Applications Available for Being Bound to a Client Quota

Function

This API is used to query client applications that are available for being bound to a client quota. Fuzzy search by client application name is supported.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-quotas/{app_quota_id}/bindable-apps

Table 4-984 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_quota_id	Yes	String	Client quota ID.

Table 4-985 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_name	No	String	Application name.

Request Parameters

Table 4-986 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-987 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apps	Array of AppQuotaAppInfo objects	Client application list.

Table 4-988 AppQuotaAppInfo

Parameter	Type	Description
app_id	String	Client application ID.
name	String	Client application name.
status	Integer	Status of the client application. 1: enabled 2: disabled
app_key	String	Client application key.
remark	String	Client application description.
register_time	String	Creation time.
update_time	String	Update time.
app_quota_id	String	Client quota ID.
app_quota_name	String	Quota name. The value contains 3 to 255 characters, including letters, digits, and underscores (_). The value must start with a letter.
bound_time	String	Time when the policy is bound to the API.

Status code: 400**Table 4-989** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-990** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-991** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-992** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-993** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "total" : 1,
  "size" : 1,
  "apps" : [ {
    "app_id" : "ac18a23f-8f06-40ac-8093-f790de2ba95b",
    "app_key" : "ac18a23f-8f06-40ac-8093-f790de2ba95b",
    "bound_time" : "0001-01-01T00:00:00Z",
    "name" : "app-test",
    "register_time" : "2020-08-22T07:57:01Z",
    "status" : 1,
    "update_time" : "2020-08-22T07:57:01Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3093",
  "error_msg" : "The App quota c900c5612dbe451bb43cbcc49cfaf2f3 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18 App Authorization Management

4.18.1 Authorizing Apps

Function

An app cannot access any APIs after being created. To access an API in a specific environment, bind the app to the API in the environment. After this operation, the app can access the API in the environment.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/app-auths

Table 4-994 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-995 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-996 Request body parameters

Parameter	Mandatory	Type	Description
env_id	Yes	String	ID of the environment in which the apps will be authorized. Minimum: 1 Maximum: 65
app_ids	Yes	Array of strings	App IDs
api_ids	Yes	Array of strings	API list. You can specify both self-developed and purchased APIs.
auth_tunnel	No	String	Authorization channel type. • GREEN: green channel • NORMAL: non-green channel The green channel can be enabled when the green_tunnel feature is enabled. If this field is left blank, the green channel is not used by default. Default: NORMAL
auth_whitelist	No	Array of strings	Green channel authorization whitelist. IP addresses in the whitelist can be accessed without authentication information. This parameter takes effect when auth_tunnel is set to GREEN.

Parameter	Mandatory	Type	Description
auth_blacklist	No	Array of strings	Green channel authorization whitelist. This parameter is valid when auth_tunnel is set to GREEN.
visit_params	No	Array of ApiAuthVisitParam objects	List of access parameters.

Table 4-997 ApiAuthVisitParam

Parameter	Mandatory	Type	Description
api_id	Yes	String	ID of the environment in which the apps will be authorized.
app_id	No	String	ID of the app to be authorized.
visit_param	Yes	String	Access parameters. The value can contain letters, digits, underscores (_), and hyphens (-). Multiple parameters are separated by commas (,). Each parameter must end with a letter or digit and must be unique. The length of a single parameter cannot exceed 255 characters.

Response Parameters

Status code: 201

Table 4-998 Response body parameters

Parameter	Type	Description
auths	Array of ApiAuthRelations objects	App authorization record list.

Table 4-999 ApiAuthRelations

Parameter	Type	Description
api_id	String	API ID.
auth_result	AuthResult object	Authorization result.
auth_time	String	Authorization time.
id	String	Authorization record ID.
app_id	String	App ID.
auth_role	String	Authorizer. • PROVIDER: API provider • CONSUMER: API user
auth_tunnel	String	Authorization channel type. • GREEN: green channel • NORMAL: non-green channel If this field is left blank, the green channel is not used by default. Default: NORMAL
auth_whitelist	Array of strings	Green channel authorization whitelist. IP addresses in the whitelist can access APIs without being authenticated.
auth_blacklist	Array of strings	Authorization blacklist for the green channel.
visit_params	String	Access parameters.

Table 4-1000 AuthResult

Parameter	Type	Description
status	String	Authorization result. • SUCCESS • SKIPPED • FAILED
error_msg	String	Error message displayed for an authentication failure.
error_code	String	Error code displayed for an authentication failure.
api_name	String	Name of the API for which authorization fails.

Parameter	Type	Description
app_name	String	Name of the API for which authorization fails.

Status code: 400**Table 4-1001** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1002** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1003** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1004** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-1005 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "app_ids" : [ "356de8eb7a8742168586e5daf5339965" ],
  "api_ids" : [ "5f918d104dc84480a75166ba99efff21" ]
}
```

Example Responses

Status code: 201

Created

```
{
  "auths" : [ {
    "api_id" : "5f918d104dc84480a75166ba99efff21",
    "auth_result" : {
      "status" : "SUCCESS"
    },
    "auth_time" : "22020-08-04T04:02:22.482227344Z",
    "id" : "dd29b33ae4394e3b924b582c6b40880b",
    "app_id" : "356de8eb7a8742168586e5daf5339965",
    "auth_role" : "PROVIDER",
    "auth_tunnel" : "NORMAL"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:api_ids. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18.2 Canceling Authorization

Function

This API is used to cancel the authorization of an app for accessing an API. After this operation, the app can no longer call the API.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/app-auths/{app_auth_id}

Table 4-1006 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_auth_id	Yes	String	Authorization ID.

Request Parameters

Table 4-1007 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-1008 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1009 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1010 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1011** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1012** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3009",
  "error_msg" : "The app authorization record does not exist,id:dd29b33ae4394e3b924b582c6b40880b"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18.3 Querying APIs Bound with an App

Function

This API is used to query the APIs to which a specified app has been bound.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-auths/bind-ed-apis

Table 4-1013 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1014 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_id	Yes	String	Application ID
api_id	No	String	API ID.
api_name	No	String	API name.
group_id	No	String	API group ID.
group_name	No	String	API group name.
env_id	No	String	ID of the environment in which the app has been authorized.

Request Parameters

Table 4-1015 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1016** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
auths	Array of ApiAuthInfo objects	API list.

Table 4-1017 ApiAuthInfo

Parameter	Type	Description
id	String	Authorization record ID.
api_id	String	API ID.
api_name	String	API name.
group_name	String	Name of the API group to which the API belongs.
api_type	Integer	API type.
api_remark	String	API description.
env_id	String	ID of the environment in which the app has been authorized to call the API.
auth_role	String	Authorizer.
auth_time	String	Authorization time.
app_name	String	App name.

Parameter	Type	Description
app_remark	String	App description.
app_type	String	App type. - apig: inventory APIC client. New instances do not support this type. - roma: ROMA integration client.
app_creator	String	Creator of the app. - USER: The app is created by the API user. - MARKET: The app is assigned by the API market. This value is not supported currently.
publish_id	String	API publication ID.
group_id	String	ID of the API group to which the API belongs.
auth_tunnel	String	Authorization channel type. - NORMAL: normal channel - GREEN: green channel
auth_whitelist	Array of strings	Whitelist for the green channel.
auth_blacklist	Array of strings	Blacklist for the green channel.
visit_param	String	Access parameters.
roma_app_type	String	ROMA app type. - subscription: subscription application - integration: integration application
env_name	String	Name of the environment in which the app has been authorized to call the API.
app_id	String	App ID.

Status code: 400**Table 4-1018** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1019 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1020** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1021** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1022** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 1,
```

```
"size" : 1,
"auths" : [ {
  "api_id" : "5f918d104dc84480a75166ba99efff21",
  "app_name" : "app_demo",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "env_name" : "RELEASE",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "api_type" : 1,
  "api_name" : "Api_http",
  "app_id" : "356de8eb7a8742168586e5daf5339965",
  "auth_time" : "2020-08-04T04:02:22Z",
  "app_creator" : "USER",
  "id" : "dd29b33ae4394e3b924b582c6b40880b",
  "api_remark" : "Web backend Api",
  "auth_role" : "PROVIDER",
  "app_type" : "apig",
  "auth_tunnel" : "NORMAL",
  "publish_id" : "40e7162dc6b94b94b94b94b94b94b94b"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```


Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18.4 Querying APIs Not Bound with an App

Function

This API is used to query the self-developed and purchased APIs to which an app has not been bound in a specified environment.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-auths/unbinded-apis

Table 4-1023 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1024 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_id	Yes	String	App ID.
env_id	Yes	String	Environment ID.
group_id	No	String	API group ID.
api_id	No	String	API ID.
api_name	No	String	API name.

Request Parameters

Table 4-1025 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1026 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.

Parameter	Type	Description
apis	Array of ApiOutline objects	API list.

Table 4-1027 ApiOutline

Parameter	Type	Description
auth_type	String	Security authentication mode.
run_env_name	String	Name of the environment in which the API has been published.
group_name	String	API group name.
publish_id	String	Publication record ID.
group_id	String	ID of the API group to which the API belongs.
name	String	API name.
remark	String	API description.
run_env_id	String	ID of the environment in which the API has been published.
id	String	API ID.
req_uri	String	API request address.

Status code: 400

Table 4-1028 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1029 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 403**Table 4-1030** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1031** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1032** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 2,  
  "size" : 2,  
  "apis" : [ {
```

```
"auth_type" : "APP",
"run_env_name" : "",
"group_name" : "api_group_001",
"publish_id" : "",
"group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
"name" : "Api_function",
"remark" : "FunctionGraph backend API",
"run_env_id" : "",
"id" : "abd9c4b2ff974888b0ba79be7e6b2763",
"req_uri" : "/test/function"
}, {
"auth_type" : "APP",
"run_env_name" : "RELEASE",
"group_name" : "APIGroup_d3da",
"publish_id" : "ca2631e233a74a758744ae1e19cc5ad7",
"group_id" : "6acd94abe58747ee8a73b10c70817bac",
"name" : "API_test",
"remark" : "FunctionGraph backend API",
"run_env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
"id" : "11cbec3a7a8345ca981b86d161bc436e",
"req_uri" : "/appcode"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18.5 Querying APIs with Path Conflicts in an App

Function

This API is used to query the APIs with path conflicts in a specified app.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-auths/duplicate-apis

Table 4-1033 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1034 Query parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	App ID.

Request Parameters

Table 4-1035 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1036** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of ApiDuplicationInfo objects	API list of all path conflicts in the application.

Table 4-1037 ApiDuplicationInfo

Parameter	Type	Description
req_method	String	Request method.
req_uri	String	Access address of the API.
match_mode	String	Route matching mode. - SWA: prefix match - NORMAL: exact match The default value is NORMAL.
duplicated_apis	Array of DuplicateApiInfo objects	List of conflicting APIs in the path.

Table 4-1038 DuplicateApiInfo

Parameter	Type	Description
api_id	String	API ID
api_name	String	API name.
group_name	String	Group name.
group_id	String	API group ID.
remark	String	API description.
api_type	String	API type. • self-owned: self-owned API • authorized: authorized API

Status code: 400**Table 4-1039** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1040** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1041** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-1042 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-1043 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "size": 1,
  "apis": [ {
    "req_uri": "/test/function",
    "req_method": "GET",
    "match_mode": "NORMAL",
    "duplicated_apis": [ {
      "api_id": "e25fcb255a664e80aa40759d37d043e9",
      "api_name": "api_demo",
      "group_id": "86d75a6b1d6c4cca99e1bed795074167",
      "group_name": "DEFAULT",
      "api_type": "self-owned"
    }, {
      "api_id": "d41f91f14ecc476fa9bdef54afb37f06",
      "api_name": "api_demo_duplicate",
      "group_id": "c3053da9dcd54ffba3bf6e0fb7721a82",
      "group_name": "EchoDemo",
      "api_type": "self-owned"
    } ]
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2012",
```

```
{
  "error_msg" : "Invalid parameter value,parameterName:api_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3004",
  "error_msg" : "App 356de8eb7a8742168586e5daf5339965 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.18.6 Querying Apps Bound to an API

Function

This API is used to query the apps that have been bound to a specified API.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/app-auths/binded-apps

Table 4-1044 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1045 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
api_id	No	String	API ID.
app_name	No	String	App name.
app_id	No	String	App ID.
env_id	No	String	Environment ID.

Request Parameters

Table 4-1046 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1047** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
auths	Array of ApiAuthInfo objects	API list.

Table 4-1048 ApiAuthInfo

Parameter	Type	Description
id	String	Authorization record ID.
api_id	String	API ID.
api_name	String	API name.
group_name	String	Name of the API group to which the API belongs.
api_type	Integer	API type.
api_remark	String	API description.
env_id	String	ID of the environment in which the app has been authorized to call the API.
auth_role	String	Authorizer.
auth_time	String	Authorization time.
app_name	String	App name.

Parameter	Type	Description
app_remark	String	App description.
app_type	String	App type. - apig: inventory APIC client. New instances do not support this type. - roma: ROMA integration client.
app_creator	String	Creator of the app. - USER: The app is created by the API user. - MARKET: The app is assigned by the API market. This value is not supported currently.
publish_id	String	API publication ID.
group_id	String	ID of the API group to which the API belongs.
auth_tunnel	String	Authorization channel type. - NORMAL: normal channel - GREEN: green channel
auth_whitelist	Array of strings	Whitelist for the green channel.
auth_blacklist	Array of strings	Blacklist for the green channel.
visit_param	String	Access parameters.
roma_app_type	String	ROMA app type. - subscription: subscription application - integration: integration application
env_name	String	Name of the environment in which the app has been authorized to call the API.
app_id	String	App ID.

Status code: 400**Table 4-1049** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1050 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1051** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1052** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1053** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 1,
```

```
"size" : 1,
"auths" : [ {
  "api_id" : "5f918d104dc84480a75166ba99efff21",
  "app_name" : "app_demo",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "env_name" : "RELEASE",
  "group_id" : "c77f5e81d9cb4424bf704ef2b0ac7600",
  "group_name" : "api_group_001",
  "api_type" : 1,
  "api_name" : "Api_http",
  "app_id" : "356de8eb7a8742168586e5daf5339965",
  "auth_time" : "2020-08-04T04:02:22Z",
  "app_creator" : "USER",
  "id" : "dd29b33ae4394e3b924b582c6b40880b",
  "api_remark" : "Web backend Api",
  "auth_role" : "PROVIDER",
  "app_type" : "apig",
  "auth_tunnel" : "NORMAL"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:app_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 5f918d104dc84480a75166ba99efff21 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19 Custom Backend Management

4.19.1 Creating a Backend API

Function

This API is used to create a backend API in an instance.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis

Table 4-1054 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-1055 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1056 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	Yes	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	Yes	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	No	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	Yes	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	Yes	String	Type of the returned backend API. Default: json

Parameter	Mandatory	Type	Description
api_signature_id	No	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	Yes	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	No	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	No	Array of LdApiParameter objects	Request parameter list of the backend API.

Table 4-1057 LdApiParameter

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	Yes	String	Parameter location.
default	No	String	Default value. Maximum: 4000

Parameter	Mandatory	Type	Description
description	No	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	No	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Response Parameters

Status code: 201

Table 4-1058 Response body parameters

Parameter	Type	Description
name	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_-]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json

Parameter	Type	Description
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1059 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. - If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. - If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. - Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1060 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_prepar estatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1061** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1062** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1063** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1064** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1065** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "content_type": "json",
  "method": "GET",
  "name": "livedata_api_demo",
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "version": "1.0.1"
}
```

Example Responses**Status code: 201**

Created

```
{
  "content_type": "json",
  "created_time": "2020-09-18T09:25:59Z",
  "description": "",
  "id": "bd42841c20184da6bbf457c6d8a06e37",
  "instance": "f0fa1789-3b76-433b-a787-9892951c620e",
  "method": "GET",
  "modified_time": "2020-09-18T09:25:59Z",
  "name": "livedata_api_demo",
  "parameters": [ ],
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "scripts": [ ],
  "status": 1,
  "type": "",
  "version": "1.0.1"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2011",
  "error_msg": "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.19.2 Modifying a Backend API

Function

This API is used to update backend API parameters in an instance.

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}

Table 4-1066 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1067 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1068 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	Yes	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_-]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	Yes	String	Backend API request method, which can be GET, PUT, POST, or DELETE.

Parameter	Mandatory	Type	Description
description	No	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	Yes	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	Yes	String	Type of the returned backend API. Default: json
api_signature_id	No	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	Yes	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	No	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	No	Array of LdApiParameter objects	Request parameter list of the backend API.

Table 4-1069 LdApiParameter

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	Yes	String	Parameter location.
default	No	String	Default value. Maximum: 4000

Parameter	Mandatory	Type	Description
description	No	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	No	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Response Parameters

Status code: 200

Table 4-1070 Response body parameters

Parameter	Type	Description
name	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_-]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json

Parameter	Type	Description
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1071 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1072 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_prepar estatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1073** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1074** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1075** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1076** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1077** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "content_type": "json",
  "method": "GET",
  "name": "livedata_api_demo",
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "version": "1.0.1"
}
```

Example Responses**Status code: 200**

OK

```
{
  "content_type": "json",
  "created_time": "2020-09-18T09:25:59Z",
  "description": "",
  "id": "bd42841c20184da6bbf457c6d8a06e37",
  "instance": "f0fa1789-3b76-433b-a787-9892951c620e",
  "method": "GET",
  "modified_time": "2020-09-18T09:25:59Z",
  "name": "livedata_api_demo",
  "parameters": [ ],
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "scripts": [ ],
  "status": 1,
  "type": "",
  "version": "1.0.1"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2011",
  "error_msg": "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.19.3 Deleting a Backend API****Function**

This API is used to delete a backend API from an instance.

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}

Table 4-1078 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1079 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-1080 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1081 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1082 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1083** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1084** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support
documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.4 Querying Details of a Backend API

Function

This API is used to query details of a backend API.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}

Table 4-1085 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1086 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1087 Response body parameters

Parameter	Type	Description
name	String	Backend API name. The regular expression is <code>([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}</code> . Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is <code>(/)((/[a-zA-Z0-9_-]+)+/?)</code> , and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.

Parameter	Type	Description
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.

Parameter	Type	Description
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1088 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1089 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_prepar estatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1090** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1091** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1092** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1093** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1094** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "content_type": "json",
  "created_time": "2020-09-18T09:25:59Z",
  "description": "",
  "id": "bd42841c20184da6bbf457c6d8a06e37",
  "instance": "f0fa1789-3b76-433b-a787-9892951c620e",
  "method": "GET",
  "modified_time": "2020-09-18T09:25:59Z",
  "name": "livedata_api_demo",
  "parameters": [ ],
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "scripts": [ ],
  "status": 1,
  "type": "",
  "version": "1.0.1"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2011",
  "error_msg": "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
}
```

```
{
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.5 Querying Backend APIs

Function

This API is used to obtain all backend APIs of an instance.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/livedata-apis

Table 4-1095 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1096 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_id	No	String	ID of the integration application to which the backend API belongs.
app_name	No	String	Name of the integration application to which the backend API belongs.
name	No	String	Backend API name.
status	No	String	Backend API status. The value can be 1, 3, or 4, indicating to be developed, developing, and deployed, respectively.
path	No	String	Backend API request path.
precise_search	No	String	Parameter to be precisely queried. The value can be name, path, or status.

Request Parameters

Table 4-1097 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1098** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
apis	Array of LdApiInfo objects	API list.

Table 4-1099 LdApiInfo

Parameter	Type	Description
name	String	Backend API name. The regular expression is <code>([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}</code> . Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is <code>(/)((/[a-zA-Z0-9_-]+)+/?)</code> , and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.

Parameter	Type	Description
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.

Parameter	Type	Description
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1100 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1101 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_preparstatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1102** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1103** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1104** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1105** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1106** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "total" : 1,
  "size" : 1,
  "apis" : [ {
    "content_type" : "json",
    "created_time" : "2020-09-18T09:25:59Z",
    "description" : "",
    "id" : "bd42841c20184da6bbf457c6d8a06e37",
    "instance" : "f0fa1789-3b76-433b-a787-9892951c620e",
    "method" : "GET",
    "modified_time" : "2020-09-18T09:37:28Z",
    "name" : "livedata_api_demo",
    "parameters" : [ ],
    "path" : "/test/function",
    "return_format" : false,
    "roma_app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "roma_app_name" : "app-demo",
    "scripts" : [ ],
    "status" : 1,
    "type" : "",
    "version" : "1.0.1"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.19.6 Creating a Backend API Script

Function

This API is used to create a backend API script in an instance.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/scripts

Table 4-1107 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1108 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1109 Request body parameters

Parameter	Mandatory	Type	Description
api_type	No	String	API type. • data: a data API • function: a function API
scripts	No	Array of LdApiScriptBase objects	API script information list.

Table 4-1110 LdApiScriptBase

Parameter	Mandatory	Type	Description
ds_id	No	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	No	String	Data source name.

Parameter	Mandatory	Type	Description
ds_type	No	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	No	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	No	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	Yes	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000

Parameter	Mandatory	Type	Description
enable_result_paging	No	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_preparstatement	No	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false

Response Parameters

Status code: 200

Table 4-1111 Response body parameters

Parameter	Type	Description
name	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_-]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64

Parameter	Type	Description
content_type	String	Type of the returned backend API. Default: json
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1112 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1113 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_prepar estatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1114** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1115** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1116** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1117** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1118** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "api_type": "function",
  "scripts": [ {
    "type": "SQL",
    "object_name": "fun",
    "content": "ZnVuY3Rpb24gZXhly3V0ZShkYXRhKSB7CiAgICByZXR1cm4gIkhlbGxvIHdvcmxkISIKfQ=="
  } ]
}
```

Example Responses**Status code: 200**

OK

```
{
  "content_type": "json",
  "created_time": "2020-09-18T09:25:59Z",
  "description": "",
  "id": "bd42841c20184da6bbf457c6d8a06e37",
  "instance": "f0fa1789-3b76-433b-a787-9892951c620e",
  "method": "GET",
  "modified_time": "2020-09-18T09:25:59Z",
  "name": "livedata_api_demo",
  "parameters": [ ],
  "path": "/test/function",
  "return_format": false,
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "scripts": [ {
    "type": "SQL",
    "object_name": "fun",
    "content": "ZnVuY3Rpb24gZXhly3V0ZShkYXRhKSB7CiAgICByZXR1cm4gIkhlbGxvIHdvcmxkISIKfQ==",
    "created_time": "2020-09-19T06:29:35Z",
    "modified_time": "2020-09-19T06:29:35Z"
  } ],
  "status": 1,
  "type": "function",
  "version": "1.0.1"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2011",
  "error_msg": "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.7 Testing a Backend API

Function

This API is used to test whether a backend API is available.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/test

Table 4-1119 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1120 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1121 Request body parameters

Parameter	Mandatory	Type	Description
parameters	No	Array of LdApiParameter objects	Backend API request parameters.

Table 4-1122 LdApiParameter

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	Yes	String	Parameter location.
default	No	String	Default value. Maximum: 4000

Parameter	Mandatory	Type	Description
description	No	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	No	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Response Parameters

Status code: 200

Table 4-1123 Response body parameters

Parameter	Type	Description
test_status_code	String	Returned status code.
test_request	String	Request method.
test_used_time	Integer	Test duration.
test_operator	String	Project ID of the tester.
test_response	String	Test response content.
test_method	String	Request method.
test_id	Integer	Test ID.
test_date	String	Test time.
ld_api_id	String	Backend API ID.
debug_log	Array of strings	Test log list.

Status code: 400

Table 4-1124 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 401**Table 4-1125** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1126** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1127** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1128** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "parameter" : [ {
    "name" : "header",
    "in" : "Headers",
    "required" : false,
    "default" : "test"
  } ]
}
```

Example Responses

Status code: 200

OK

```
{
  "ld_api_id" : "bd42841c20184da6bbf457c6d8a06e37",
  "test_date" : "2020-09-19T06:40:52Z",
  "test_id" : 2524356,
  "test_method" : "GET",
  "test_operator" : "73d69ae0cfcf460190522d06b60f05ad",
  "test_request" : "{ \"apiUUID\": \"bd42841c20184da6bbf457c6d8a06e37\", \"method\": \"GET\", \"params\": [ { \"paramDesc\": \"\", \"paramName\": \"header\", \"paramRequired\": \"0\", \"paramType\": \"Headers\", \"paramValue\": \"test\" } ], \"testUrl\": \"/test/function\" }",
  "test_response" : "Hello world!",
  "test_status_code" : "200",
  "test_used_time" : 29,
  "debug_log" : [ "2021-04-20 16:52:47 | 226e613ca72f4997b87def5445dac75c | 111", "2021-04-20 16:52:47 | 226e613ca72f4997b87def5445dac75c | message:bbb" ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

4.19.8 Querying the Backend API Test Result

Function

This API is used to query the test results of a backend API in an instance.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/test

Table 4-1129 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Table 4-1130 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Request Parameters

Table 4-1131 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1132 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
histories	Array of LdApiTestHistoryInfoV2 objects	Test result objects.

Table 4-1133 LdApiTestHistoryInfoV2

Parameter	Type	Description
test_status_code	String	Returned status code.
test_request	String	Request method.
test_used_time	Integer	Test duration.
test_operator	String	Project ID of the tester.
test_response	String	Test response content.
test_method	String	Request method.
test_id	Integer	Test ID.
test_date	String	Test time.
ld_api_id	String	Backend API ID.

Status code: 400

Table 4-1134 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1135 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1136 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404**Table 4-1137** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1138** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "histories" : [ {
    "id_api_id" : "bd42841c20184da6bbf457c6d8a06e37",
    "test_date" : "2020-09-19T06:40:52Z",
    "test_id" : 2524356,
    "test_method" : "GET",
    "test_operator" : "73d69ae0cfcf460190522d06b60f05ad",
    "test_request" : "{\"apiUUID\":\"bd42841c20184da6bbf457c6d8a06e37\",\"method\":\"GET\",\"params\":\n[{\n\"paramDesc\":\"\",\"paramName\":\"header\",\"paramRequired\":\"0\",\"paramType\":\"Headers\n\",\"paramValue\":\"test\"}],\"testUrl\":\"/test/function\"}",
    "test_response" : "Hello world!",
    "test_status_code" : "200",
    "test_used_time" : 29
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.9 Deploying a Backend API

Function

This API is used to deploy a backend API in an instance.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/deploy

Table 4-1139 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1140 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1141 Request body parameters

Parameter	Mandatory	Type	Description
deploy_front_api	No	Boolean	Whether the backend is automatically published as a frontend API. • true: The frontend API is automatically created and published after the backend is deployed. • false: No frontend API is created after the backend is deployed. Default: true
auth_type	No	String	Authentication mode. • NONE • APP • IAM
authorizer_id	No	String	Custom authorizer ID. This parameter is mandatory only if the auth_type is set to AUTHORIZER.
group_id	No	String	ID of the deployed frontend API group.
env_id	No	String	ID of the deployed environment.
protocol	No	String	Request protocol. Default: HTTPS
backend_timeout	No	Integer	Timeout.
path	No	String	Request path.
method	No	String	Request method.
cors	No	Boolean	Whether CORS is supported. • TRUE: supported • FALSE: not supported Default: false
roma_app_id	No	String	ID of the application to which the API deployed on the frontend belongs, which must be the same as the ID of the application to which the backend belongs.

Response Parameters

Status code: 200

Table 4-1142 Response body parameters

Parameter	Type	Description
id	String	Deployment ID.
ld_api_id	String	ID of the deployed backend API.
group_id	String	ID of the deployed frontend API group.
env_id	String	ID of the deployed environment.
api_id	String	ID of the deployed frontend API.
deploy_time	String	Deployment time.
api_definition	LdApiInfo object	Custom backend API details.

Table 4-1143 LdApiInfo

Parameter	Type	Description
name	String	Backend API name. The regular expression is <code>([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}</code> . Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is <code>(/)((/[a-zA-Z0-9_-]+)+/?)</code> , and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000

Parameter	Type	Description
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1144 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1145 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_prepar_estatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1146** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1147** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1148** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1149** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 409**Table 4-1150** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1151** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "auth_type": "APP",
  "authorizer_id": "",
  "backend_timeout": 5000,
  "cors": false,
  "deploy_front_api": true,
  "env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "group_id": "01ce7564a2544713b80c7c08eb85f5d0",
  "method": "GET",
  "path": "/test/function",
  "protocol": "HTTPS",
  "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d"
}
```

Example Responses**Status code: 200**

OK

```
{
  "api_definition": {
    "content_type": "json",
    "created_time": "2020-09-18T09:25:59Z",
    "description": "",
    "id": "bd42841c20184da6bbf457c6d8a06e37",
    "instance": "f0fa1789-3b76-433b-a787-9892951c620e",
    "method": "GET",
    "modified_time": "2020-09-19T06:29:35Z",
    "name": "livedata_api_demo",
    "parameters": [ ],
    "path": "/test/function",
    "return_format": false,
    "roma_app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "roma_app_name": "app-demo",
    "scripts": [ {
```

```
{
  "type": "SQL",
  "object_name": "fun",
  "content": "ZnVuY3Rpb24gZXhlY3V0ZShkYXRhKSB7CiAgICByZXR1cm4gIklhIbGxvIHdvcmxkISIkfQ==",
  "created_time": "2020-09-19T06:29:35Z",
  "modified_time": "2020-09-19T06:29:35Z"
}],
"status": 4,
"type": "function",
"version": "1.0.1"
},
"api_id": "1d0432f1a82a49d08b9308ae7bd96ca6",
"deploy_time": "2020-09-19T06:58:13Z",
"env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
"group_id": "01ce7564a2544713b80c7c08eb85f5d0",
"id": "5e19590f54444d8a9b8fe698ce26e9fe",
"ld_api_id": "bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "APIG.2011",
  "error_msg": "Invalid parameter value,parameterName:auth_type. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3084",
  "error_msg": "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 409

Conflict

```
{
  "error_code": "APIG.3479",
  "error_msg": "the roma app used for deploy must be the same as the roma app of the ld api"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
}
```

```
"error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
409	Conflict
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.10 Querying the Deployment History of a Backend API

Function

This API is used to query the deployment records of a backend API in an instance.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/deploy

Table 4-1152 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1153 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1154** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
histories	Array of LdApiDeployHistoryInfo objects	Test result objects.

Table 4-1155 LdApiDeployHistoryInfo

Parameter	Type	Description
id	String	Deployment ID.
ld_api_id	String	ID of the deployed backend API.
group_id	String	ID of the deployed frontend API group.
env_id	String	ID of the deployed environment.
api_id	String	ID of the deployed frontend API.
deploy_time	String	Deployment time.
api_definition	LdApiInfo object	Custom backend API details.

Table 4-1156 LdApilInfo

Parameter	Type	Description
name	String	Backend API name. The regular expression is ([a-zA-Z][\u4e00-\u9fa5])([a-zA-Z0-9_][\u4e00-\u9fa5]){2,63}. Minimum: 3 Maximum: 100
path	String	Backend API request path. The regular expression is (/)((/[a-zA-Z0-9_-]+)+/?), and the maximum length is 256 characters. Minimum: 2 Maximum: 256
method	String	Backend API request method, which can be GET, PUT, POST, or DELETE.
description	String	Backend API description, which cannot contain < and >. Minimum: 0 Maximum: 1000
version	String	Backend API version, which contains 2 to 16 characters excluding < and >. Minimum: 2 Maximum: 64
content_type	String	Type of the returned backend API. Default: json
api_signature_id	String	ID of the signature key bound to the API for signature authentication Minimum: 1 Maximum: 64
roma_app_id	String	ID of the integration application to which the backend API belongs. Minimum: 1 Maximum: 65
return_format	Boolean	Indicates whether to format the API response information. true: The response information is formatted. false: The response information is not formatted. Default: false

Parameter	Type	Description
parameters	Array of LdApiParameter objects	Request parameter list of the backend API.
id	String	Backend API ID.
instance	String	Backend API owner.
type	String	Backend API type.
status	Integer	Backend API status.
created_time	String	Time when the backend API was created.
modified_time	String	Time when the backend API was modified.
scripts	Array of LdApiScript objects	Backend API script information.
roma_app_name	String	Name of the integration application to which the backend API belongs.

Table 4-1157 LdApiParameter

Parameter	Type	Description
name	String	Parameter name. • If the parameter is located in Headers or Parameters, the value can contain letters, digits, periods (.), hyphens (-), and underscores (_), and must start with a letter. The value is case-insensitive. • If the parameter is located in Body, it is named application/json, application/xml, or application/text. However, the key-value pair in Body is used as the parameter name and parameter value. For example, if the parameter name is application/json and the parameter value is {"table":"apic01","id":"1"}, the backend uses table:apic01 and id:1 as input parameters. • Note: The parameter name must be unique. Otherwise, the parameters will be overwritten. When the parameters in Headers and Parameters are duplicate, the parameters will be overwritten. When the key-value pairs in Parameters and Body are duplicate, the parameters will be overwritten. Minimum: 1 Maximum: 32
in	String	Parameter location.
default	String	Default value. Maximum: 4000
description	String	Parameter description, which cannot contain < and >. Minimum: 0 Maximum: 255
required	Boolean	Whether the parameter is mandatory. true: The parameter is mandatory. false: The parameter is optional. Default: false

Table 4-1158 LdApiScript

Parameter	Type	Description
ds_id	String	Data source ID. This parameter is mandatory only if api_type is set to data.
ds_name	String	Data source name.
ds_type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
type	String	Script type. • SQL: SQL statement • SP: stored procedure
object_name	String	Returned object. This parameter is mandatory only if api_type is set to data. Minimum: 1 Maximum: 32
content	String	API script content. Perform Base64 encoding on the script. Minimum: 1 Maximum: 100000
enable_result_paging	Boolean	Indicates whether to display the data script result on multiple pages. This parameter is mandatory only if api_type is set to data. Default: false
enable_preparstatement	Boolean	Indicates whether to pre-compile the data script. This parameter is mandatory only if api_type is set to data. Default: false
created_time	String	Time when the backend API script was created.

Parameter	Type	Description
modified_time	String	Time when the backend API script was modified.

Status code: 400**Table 4-1159** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1160** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1161** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1162** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1163** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "histories" : {
    "api_id" : "1d0432f1a82a49d08b9308ae7bd96ca6",
    "deploy_time" : "2020-09-28T11:01:09Z",
    "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "group_id" : "01ce7564a2544713b80c7c08eb85f5d0",
    "id" : "abbe44b56eda428d84172343674c9cd6",
    "ld_api_id" : "bd42841c20184da6bbf457c6d8a06e37"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.11 Canceling Deployment of a Backend API

Function

This API is used to cancel the deployment of a backend API in an instance.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/{ld_api_id}/undeploy

Table 4-1164 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.
ld_api_id	Yes	String	Backend API ID.

Request Parameters

Table 4-1165 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-1166 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1167 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1168 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.

Status code: 404**Table 4-1169** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1170** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support
documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3084",
  "error_msg" : "The livedata API does not exist, id: bd42841c20184da6bbf457c6d8a06e37"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.19.12 Verifying the Definition of a Custom Backend API****Function**

This API is used to verify the definition of a custom backend API, that is, whether the API path or name already exists.

URI

POST /v2/{project_id}/apic/instances/{instance_id}/livedata-apis/check

Table 4-1171 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-1172 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1173 Request body parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Verification type. • path: path type • name: name type
ld_api_name	No	String	Name of the custom backend API. This parameter is mandatory when type is set to name.
ld_api_method	No	String	Request method of the custom backend API. This parameter is mandatory when type is set to path.
ld_api_path	No	String	Access address of the custom backend API. This parameter is mandatory when type is set to path.

Parameter	Mandatory	Type	Description
roma_app_id	No	String	Integration application ID. This parameter is mandatory when you need to check whether backend API definitions are duplicate in an integration application.

Response Parameters

Status code: 400

Table 4-1174 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1175 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1176 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-1177 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1178** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "type" : "name",
  "ld_api_name" : "ld_api_demo"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.3215",
  "error_msg" : "The livedata API name already exists"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
}
```

```
{
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.13 Querying the Quota of a Custom Backend Service

Function

This API is used to query the quota of a custom backend service.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/livedata-quota

Table 4-1179 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-1180 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1181** Response body parameters

Parameter	Type	Description
datasource	String	Data source quota.
api	String	Backend API quota.
scripts	String	Script quota.
datasource_used	String	Number of used data sources.
api_used	String	Number of used backend APIs.

Status code: 400**Table 4-1182** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1183** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1184** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1185** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1186** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "api" : "10000",
  "api_used" : "4",
  "datasource" : "3",
  "datasource_used" : "0",
  "scripts" : "5"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
}
```

```
{
  "error_msg": "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3030",
  "error_msg": "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "APIG.9999",
  "error_msg": "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.19.14 Querying Data Sources of a Custom Backend Service

Function

This API is used to query the data sources of a custom backend service.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/data-sources

Table 4-1187 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1188 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_id	Yes	String	Application ID
name	No	String	Data source name.

Request Parameters

Table 4-1189 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1190 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
data_sources	Array of LdDatasourceInfo objects	Data source list.

Table 4-1191 LdDatasourceInfo

Parameter	Type	Description
name	String	Data source name.

Parameter	Type	Description
type	String	Data source type. • oracle: Oracle data source type • mysql: MySQL data source type • mongodb: MongoDB data source type • redis: Redis data source type • postgresql: PostgreSQL data source type • hive: Hive data source type • mssql: SQL Server data source type • sqlserver: SQL Server data source type • gauss200: GaussDB 200 data source type • dws: DWS data source type • gauss100: GaussDB 100 data source type • zenith: zenith data source type
description	String	Data source description.
url	String	Data source connection string.
user	String	Username.
password	String	Password. Sensitive information will not be returned as a response.
remotepath	String	Path on FTP server to which backup files are uploaded. This parameter is reserved.
id	String	Data source ID.
status	String	Data source status. • old: inventory data source • new: ROMA data source
created_time	String	Time when a data source was created.
modified_time	String	Time when a data source was updated.

Status code: 400**Table 4-1192** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1193** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1194** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1195** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1196** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "size" : 1,
  "total" : 1,
  "data-sources" : [ {
    "created_time" : "2020-09-19T07:10:12Z",
    "id" : "b71d74cd5889433bb90083f6fbc3adae",
    "modified_time" : "2020-09-19T07:10:12Z",
    "name" : "fdi_ds_demo",
    "status" : "new",
    "type" : "mysql",
    "url" : "jdbc:mysql://10.10.10.156:3306/apic?allowPublicKeyRetrieval=true&characterEncoding=UTF-8",
    "user" : "apictest"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620ec"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.20 Custom Authorizer Management

4.20.1 Creating a Custom Authorizer

Function

Creating a Custom Authorizer

URI

POST /v2/{project_id}/apic/instances/{instance_id}/authorizers

Table 4-1197 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-1198 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1199 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	Yes	String	Custom authorizer type. • FRONTEND • BACKEND
authorizer_type	Yes	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function
authorizer_uri	Yes	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.
identities	No	Array of Identity objects	Authentication source.
ttl	No	Integer	Cache time.
user_data	No	String	User data.

Parameter	Mandatory	Type	Description
ld_api_id	No	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	No	Boolean	Indicates whether to send request body.

Table 4-1200 Identity

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. Minimum: 0 Maximum: 32
location	Yes	String	Parameter location.
validation	No	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Response Parameters

Status code: 201

Table 4-1201 Response body parameters

Parameter	Type	Description
name	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	String	Custom authorizer type. • FRONTEND • BACKEND
authorizer_type	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function

Parameter	Type	Description
authorizer_uri	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.
identities	Array of Identity objects	Authentication source.
ttl	Integer	Cache time.
user_data	String	User data.
ld_api_id	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	Boolean	Indicates whether to send request body.
id	String	Custom authorizer ID.
create_time	String	Creation time.
roma_app_id	String	ID of the application to which the custom authorizer belongs.
roma_app_name	String	Name of the application to which the custom authorizer belongs.

Table 4-1202 Identity

Parameter	Type	Description
name	String	Parameter name. Minimum: 0 Maximum: 32
location	String	Parameter location.
validation	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Status code: 400

Table 4-1203 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1204** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1205** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1206** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1207** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "Authorizer_demo",
  "type" : "FRONTEND",
  "authorizer_type" : "LD",
  "ld_api_id" : "6f8e61317e4e4fbf8e8220cc19fced9",
  "authorizer_uri" : "/test",
  "identities" : [ {
    "name" : "header",
    "location" : "HEADER"
  } ],
  "ttl" : 5
}
```

Example Responses

Status code: 201

Created

```
{
  "name" : "Authorizer_demo",
  "type" : "FRONTEND",
  "authorizer_type" : "LD",
  "authorizer_uri" : "/test",
  "identities" : [ {
    "name" : "header",
    "location" : "HEADER"
  } ],
  "ttl" : 5,
  "id" : "0d982c1ac3da493dae47627b6439fc5c",
  "create_time" : "2020-09-23T02:32:10.354159293Z",
  "need_body" : true
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:type. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3019",
}
```



```
{
  "error_msg" : "The function URN does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.20.2 Modifying a Custom Authorizer

Function

Modifying a Custom Authorizer

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/authorizers/{authorizer_id}

Table 4-1208 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Parameter	Mandatory	Type	Description
authorizer_id	Yes	String	Custom authorizer ID.

Request Parameters

Table 4-1209 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1210 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	Yes	String	Custom authorizer type. • FRONTEND • BACKEND
authorizer_type	Yes	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function
authorizer_uri	Yes	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.
identities	No	Array of Identity objects	Authentication source.
ttl	No	Integer	Cache time.

Parameter	Mandatory	Type	Description
user_data	No	String	User data.
ld_api_id	No	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	No	Boolean	Indicates whether to send request body.

Table 4-1211 Identity

Parameter	Mandatory	Type	Description
name	Yes	String	Parameter name. Minimum: 0 Maximum: 32
location	Yes	String	Parameter location.
validation	No	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Response Parameters

Status code: 200

Table 4-1212 Response body parameters

Parameter	Type	Description
name	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	String	Custom authorizer type. • FRONTEND • BACKEND

Parameter	Type	Description
authorizer_type	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function
authorizer_uri	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.
identities	Array of Identity objects	Authentication source.
ttn	Integer	Cache time.
user_data	String	User data.
ld_api_id	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	Boolean	Indicates whether to send request body.
id	String	Custom authorizer ID.
create_time	String	Creation time.
roma_app_id	String	ID of the application to which the custom authorizer belongs.
roma_app_name	String	Name of the application to which the custom authorizer belongs.

Table 4-1213 Identity

Parameter	Type	Description
name	String	Parameter name. Minimum: 0 Maximum: 32
location	String	Parameter location.
validation	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Status code: 401

Table 4-1214 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1215** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1216** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1217** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "Authorizer_demo",
  "type" : "FRONTEND",
  "authorizer_type" : "LD",
  "ld_api_id" : "6f8e61317e4e4fbf8e8220cc19fcccd9",
  "authorizer_uri" : "/test",
  "identities" : [ {
    "name" : "header",
    "location" : "HEADER"
  } ],
}
```

```
{
  "ttl" : 5
}
```

Example Responses

Status code: 200

OK

```
{
  "name" : "Authorizer_demo",
  "type" : "FRONTEND",
  "authorizer_type" : "LD",
  "authorizer_uri" : "/test",
  "identities" : [ {
    "name" : "header",
    "location" : "HEADER"
  } ],
  "ttl" : 5,
  "need_body" : true,
  "id" : "0d982c1ac3da493dae47627b6439fc5c",
  "create_time" : "2020-09-23T02:32:10Z",
  "roma_app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "roma_app_name" : "app-demo"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.20.3 Deleting a Custom Authorizer

Function

Deleting a Custom Authorizer

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/authorizers/{authorizer_id}

Table 4-1218 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
authorizer_id	Yes	String	Custom authorizer ID.

Request Parameters

Table 4-1219 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400

Table 4-1220 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1221 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1222 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-1223 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-1224 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.20.4 Querying Details of a Custom Authorizer

Function

Querying Details of a Custom Authorizer

URI

GET /v2/{project_id}/apic/instances/{instance_id}/authorizers/{authorizer_id}

Table 4-1225 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
authorizer_id	Yes	String	Custom authorizer ID.

Request Parameters

Table 4-1226 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1227** Response body parameters

Parameter	Type	Description
name	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	String	Custom authorizer type. • FRONTEND • BACKEND
authorizer_type	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function
authorizer_uri	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.
identities	Array of Identity objects	Authentication source.
ttn	Integer	Cache time.
user_data	String	User data.
ld_api_id	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	Boolean	Indicates whether to send request body.
id	String	Custom authorizer ID.

Parameter	Type	Description
create_time	String	Creation time.
roma_app_id	String	ID of the application to which the custom authorizer belongs.
roma_app_name	String	Name of the application to which the custom authorizer belongs.

Table 4-1228 Identity

Parameter	Type	Description
name	String	Parameter name. Minimum: 0 Maximum: 32
location	String	Parameter location.
validation	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Status code: 400**Table 4-1229** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1230** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403

Table 4-1231 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1232** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1233** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "name" : "Authorizer_demo",
  "type" : "FRONTEND",
  "authorizer_type" : "LD",
  "authorizer_uri" : "/test",
  "identities" : [ {
    "name" : "header",
    "location" : "HEADER"
  } ],
  "ttl" : 5,
  "need_body" : true,
  "id" : "0d982c1ac3da493dae47627b6439fc5c",
  "create_time" : "2020-09-23T02:32:10Z",
  "roma_app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "roma_app_name" : "app-demo"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:type. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.20.5 Querying Custom Authorizers

Function

Querying Custom Authorizers

URI

GET /v2/{project_id}/apic/instances/{instance_id}/authorizers

Table 4-1234 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1235 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
id	No	String	ID.
name	No	String	Name.
type	No	String	Type.

Request Parameters

Table 4-1236 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1237** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
authorizer_list	Array of AuthorizerResp objects	Custom authorizer list.

Table 4-1238 AuthorizerResp

Parameter	Type	Description
name	String	Custom authorizer name. The value contains 3 to 64 characters, including letters, digits, and underscores (_). The value must start with a letter.
type	String	Custom authorizer type. • FRONTEND • BACKEND
authorizer_type	String	Type of the custom authentication function. • LD: custom backend function • FUNC: FunctionGraph function
authorizer_uri	String	Function URN. Note: To use a custom backend function API, the API request method must be POST and the API status must be Deployed.

Parameter	Type	Description
identities	Array of Identity objects	Authentication source.
ttn	Integer	Cache time.
user_data	String	User data.
ld_api_id	String	Custom backend service ID. This parameter is mandatory when the type of the user-defined authentication function is LD.
need_body	Boolean	Indicates whether to send request body.
id	String	Custom authorizer ID.
create_time	String	Creation time.
roma_app_id	String	ID of the application to which the custom authorizer belongs.
roma_app_name	String	Name of the application to which the custom authorizer belongs.

Table 4-1239 Identity

Parameter	Type	Description
name	String	Parameter name. Minimum: 0 Maximum: 32
location	String	Parameter location.
validation	String	Parameter verification expression. The default value is null, indicating that no verification is performed. Maximum: 1024

Status code: 400**Table 4-1240** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1241** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1242** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1243** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1244** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "total" : 1,
  "size" : 1,
  "authorizer_list" : [ {
    "name" : "Authorizer_demo",
    "type" : "FRONTEND",
    "authorizer_type" : "LD",
    "authorizer_uri" : "/test",
    "identities" : [ {
      "name" : "header",
      "location" : "HEADER"
    } ],
    "ttl" : 5,
    "user_data" : "authorizer_test",
    "id" : "0d982c1ac3da493dae47627b6439fc5c",
    "create_time" : "2020-09-23T02:32:10Z",
    "need_body" : true,
    "roma_app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "roma_app_name" : "app-demo"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.21 Monitoring Information Query

4.21.1 Querying API Calls Within a Period

Function

This API is used to query the number of API calling times based on the API ID and specified time period. A sample value is returned every minute. If the query scope is within one hour, a sample value is returned every minute, which is the accumulated value within one minute. For security purposes, run the curl command on the server to query information, and then clear operation records, including but not limited to records in the ~/.bash_history and /var/log/messages directories (if any).

URI

GET /v2/{project_id}/apic/instances/{instance_id}/statistics/api/latest

Table 4-1245 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1246 Query parameters

Parameter	Mandatory	Type	Description
api_id	Yes	String	API ID.
duration	Yes	String	Time range (unit: h or m). For example, 1h refers to the latest 1 hour and 1m refers to the latest 1 minute.

Request Parameters

Table 4-1247 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1248 Response body parameters

Parameter	Type	Description
code	String	Response code.
start_time	Integer	Timestamp (UTC) of the start time.
end_time	Integer	Timestamp (UTC) of the end time.
list	Array of StatisticsAPI objects	Statistic data.

Table 4-1249 StatisticsAPI

Parameter	Type	Description
max_latency	Integer	Maximum latency.
avg_latency	Number	Average latency.
req_count	Integer	Total number of requests.

Parameter	Type	Description
req_count2xx	Integer	Total number of 2xx response codes.
req_count4xx	Integer	Total number of 4xx response codes.
req_count5xx	Integer	Total number of 5xx response codes.
req_count_error	Integer	Number of errors.
max_inner_latency	Integer	Maximum gateway latency.
avg_inner_latency	Number	Average gateway latency.
max_backend_latency	Integer	Maximum backend latency.
avg_backend_latency	Number	Average backend latency.
output_throughput	Integer	Downstream throughput (bytes).
input_throughput	Integer	Upstream throughput (bytes).
current_minute	Long	Timestamp (UTC) of API access.
cycle	String	Measurement period.
api_id	String	API ID.
group_id	String	API group ID.
provider	String	API provider.
req_time	String	Request time.
register_time	String	Recording time.
status	Integer	Status.

Status code: 400**Table 4-1250** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1251** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1252** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1253** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1254** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses**Status code: 200**

OK

```
{
  "code" : "APIG.0000",
  "start_time" : 1595573280,
  "end_time" : 1595576820,
  "list" : [ {
    "api_id" : "39bce6d25a3f470e8cf7b2c97174f7d9",
    "avg_backend_latency" : 2.71,
    "avg_inner_latency" : 1.57,
    "avg_latency" : 4.14,
    "current_minute" : 1595576640,
    "cycle" : "MINUTE",
    "group_id" : "d0fc4e40b7d1492cba802f667c7c7226",
    "input_throughput" : 1071,
    "max_backend_latency" : 6,
    "max_inner_latency" : 8,
    "max_latency" : 14,
    "output_throughput" : 3790,
    "provider" : "73d69ae0cfcf460190522d06b60f05ad",
    "register_time" : "2020-07-24 15:44:56",
    "req_count" : 7,
    "req_count2xx" : 0,
    "req_count4xx" : 6,
    "req_count5xx" : 1,
    "req_count_error" : 7,
    "req_time" : "2020-07-24 15:44:00",
    "status" : 1
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:api_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 39bce6d25a3f470e8cf7b2c97174f7d9 does not exist"
}
```

Status code: 500

Internal Server Error


```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.21.2 Querying API Metric Statistics

Function

This API is used to query API statistics of an instance.

Constraints

If the invoking times out or the error message "request statistics error" is returned, switch to another mode or shorten the statistics collection duration.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/statistics/api

Table 4-1255 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1256 Query parameters

Parameter	Mandatory	Type	Description
mode	No	String	Query mode. • ALL: query in all applications under an instance. The master account permission is required. • APP: query in a specified integration application • API: query in a specified API • INSTANCE (default value): query in an instance Note: When mode is set to APP or ALL, the cycle, api_id, group_id, provider, register_time, and status fields are not returned in the interface response. Default: INSTANCE
roma_app_id	No	String	Integration application ID. This parameter is mandatory when mode is set to APP.
api_id	No	String	API ID. This parameter is mandatory when mode is set to API.
cycle	No	String	Measurement period. • minute: minute • hour: hour • day: day Default: minute
start_time	No	String	Start time, for example, 2020-06-18 10:00:01.
end_time	No	String	End time, for example, 2020-06-18 23:00:00.

Parameter	Mandatory	Type	Description
duration	No	String	Statistics duration format: Integer + Unit (m or h). m: minute; h: hour. The combination of hour and minute is supported. For example, 1h or 2h45m. • If start_time and end_time are given, [start_time, end_time] is queried. • If start_time does not exist, end_time and duration exist and are valid, the query range is [end_time - duration, end_time]. • If neither start_time nor end_time exists, duration exists and is valid, and end_time is set to now, the query range is [end_time - duration, end_time]. • If start_time, end_time, nor duration exists, the error message "missing time range parameters" is displayed.

Request Parameters

Table 4-1257 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1258 Response body parameters

Parameter	Type	Description
code	String	Response code.
start_time	Integer	Timestamp (UTC) of the start time.
end_time	Integer	Timestamp (UTC) of the end time.
list	Array of StatisticsAPI objects	Statistic data.

Table 4-1259 StatisticsAPI

Parameter	Type	Description
max_latency	Integer	Maximum latency.
avg_latency	Number	Average latency.
req_count	Integer	Total number of requests.
req_count2xx	Integer	Total number of 2xx response codes.
req_count4xx	Integer	Total number of 4xx response codes.
req_count5xx	Integer	Total number of 5xx response codes.
req_count_error	Integer	Number of errors.
max_inner_latency	Integer	Maximum gateway latency.
avg_inner_latency	Number	Average gateway latency.
max_backend_latency	Integer	Maximum backend latency.
avg_backend_latency	Number	Average backend latency.
output_throughput	Integer	Downstream throughput (bytes).
input_throughput	Integer	Upstream throughput (bytes).
current_minute	Long	Timestamp (UTC) of API access.
cycle	String	Measurement period.
api_id	String	API ID.

Parameter	Type	Description
group_id	String	API group ID.
provider	String	API provider.
req_time	String	Request time.
register_time	String	Recording time.
status	Integer	Status.

Status code: 400**Table 4-1260** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1261** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1262** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-1263 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1264** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "code": "APIG.0000",
  "start_time": 1599400383,
  "end_time": 1599616383,
  "list": [ {
    "max_latency": 0,
    "avg_latency": 0,
    "max_inner_latency": 0,
    "avg_inner_latency": 0,
    "max_backend_latency": 0,
    "avg_backend_latency": 0,
    "req_count": 5,
    "req_count2xx": 0,
    "req_count4xx": 0,
    "req_count5xx": 5,
    "req_count_error": 5,
    "output_throughput": 1695,
    "input_throughput": 2990,
    "current_minute": 1599552000,
    "req_time": "2020-09-08 16:00:00",
    "cycle": "HOUR",
    "api_id": "85deba41aae24839b14cdc03780e8bb6",
    "group_id": "22ea1e9d294e4349940b6452a7fd2207",
    "provider": "2cb5460f617c4822835e38f0966d8b93",
    "register_time": "2020-09-08 17:22:22"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:api_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3002",
  "error_msg" : "API 39bce6d25a3f470e8cf7b2c97174f7d9 does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.22 Instance Feature Management

4.22.1 Querying Instance Features

Function

This API is used to query the features of an instance. If an instance does not support the features listed in the following table, contact technical support to upgrade the instance.

For details about the supported features and feature configuration, see Appendix > APIC Features Supported by Instances.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/features

Table 4-1265 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1266 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Request Parameters

Table 4-1267 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200**Table 4-1268** Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
features	Array of FeatureInfoV2 objects	Feature list.

Table 4-1269 FeatureInfoV2

Parameter	Type	Description
id	String	Feature ID.
name	String	Feature name. Minimum: 1 Maximum: 64
enable	Boolean	Indicates whether to enable the feature.
config	String	Parameter configuration.
instance_id	String	Instance ID.
update_time	String	Feature update time.

Status code: 400

Table 4-1270 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1271** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1272** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1273** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1274** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "features" : [ {
    "config" : "on",
    "enable" : true,
    "id" : "db9a9260cd3e4a16a9b5747a65d3ffaa",
    "instance_id" : "f0fa1789-3b76-433b-a787-9892951c620e",
    "name" : "app_api_key",
    "update_time" : "2020-08-24T01:17:31.041984Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.22.2 Configuring a Feature for an Instance

Function

This API is used to configure a feature for an instance.

For details about the supported features and feature configuration, see [Appendix > APIC Features Supported by Instances](#).

URI

POST /v2/{project_id}/apic/instances/{instance_id}/features

Table 4-1275 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference .
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-1276 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1277 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Feature name. Minimum: 1 Maximum: 64
enable	Yes	Boolean	Indicates whether to enable the feature.
config	No	String	Parameter configuration.

Response Parameters

Status code: 201

Table 4-1278 Response body parameters

Parameter	Type	Description
id	String	Feature ID.
name	String	Feature name. Minimum: 1 Maximum: 64
enable	Boolean	Indicates whether to enable the feature.
config	String	Parameter configuration.
instance_id	String	Instance ID.
update_time	String	Feature update time.

Status code: 400

Table 4-1279 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1280** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1281** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1282** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1283** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "name" : "app_api_key",
  "config" : "on",
  "enable" : true
}
```

Example Responses

Status code: 201

Created

```
{
  "config" : "on",
  "enable" : true,
  "id" : "db9a9260cd3e4a16a9b5747a65d3ffaa",
  "instance_id" : "f0fa1789-3b76-433b-a787-9892951c620e",
  "name" : "app_api_key",
  "update_time" : "2020-08-24T01:17:31.041984021Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2000",
  "error_msg" : "unrecognized feature app-api-key"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.23 Tag Management

4.23.1 Querying Tags

Function

Querying Tags

URI

GET /v2/{project_id}/apic/instances/{instance_id}/tags

Table 4-1284 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1285 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Request Parameters

Table 4-1286 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1287 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
tags	Array of strings	Tag list.

Status code: 400

Table 4-1288 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1289** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1290** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1291** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1292** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 2,
  "size" : 2,
  "tags" : [ "webApi", "functionApi" ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.24 Configuration Management

4.24.1 Querying Resource Configurations of an Instance

Function

This API is used to query the resource configurations and usage of an instance.

URI

GET /v2/{project_id}/apic/instances/{instance_id}/project/configs

Table 4-1293 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1294 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20

Request Parameters

Table 4-1295 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1296 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
configs	Array of Config objects	Quota list.

Table 4-1297 Config

Parameter	Type	Description
config_id	String	Quota ID.
config_name	String	Quota name.
config_value	String	Quota value. It indicates the value of the quota for the current instance.
config_time	String	Time when the quota was created.

Parameter	Type	Description
remark	String	Description about the quota. • API_NUM_LIMIT: Maximum number of APIs you can create • APP_NUM_LIMIT: Maximum number of apps you can create • APIGROUP_NUM_LIMIT: Maximum number of API groups you can create • ENVIRONMENT_NUM_LIMIT: Maximum number of environments you can create • VARIABLE_NUM_LIMIT: Maximum number of environment variables you can create for an API group • SIGN_NUM_LIMIT: Maximum number of signature keys you can create • THROTTLE_NUM_LIMIT: Maximum number of request throttling policies you can create • APIGROUP_DOMAIN_NUM_LIMIT: Maximum number of custom domain names you can bind to an API group • API_VERSION_NUM_LIMIT: Maximum number of versions you can retain for an API • VPC_NUM_LIMIT: Maximum number of VPC channels you can create • VPC_INSTANCE_NUM_LIMIT: Maximum number of cloud servers you can associate with a VPC channel • API_PARAM_NUM_LIMIT: Maximum number of parameters you can configure for an API • API_USER_CALL_LIMIT: Maximum number of times an API can be called within a specific period • ACL_NUM_LIMIT: Maximum number of access control policies you can create • APP_THROTTLE_LIMIT: Maximum number of excluded apps allowed for a request throttling policy • USER_THROTTLE_LIMIT: Maximum number of excluded tenants allowed for a request throttling policy • API_NUM_LIMIT_PER_GROUP: Maximum number of APIs you can create for an API group

Parameter	Type	Description
		• API_POLICY_NUM_LIMIT: Maximum number of policy backends you can configure for an API • API_CONDITION_NUM_LIMIT: Maximum number of conditions you can configure for a policy backend • SL_DOMAIN_CALL_LIMIT: Maximum number of requests that can be sent to a subdomain name within a specific period • ELB_SWITCH: Whether to enable ELB channels • AUTHORIZER_NUM_LIMIT: Maximum number of custom authorizers you can create • AUTHORIZER_IDENTITY_NUM_LIMIT: Maximum number of identity sources you can configure for a custom authorizer • APP_CODE_NUM_LIMIT: Maximum number of AppCodes you can create for an app • REGION_MANAGER_WHITELIST_SERVICES: Whitelist of services that are not verified by the region manager • API_SWAGGER_NUM_LIMIT: Maximum number of Swagger files you can bind to an API group • API_TAG_NUM_LIMIT: Maximum number of tags you can configure for an API • LTS_SWITCH: Whether to enable LTS log reporting • APP_KEY_SECRET_SWITCH: Whether to enable AppKey and AppSecret customization. 1: enable; 2: disable. • RESPONSE_NUM_LIMIT: Maximum number of responses you can create for an API group • CONFIG_NUM_LIMIT_PER_APP: Maximum number of configuration items you can set for an app • BACKEND_TOKEN_ALLOW_SWITCH: Whether to allow tenants to transparently transmit tokens to the backend. 1: allow; 2: disallow. • APP_TOKEN_SWITCH: Whether to enable AppTokens • API_DESIGNER_SWITCH: Whether to enable the API designer. 1: enable; 2: disable.

Parameter	Type	Description
		• APP_API_KEY_SWITCH: Whether to enable APP_API_KEY authentication • APP_BASIC_SWITCH: Whether to enable APP_BASIC authentication • APP_JWT_SWITCH: Whether to enable APP_JWT authentication • APP_ROUTE_SWITCH: Whether to enable app routes • PUBLIC_KEY_SWITCH: Whether to enable PUBLIC_KEY backend authentication • APP_SECRET_SWITCH: Whether to enable APP_SECRET authentication • CASCADE_SWITCH: Whether to enable cascaded gateways • IS_INIT_API_PATH_HASH: Whether API PATH HASH has been updated • APP_QUOTA_NUM_LIMIT: Maximum number of clients you can create • IS_INIT_API_VERSION: Whether the API VERSION CANONICAL PATH has been updated • PLUGIN_NUM_LIMIT: Maximum number of plug-ins you can create • APICLIENT_FIRST_USE_X_HW_ID_SWITCH: Whether ApiClient preferentially uses x-hw-id to verify permissions
used	Long	Used quota of the instance.

Status code: 400**Table 4-1298** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1299 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1300** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1301** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1302** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{  
  "total" : 43,
```

```
"size" : 2,
"configs" : [ {
  "config_id" : "9",
  "config_name" : "API_VERSION_NUM_LIMIT",
  "config_value" : "10",
  "config_time" : "2019-02-12T19:42:19.914989Z",
  "remark" : "xxx",
  "used" : 0
}, {
  "config_id" : "8",
  "config_name" : "APIGROUP_DOMAIN_NUM_LIMIT",
  "config_value" : "5",
  "config_time" : "2019-02-12T19:42:19.914989Z",
  "remark" : "xxx",
  "used" : 0
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2012",
  "error_msg" : "Invalid parameter value,parameterName:instance_id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.25 Application Configuration Management

4.25.1 Creating an Application Configuration

Function

Creating an Application Configuration

URI

POST /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/configs

Table 4-1303 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Request Parameters

Table 4-1304 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1305 Request body parameters

Parameter	Mandatory	Type	Description
config_type	Yes	String	Application configuration type. • variable: template variable • password: password • certificate: certificate
config_value	No	String	Application configuration value. • If config_type is set to variable, config_value is the value of the template variable. • If config_type is set to password, config_value indicates the password. • If config_type is set to certificate, config_value must contain public_key (mandatory), private_key (mandatory), and passphrase (optional), in the format of <code>{"public_key\":" ,"\private_key \":"\","passphrase\":"\"}"</code>.
description	No	String	Description of an application configuration.

Parameter	Mandatory	Type	Description
config_name	No	String	Application configuration name. The value can contain letters, digits, underscores (_), hyphens (-), periods (.), and at signs (@), and must start with a letter. Minimum: 1 Maximum: 512

Response Parameters

Status code: 201

Table 4-1306 Response body parameters

Parameter	Type	Description
id	String	Application configuration ID.
app_id	String	Application ID
config_type	String	Application configuration type.
config_name	String	Application configuration name.
config_value	String	Application configuration value.
update_time	String	Time when the application configuration was updated.
description	String	Description of an application configuration.

Status code: 400

Table 4-1307 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401

Table 4-1308 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1309** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1310** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1311** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{  
  "config_name": "app-config-demo",  
  "config_type": "variable"  
}
```

Example Responses

Status code: 201

Created

```
{
  "app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "config_name" : "app-config-demo",
  "config_type" : "variable",
  "config_value" : "",
  "description" : "",
  "id" : "a8bf4963c54544be81d5af4cc4630bde",
  "update_time" : "2020-09-07T07:05:41.96969041Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:config_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3019",
  "error_msg" : "The app does not exist"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.25.2 Modifying an Application Configuration

Function

Modifying an Application Configuration

URI

PUT /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/configs/{app_config_id}

Table 4-1312 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID
app_config_id	Yes	String	Application configuration ID.

Request Parameters

Table 4-1313 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 4-1314 Request body parameters

Parameter	Mandatory	Type	Description
config_type	Yes	String	Application configuration type. • variable: template variable • password: password • certificate: certificate
config_value	No	String	Application configuration value. • If config_type is set to variable, config_value is the value of the template variable. • If config_type is set to password, config_value indicates the password. • If config_type is set to certificate, config_value must contain public_key (mandatory), private_key (mandatory), and passphrase (optional), in the format of <code>{"public_key\":"private_key\":"passphrase\":"\"}</code>.
description	No	String	Description of an application configuration.

Response Parameters

Status code: 200

Table 4-1315 Response body parameters

Parameter	Type	Description
id	String	Application configuration ID.
app_id	String	Application ID
config_type	String	Application configuration type.
config_name	String	Application configuration name.
config_value	String	Application configuration value.
update_time	String	Time when the application configuration was updated.
description	String	Description of an application configuration.

Status code: 401**Table 4-1316** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1317** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1318** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1319** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

```
{
  "config_type": "password"
}
```

Example Responses**Status code: 200**

OK

```
{
  "app_id": "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "config_name": "app-config-demo",
  "config_type": "password",
  "config_value": "*****",
  "description": "",
  "id": "a8bf4963c54544be81d5af4cc4630bde",
  "update_time": "2020-09-07T07:10:07.601494336Z"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": "APIG.1002",
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code": "APIG.1005",
  "error_msg": "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code": "APIG.3081",
  "error_msg": "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.25.3 Deleting an Application Configuration

Function

Deleting an Application Configuration

URI

DELETE /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/configs/{app_config_id}

Table 4-1320 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID
app_config_id	Yes	String	Application configuration ID.

Request Parameters

Table 4-1321 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 400**Table 4-1322** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1323** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1324** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404

Table 4-1325 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500

Table 4-1326 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:id. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.25.4 Querying Details of an Application Configuration

Function

Querying Details of an Application Configuration

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/{app_id}/configs/{app_config_id}

Table 4-1327 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.
app_id	Yes	String	Application ID

Parameter	Mandatory	Type	Description
app_config_id	Yes	String	Application configuration ID.

Request Parameters

Table 4-1328 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1329 Response body parameters

Parameter	Type	Description
id	String	Application configuration ID.
app_id	String	Application ID
config_type	String	Application configuration type.
config_name	String	Application configuration name.
config_value	String	Application configuration value.
update_time	String	Time when the application configuration was updated.
description	String	Description of an application configuration.

Status code: 400

Table 4-1330 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1331** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1332** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1333** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1334** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
  "config_name" : "app-config-demo",
  "config_type" : 1,
  "config_value" : "",
  "description" : "",
  "id" : "a8bf4963c54544be81d5af4cc4630bde",
  "update_time" : "2020-09-07T07:05:41.96969041Z"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:config_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3081",
  "error_msg" : "authorizer with id: 0d982c1ac3da493dae47627b6439fc5c not found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.25.5 Querying Application Configurations

Function

Querying Application Configurations

URI

GET /v2/{project_id}/apic/instances/{instance_id}/apps/configs

Table 4-1335 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference.
instance_id	Yes	String	Instance ID.

Table 4-1336 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Long	Offset from which the query starts. If the offset is less than 0, the value is automatically converted to 0. Default: 0

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. Minimum: 1 Maximum: 500 Default: 20
app_id	No	String	Application ID
config_name	No	String	Application configuration name.
roma_app_name	No	String	Application name.

Request Parameters

Table 4-1337 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Response Parameters

Status code: 200

Table 4-1338 Response body parameters

Parameter	Type	Description
size	Integer	Length of the returned resource list.
total	Long	Number of resources that match the query conditions.
configs	Array of AppConfigInfoV2 objects	List of application configurations.

Table 4-1339 AppConfigInfoV2

Parameter	Type	Description
id	String	Application configuration ID.
app_id	String	Application ID
config_type	String	Application configuration type.
config_name	String	Application configuration name.
config_value	String	Application configuration value.
update_time	String	Time when the application configuration was updated.
description	String	Description of an application configuration.

Status code: 400**Table 4-1340** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 401**Table 4-1341** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 403**Table 4-1342** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 404**Table 4-1343** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Status code: 500**Table 4-1344** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "configs" : [ {
    "app_id" : "98df09fb-d459-4cbf-83a7-2b55ca6f3d5d",
    "config_name" : "app-config-demo",
    "config_type" : 1,
    "id" : "a8bf4963c54544be81d5af4cc4630bde",
    "update_time" : "2020-09-07T07:05:41Z"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "APIG.2011",
  "error_msg" : "Invalid parameter value,parameterName:config_name. Please refer to the support documentation"
}
```

Status code: 401

Unauthorized

```
{
  "error_code" : "APIG.1002",
}
```

```
{
  "error_msg" : "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error_code" : "APIG.1005",
  "error_msg" : "No permissions to request this method"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "APIG.3030",
  "error_msg" : "The instance does not exist;id:f0fa1789-3b76-433b-a787-9892951c620e"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "APIG.9999",
  "error_msg" : "System error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

5 MQS APIs

5.1 MQS Instance Management

5.1.1 Querying MQS Instances

Function

This API is used to query a list of MQS instances.

URI

GET /v2/{project_id}/mqs/instances

Table 5-1 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.

Table 5-2 Query parameters

Parameter	Mandatory	Type	Description
include_internal	Yes	String	Whether internal instances are included. The value must be true .

Request Parameters

None

Response Parameters

Status code: 200

Table 5-3 Response body parameters

Parameter	Type	Description
instances	Array of instances objects	Instance list.
instance_num	Integer	Number of instances.

Table 5-4 instances

Parameter	Type	Description
name	String	Instance name.
description	String	Description.
engine	String	Message engine.
engine_version	String	Version.
specification	String	Instance specifications.
storage_space	Integer	Message storage space, in GB.
partition_num	Integer	Maximum number of partitions. The maximum number of partitions of ROMA Connect instances varies with specifications.
used_storage_space	Integer	Used message storage space, in GB.
connect_address	String	IP address of an instance.
port	Integer	Port of an instance.
status	String	Instance status. ● CREATING: The instance is being created. ● RUNNING: The instance is running properly. Only instances in the Running state can provide services.
instance_id	String	Instance ID.

Parameter	Type	Description
resource_spec_code	String	Resource specification code. • dms.instance.kafka.cluster.c3.mini: Kafka instance, 100 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.small.2: Kafka instance, 300 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.middle.2: Kafka instance, 600 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.high.2: Kafka instance, 1200 MB/s reference bandwidth
charging_mode	Integer	Billing mode.
vpc_id	String	VPC ID.
vpc_name	String	VPC name.
created_at	String	Time when an instance was created. The time is a Unix timestamp, in millisecond.
user_id	String	User ID.
user_name	String	Username.
order_id	String	Order ID.
maintain_begin	String	Time at which the maintenance time window starts. The format is HH:mm:ss.
maintain_end	String	Time at which the maintenance time window ends. The format is HH:mm:ss.
enable_publicip	Boolean	Whether public access is enabled for an instance. • true: Public access is enabled. • false: Public access is disabled.
publicip_address	String	Public network connection address.
management_connect_address	String	Connection address of the Kafka Manager of a Kafka instance.
ssl_enable	Boolean	Whether security authentication is enabled. • true: Security authentication is enabled. • false: Security authentication is disabled.
enterprise_project_id	String	Enterprise project ID.

Parameter	Type	Description
is_logical_volume	Boolean	Whether the instance is a new instance. This parameter is used to distinguish old instances from new instances during instance capacity expansion. • true: New instance, which allows dynamic disk capacity expansion without restarting the instance. • false: Old instance.
extend_times	Integer	Number of times disk expansion is performed. If the value exceeds 20, no more disk cannot be added.
enable_auto_topic	Boolean	Whether automatic topic creation is enabled. • true: Automatic topic creation is enabled. • false: Automatic topic creation is disabled.
type	String	Instance type. The value can be cluster .
product_id	String	Product ID.
security_group_id	String	Security group ID.
security_group_name	String	Security group name.
subnet_id	String	Subnet ID.
available_zones	Array of strings	AZ to which the instance node belongs. The AZ ID is returned.
total_storage_space	Integer	Message storage space, in GB.
public_connect_address	String	IP address of the instance for public access. This parameter is available only when public access is enabled for the instance.
storage_resource_id	String	Storage resource ID.
storage_spec_code	String	I/O specifications.
service_type	String	Service type.
storage_type	String	Storage class.
retention_policy	String	Message retention policy.
kafka_public_status	String	Whether public access is enabled for Kafka.

Parameter	Type	Description
public_bandwidth	Integer	Internet bandwidth.
kafka_manager_user	String	Username for logging in to the Kafka Manager.
enable_log_collection	Boolean	Whether log collection is enabled.
cross_vpc_info	String	Cross-VPC access information.
ipv6_enable	Boolean	Whether IPv6 is enabled.
ipv6_connect_addresses	Array of strings	IPv6 connection address.
connector_enable	Boolean	Whether dumping is enabled.
connector_id	String	Dump task ID.
rest_enable	Boolean	Whether Kafka REST is enabled.
rest_connect_address	String	Kafka REST address.
message_query_inst_enable	Boolean	Whether message query is enabled.
vpc_client_plain	Boolean	Whether intra-VPC plaintext access is enabled.
support_features	String	List of features supported by the Kafka instance.
trace_enable	Boolean	Whether message tracing is enabled.
pod_connect_address	String	Connection address of the tenant side.
disk_encrypted	Boolean	Whether disk encryption is enabled.
kafka_private_connect_address	String	Private connection address of the Kafka instance.
ces_version	String	Cloud Eye version.
mqc_dump_enable	Boolean	MQS dump function.
node_num	Integer	Node quantity.
public_network_access_bandwidth	Integer	Public network access bandwidth.

Parameter	Type	Description
public_access_enabled	String	Whether public access is enabled. This API differs from the API indicating the time when public network access is enabled.
plugin_enable	Boolean	Whether to enable the plug-in function.
agent_enable	Boolean	Whether to enable the proxy.
access_user	String	Authentication username.
connect_dn	String	Instance connection address.

Example Requests

```
GET https://{endpoint}/v2/{project_id}/mqs/instances?include_internal=true&include_failure=false
```

Example Responses

Status code: 200

OK

```
{
  "instances": [ {
    "name": "romamqs_640bb069-151e-4d5e-bd1b-xxxxxxxxxxxx",
    "engine": "kafka",
    "port": 9093,
    "status": "RUNNING",
    "description": "roma-mqs",
    "type": "cluster",
    "specification": "100MB",
    "engine_version": "1.1.0",
    "connect_address": "192.168.0.57,192.168.0.227,192.168.0.234",
    "instance_id": "640bb069-151e-4d5e-bd1b-xxxxxxxxxxxx",
    "resource_spec_code": "dms.instance.kafka.cluster.c3.mini",
    "charging_mode": 1,
    "vpc_id": "5810f4bb-b202-45cd-a5d1-xxxxxxxxxxxx",
    "vpc_name": "vpc-4aeb",
    "created_at": "1601016527494",
    "product_id": "00300-30308-0--0",
    "security_group_id": "20d120f2-70ba-4c8d-a6a4-xxxxxxxxxxxx",
    "security_group_name": "sg-5ab2",
    "subnet_id": "08c8e51c-7013-43ee-bb0a-xxxxxxxxxxxx",
    "available_zones": [ "9f1c5806706d4c1fb0eb72f0a9b18c77" ],
    "user_id": "4d1a542e7bcf400cb9c8efada01406d8",
    "user_name": "paas_test",
    "access_user": "mqs-gen-user-1601016526411",
    "maintain_begin": "22:00:00",
    "maintain_end": "02:00:00",
    "enable_log_collection": false,
    "storage_space": 490,
    "total_storage_space": 600,
    "used_storage_space": 25,
    "partition_num": "300",
    "enable_publicip": false,
    "ssl_enable": true,
    "cross_vpc_info": "{ \"192.168.0.227\": { \"advertised_ip\": \"192.168.0.227\", \"port\": 9011, \"port_id\": \"6ba24c0a-c3ba-4fb8-9adb-84b7a346a623\" }, \"192.168.0.57\": { \"advertised_ip\": \"192.168.0.57\", \"port\": 9011, \"port_id\": \"4d34a44d-d968-4dcb-89a9-e38e62626df6\" }, \"192.168.0.234\": { \"advertised_ip\": \"192.168.0.234\", \"port\": 9011, \"port_id\": \"9eac2e81-323c-4d2d-acce-7f84f2d3bd9b\" } }",
    "storage_resource_id": "234705d3-8f33-451a-92aa-xxxxxxxxxxxx",
  } ]
}
```

```
"storage_spec_code" : "dms.physical.storage.normal",
"service_type" : "advanced",
"storage_type" : "hec",
"is_logical_volume" : true,
"extend_times" : 0,
"retention_policy" : "produce_reject",
"ipv6_enable" : false,
"ipv6_connect_addresses" : [ ],
"connector_enable" : false,
"mqc_connector_enable" : true,
"mqc_connector_address" : "192.168.0.10:9776;192.168.0.17:9776",
"connector_id" : "",
"rest_enable" : true,
"rest_connect_address" : "https://10.10.10.170:9292",
"kafka_public_status" : "false",
"public_bandwidth" : 0,
"public_boundwidth" : 0,
"message_query_inst_enable" : true,
"vpc_client_plain" : false,
"support_features" :
"kafka.crossvpc.domain.enable,feature.physerver.kafka.topic.accesspolicy,rabbitmq.plugin.management,roma_
app_enable,auto_topic_switch,feature.physerver.kafka.user.manager,route,kafka.new.pod.port,feature.physerv
er.kafka.topic.modify,message_trace_enable,features.pod.token.access,roma.user.manage.no.support,feature.p
hyserver.kafka.pulbic.dynamic,features.log.collection",
"trace_enable" : false,
"agent_enable" : false,
"pod_connect_address" : "10.10.10.122:9080,10.10.10.96:9080,10.10.10.66:9080",
"disk_encrypted" : false,
"kafka_private_connect_address" : "192.168.0.227:9093,192.168.0.234:9093,192.168.0.57:9093",
"enable_auto_topic" : false,
"ces_version" : "linux,v1,v2",
"plugin_enable" : false,
"public_access_enabled" : "false",
"node_num" : 3
}, {
"name" : "romamqc_54fc780d-bf6f-4402-8149-xxxxxxxxxxxx",
"engine" : "kafka",
"port" : 9093,
"status" : "RUNNING",
"description" : "roma-mqc",
"type" : "cluster",
"specification" : "100MB",
"engine_version" : "1.1.0",
"connect_address" : "192.168.0.25,192.168.0.92,192.168.0.220",
"instance_id" : "54fc780d-bf6f-4402-8149-xxxxxxxxxxxx",
"resource_spec_code" : "dms.instance.kafka.cluster.c3.mini",
"charging_mode" : 1,
"vpc_id" : "5810f4bb-b202-45cd-a5d1-xxxxxxxxxxxx",
"vpc_name" : "vpc-4aeb",
"created_at" : "1600075938106",
"product_id" : "00300-30308-0--0",
"security_group_id" : "a9b9667f-8a48-4317-b637-xxxxxxxxxxxx",
"security_group_name" : "default",
"subnet_id" : "08c8e51c-7013-43ee-bb0a-xxxxxxxxxxxx",
"available_zones" : [ "9f1c5806706d4c1fb0eb72f0a9b18c77" ],
"user_id" : "4d1a542e7bcf400cb9c8efada01406d8",
"user_name" : "paas_test",
"access_user" : "mqc-gen-user-1600075937011",
"maintain_begin" : "22:00:00",
"maintain_end" : "02:00:00",
"enable_log_collection" : false,
"storage_space" : 492,
"total_storage_space" : 600,
"used_storage_space" : 25,
"partition_num" : "300",
"enable_publicip" : false,
"ssl_enable" : true,
"cross_vpc_info" : "{ \"192.168.0.25\": { \"advertised_ip\": \"192.168.0.25\", \"port\": 9011, \"port_id
\": \"bcf9ba5e-26f4-4d09-b566-014eac1c804b\" }, \"192.168.0.92\": { \"advertised_ip\": \"192.168.0.92\", \"port
```

```
\":9011,\"port_id\": \"43bbffdd-07bf-450f-b1cd-c5e553c77c0f\"},\"192.168.0.220\":{ \"advertised_ip
\": \"192.168.0.220\", \"port\":9011,\"port_id\": \"dc26f9c0-2d2b-4522-9f22-b5b3d726121e\"}},
  \"storage_resource_id\" : \"0b391dcb-ccc8-4f9d-9440-xxxxxxxxxxxx\",
  \"storage_spec_code\" : \"dms.physical.storage.high\",
  \"service_type\" : \"advanced\",
  \"storage_type\" : \"hec\",
  \"is_logical_volume\" : true,
  \"extend_times\" : 0,
  \"retention_policy\" : \"produce_reject\",
  \"ipv6_enable\" : false,
  \"ipv6_connect_addresses\" : [ ],
  \"connector_enable\" : false,
  \"mq_s_connector_enable\" : true,
  \"mq_s_connector_address\" : \"192.168.0.66:9776;192.168.0.65:9776\",
  \"connector_id\" : \"\",
  \"rest_enable\" : true,
  \"rest_connect_address\" : \"https://10.10.10.57:9292\",
  \"kafka_public_status\" : \"false\",
  \"public_bandwidth\" : 0,
  \"public_boundwidth\" : 0,
  \"message_query_inst_enable\" : true,
  \"vpc_client_plain\" : false,
  \"support_features\" :
    \"kafka.crossvpc.domain.enable,route,kafka.new.pod.port,feature.physerver.kafka.topic.modify,feature.physerv
er.kafka.topic.accesspolicy,message_trace_enable,features.pod.token.access,rabbitmq.plugin.management,rom
a_app_enable,features.log.collection,auto_topic_switch,feature.physerver.kafka.user.manager\",
  \"trace_enable\" : false,
  \"agent_enable\" : false,
  \"pod_connect_address\" : \"10.10.10.244:9080,10.10.10.79:9080,10.10.10.64:9080\",
  \"disk_encrypted\" : false,
  \"kafka_private_connect_address\" : \"192.168.0.25:9093,192.168.0.92:9093,192.168.0.220:9093\",
  \"enable_auto_topic\" : false,
  \"ces_version\" : \"linux,v1,v2\",
  \"plugin_enable\" : false,
  \"public_access_enabled\" : \"false\",
  \"node_num\" : 3
}],
  \"instance_num\" : 2
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

5.1.2 Querying MQS Instance Details

Function

This API is used to query details of an MQS instance.

URI

GET /v2/{project_id}/mq_s/instances/{instance_id}

Table 5-5 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Status code: 200

Table 5-6 Response body parameters

Parameter	Type	Description
name	String	Instance name.
description	String	Description.
engine	String	Message engine.
engine_version	String	Version.
specification	String	Instance specifications.
storage_space	Integer	Message storage space, in GB.
partition_num	Integer	Maximum number of partitions. The maximum number of partitions of ROMA Connect instances varies with specifications.
used_storage_space	Integer	Used message storage space, in GB.
connect_address	String	IP address of an instance.
port	Integer	Port of an instance.
status	String	Instance status. ● CREATING: The instance is being created. ● RUNNING: The instance is running properly. Only instances in the Running state can provide services.
instance_id	String	Instance ID.

Parameter	Type	Description
resource_spec_code	String	Resource specification code. • dms.instance.kafka.cluster.c3.mini: Kafka instance, 100 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.small.2: Kafka instance, 300 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.middle.2: Kafka instance, 600 MB/s reference bandwidth • dms.instance.kafka.cluster.c3.high.2: Kafka instance, 1200 MB/s reference bandwidth
charging_mode	Integer	Billing mode.
vpc_id	String	VPC ID.
vpc_name	String	VPC name.
created_at	String	Time when an instance was created. The time is a Unix timestamp, in millisecond.
user_id	String	User ID.
user_name	String	Username.
order_id	String	Order ID.
maintain_begin	String	Time at which the maintenance time window starts. The format is HH:mm:ss.
maintain_end	String	Time at which the maintenance time window ends. The format is HH:mm:ss.
enable_publicip	Boolean	Whether public access is enabled for an instance. • true: Public access is enabled. • false: Public access is disabled.
management_connect_address	String	Connection address of the Kafka Manager of a Kafka instance.
ssl_enable	Boolean	Whether security authentication is enabled. • true: Security authentication is enabled. • false: Security authentication is disabled.
enterprise_project_id	String	Enterprise project ID.

Parameter	Type	Description
is_logical_volume	Boolean	Whether the instance is a new instance. This parameter is used to distinguish old instances from new instances during instance capacity expansion. • true: New instance, which allows dynamic disk capacity expansion without restarting the instance. • false: Old instance.
extend_times	Integer	Number of disk expansion times. If the value exceeds 20, no more disk cannot be added.
enable_auto_topic	Boolean	Whether automatic topic creation is enabled. • true: Automatic topic creation is enabled. • false: Automatic topic creation is disabled.
type	String	Instance type. The value can be cluster .
product_id	String	Product ID.
security_group_id	String	Security group ID.
security_group_name	String	Security group name.
subnet_id	String	Subnet ID.
subnet_name	String	Subnet name.
subnet_cidr	String	Subnet segment.
available_zones	Array of strings	AZ to which the instance node belongs. The AZ ID is returned.
total_storage_space	Integer	Message storage space, in GB.
public_connect_address	String	IP address of the instance for public access. This parameter is available only when public access is enabled for the instance.
storage_resource_id	String	Storage resource ID.
storage_spec_code	String	I/O specifications.
service_type	String	Service type.
storage_type	String	Storage class.
retention_policy	String	Message retention policy.

Parameter	Type	Description
kafka_public_status	String	Whether public access is enabled for Kafka.
public_bandwidth	Integer	Internet bandwidth.
kafka_manager_user	String	Username for logging in to the Kafka Manager.
enable_log_collection	Boolean	Whether log collection is enabled.
cross_vpc_info	String	Cross-VPC access information.
ipv6_enable	Boolean	Whether IPv6 is enabled.
ipv6_connect_addresses	Array of strings	IPv6 connection address.
connector_enable	Boolean	Whether dumping is enabled.
connector_id	String	Dump task ID.
mqs_connector_enable	Boolean	Whether to enable the MQS dump function.
mqs_connector_address	String	MQS dump address.
plugin_enable	Boolean	Whether to enable the plug-in function.
rest_enable	Boolean	Whether Kafka REST is enabled.
rest_connect_address	String	Connection address of the Kafka REST.
message_query_inst_enable	Boolean	Whether message query is enabled.
vpc_client_plain	Boolean	Whether intra-VPC plaintext access is enabled.
support_features	String	List of features supported by the Kafka instance.
trace_enable	Boolean	Whether message tracing is enabled.
pod_connect_address	String	Connection address of the tenant side.
disk_encrypted	Boolean	Whether disk encryption is enabled.
kafka_private_connect_address	String	Private connection address of the Kafka instance.

Parameter	Type	Description
ces_version	String	Cloud Eye version.
node_num	Integer	Node quantity.
publicip_address	String	Public network connection address.
listeners	Object	Listener information.
public_access_enabled	String	Whether public network access is enabled. This API differs from the API indicating the time when public network access is enabled.
public_bound_width	Integer	Public network access bandwidth.
connect_dn	String	Instance connection address.
agent_enable	Boolean	Whether to enable the proxy.

Example Requests

```
GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}
```

Example Responses

Status code: 200

OK

```
{
  "name": "romamqs_640bb069-151e-4d5e-bd1b-xxxxxxxxxxxx",
  "engine": "kafka",
  "port": 9093,
  "status": "RUNNING",
  "description": "roma-mqs",
  "type": "cluster",
  "specification": "100MB",
  "engine_version": "1.1.0",
  "connect_address": "192.168.0.57,192.168.0.227,192.168.0.234",
  "connect_dn": "",
  "instance_id": "640bb069-151e-4d5e-bd1b-xxxxxxxxxxxx",
  "resource_spec_code": "dms.instance.kafka.cluster.c3.mini",
  "charging_mode": 1,
  "vpc_id": "5810f4bb-b202-45cd-a5d1-xxxxxxxxxxxx",
  "vpc_name": "vpc-4aeb",
  "created_at": "1601016527494",
  "product_id": "00300-30308-0--0",
  "security_group_id": "20d120f2-70ba-4c8d-a6a4-xxxxxxxxxxxx",
  "security_group_name": "sg-5ab2",
  "subnet_id": "08c8e51c-7013-43ee-bb0a-xxxxxxxxxxxx",
  "subnet_name": "subnet-4afa",
  "subnet_cidr": "192.168.0.0/24",
  "available_zones": [ "9f1c5806706d4c1fb0eb72f0a9b18c77" ],
  "user_id": "4d1a542e7bcf400cb9c8efada01406d8",
  "user_name": "paas_test",
  "access_user": "mqs-gen-user-1601016526411",
  "maintain_begin": "22:00:00",
  "maintain_end": "02:00:00",
  "enable_log_collection": false,
```

```
"storage_space" : 490,
"total_storage_space" : 600,
"used_storage_space" : 25,
"partition_num" : "300",
"enable_publicip" : true,
"publicip_address" : "10.10.10.170",
"ssl_enable" : true,
"cross_vpc_info" : "{\"192.168.0.227\":{\"advertised_ip\":\"192.168.0.227\",\"port\":\"9011\",\"port_id\":"
\"6ba24c0a-c3ba-4fb8-9adb-84b7a346a623\"},\"192.168.0.57\":{\"advertised_ip\":\"192.168.0.57\",\"port\":"
\"9011\",\"port_id\":\"4d34a44d-d968-4dcb-89a9-e38e62626df6\"},\"192.168.0.234\":{\"advertised_ip\":"
\"192.168.0.234\",\"port\":\"9011\",\"port_id\":\"9eac2e81-323c-4d2d-acce-7f84f2d3bd9b\"}}\",
"storage_resource_id" : "234705d3-8f33-451a-92aa-xxxxxxxxxxxx",
"storage_spec_code" : "dms.physical.storage.normal",
"service_type" : "advanced",
"storage_type" : "hec",
"is_logical_volume" : true,
"extend_times" : 0,
"retention_policy" : "produce_reject",
"ipv6_enable" : false,
"ipv6_connect_addresses" : [ ],
"connector_enable" : false,
"mqc_connector_enable" : true,
"mqc_connector_address" : "192.168.0.10:9776;192.168.0.17:9776",
"connector_id" : "",
"rest_enable" : true,
"rest_connect_address" : "https://10.10.10.170:9292",
"kafka_public_status" : "false",
"public_bandwidth" : 0,
"public_boundwidth" : 0,
"message_query_inst_enable" : true,
"vpc_client_plain" : false,
"support_features" :
"kafka.crossvpc.domain.enable,feature.physerver.kafka.topic.accesspolicy,rabbitmq.plugin.management,roma_
app_enable,auto_topic_switch,feature.physerver.kafka.user.manager,route,kafka.new.pod.port,feature.physerv
er.kafka.topic.modify,message_trace_enable,features.pod.token.access,roma.user.manage.no.support,feature.p
hyserver.kafka.pulbic.dynamic,features.log.collection",
"trace_enable" : false,
"agent_enable" : false,
"listeners" : [ {
  "name" : "mqc-kafka-1",
  "port" : 9096,
  "backend" : {
    "ip" : [ "192.168.0.227" ],
    "port" : 9096,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 9093,
      "param" : null
    }
  }
}, {
  "name" : "mqc-kafka-2",
  "port" : 9097,
  "backend" : {
    "ip" : [ "192.168.0.234" ],
    "port" : 9097,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 9093,
      "param" : null
    }
  }
}, {
  "name" : "mqc-connector-0",
  "port" : 20911,
  "backend" : {
    "ip" : [ "192.168.0.10" ],
    "port" : 20911,
    "health_check" : {
```

```
    "protocol" : "TCP_CHECK",
    "port" : 20911,
    "param" : null
  }
}, {
  "name" : "mqs-connector-1",
  "port" : 20912,
  "backend" : {
    "ip" : [ "192.168.0.17" ],
    "port" : 20912,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 20912,
      "param" : null
    }
  }
}, {
  "name" : "mqs-kafka-0",
  "port" : 9095,
  "backend" : {
    "ip" : [ "192.168.0.57" ],
    "port" : 9095,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 9093,
      "param" : null
    }
  }
}, {
  "name" : "mqs-namesrv",
  "port" : 9776,
  "backend" : {
    "ip" : [ "192.168.0.10", "192.168.0.17" ],
    "port" : 9776,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 9776,
      "param" : null
    }
  }
}, {
  "name" : "mqs-rest",
  "port" : 9292,
  "backend" : {
    "ip" : [ "192.168.0.38", "192.168.0.230" ],
    "port" : 9292,
    "health_check" : {
      "protocol" : "TCP_CHECK",
      "port" : 9292,
      "param" : null
    }
  }
}],
"pod_connect_address" : "10.10.10.122:9080,10.10.10.96:9080,10.10.10.66:9080",
"disk_encrypted" : false,
"kafka_private_connect_address" : "192.168.0.227:9093,192.168.0.234:9093,192.168.0.57:9093",
"enable_auto_topic" : false,
"ces_version" : "linux,v1,v2",
"plugin_enable" : false,
"public_access_enabled" : "false",
"node_num" : 3
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

5.2 Topic Management

5.2.1 Querying Topics

Function

This API is used to query a list of topics.

URI

GET /v2/{project_id}/mqs/instances/{instance_id}/topics

Table 5-7 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Table 5-8 Query parameters

Parameter	Mandatory	Type	Description
app_name	No	String	Application name.
name	No	String	Topic name.
access_policy	No	String	Permission type. • all: publish+subscribe • pub: publish • sub: subscribe
limit	No	String	Maximum number of records to be displayed on a page. By default, all topics are queried.

Parameter	Mandatory	Type	Description
offset	No	String	Offset of the pagination query. The default value is 0 .

Request Parameters

None

Response Parameters

Status code: 200

Table 5-9 Response body parameters

Parameter	Type	Description
total	Integer	Total number of topics.
size	Integer	Number of topics to query.
permissions	Array of strings	Operation permissions.
topics	Array<Object>	Topic list.
policies	Array<Object>	Permission list.
remain_partitions	Integer	Number of remaining partitions.
max_partitions	Integer	Total number of partitions.

Table 5-10 topics

Parameter	Type	Description
policiesOnly	Boolean	Whether only the policies are updated.
name	String	Topic name.
replication	Integer	Number of replicas, which is configured to ensure data reliability.
partition	Integer	Number of topic partitions, which is used to set the number of concurrently consumed messages.

Parameter	Type	Description
retention_time	Integer	Message retention period.
sync_message_flush	Boolean	Whether synchronous flushing is enabled. The default value is false . Synchronous flushing compromises performance.
sync_replication	Boolean	Whether synchronous replication is enabled. After this function is enabled, the acks parameter on the producer client must be set to -1 . Otherwise, this parameter does not take effect.
app_id	String	Application ID.
app_name	String	Application name.
permissions	Array of strings	Operation permissions.
external_configs	Object	Other configurations.
description	String	Description.
sensitive_word	String	Sensitive word.
topic_type	Integer	Topic type.

Table 5-11 policies

Parameter	Type	Description
owner	Boolean	Whether the application is the one selected during topic creation.
user_name	String	Key of the integration application.
app_name	String	Application name.
access_policy	String	Permission type. • all: publish + subscribe • pub: publish • sub: subscribe

Parameter	Type	Description
tag	String	Tag corresponding to the permission type. When the permission type is all, the publish and subscribe tags are separated by ampersands (&). If there are multiple tags, use double vertical bars () to separate them.

Example Requests

GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics

Example Responses

Status code: 200

OK

```
{
  "total" : 91,
  "size" : 1,
  "permissions" : [ "modify" ],
  "topics" : [ {
    "policiesOnly" : false,
    "name" : "topic-test",
    "replication" : 3,
    "partition" : 3,
    "retention_time" : 72,
    "sync_replication" : false,
    "sync_message_flush" : false,
    "app_id" : "ba1408c8-xxxx-xxxx-xxxx-21a218f4xxxx",
    "app_name" : "app-test",
    "permissions" : [ "read", "access", "delete", "modify" ],
    "external_configs" : { },
    "description" : "",
    "sensitive_word" : "",
    "topic_type" : 0
  } ],
  "policies" : {
    "owner" : false,
    "user_name" : "user-test",
    "app_name" : "app-test",
    "access_policy" : "pub",
    "tag" : "pub_tag"
  },
  "remain_partitions" : 37,
  "max_partitions" : 300
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request

Status Code	Description
403	Forbidden

Error Codes

See [Error Codes](#).

5.2.2 Creating a Topic

Function

This API is used to create a topic.

URI

POST /v2/{project_id}/mqs/instances/{instance_id}/topics

Table 5-12 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 5-13 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Topic name, which must start with a letter and contains 3 to 200 characters. Only digits, letters, underscores (_), and hyphens (-) are allowed.
app_id	Yes	String	Application ID.
partition	No	Integer	Number of topic partitions, which is used to set the number of concurrently consumed messages. Value range: 1 to 50. Default value: 3.

Parameter	Mandatory	Type	Description
replication	No	Integer	Number of replicas, which is used to configure data reliability. Value range: 1 to 3. Default value: 3. NOTE The number of replicas for an instance of the trial edition can only be 1.
access_policy	Yes	String	Permission type. • all: publish+subscribe • pub: publish • sub: subscribe
sync_message_flush	No	Boolean	Whether synchronous flushing is enabled. The default value is false . Synchronous flushing compromises performance.
sync_replication	No	Boolean	Whether synchronous replication is enabled. After this function is enabled, the acks parameter on the producer client must be set to -1 . Otherwise, this parameter does not take effect.
retention_time	No	Integer	Message retention period. The default value is 72 . Value range: 1 to 720, in hours
tag	No	String	Tag corresponding to the permission type. When the permission type is all , publish and subscribe tags are separated by ampersands (&). Multiple tags are separated by double vertical bars ().
description	No	String	Description. A maximum of 1000 characters can be contained.
sensitive_word	No	String	Sensitive word. Multiple sensitive words are separated by double vertical bars ().

Response Parameters

Status code: 200

Table 5-14 Response body parameters

Parameter	Type	Description
name	String	Topic name.

Example Requests

```
POST https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics
{
  "name" : "topic-test-2",
  "app_id" : "c5abd910-02b1-4bc4-b587-c3fe4c49dab9",
  "partition" : 3,
  "access_policy" : "all",
  "replication" : 3,
  "retention_time" : 72,
  "sync_replication" : false,
  "sync_message_flush" : false,
  "tag" : "11 || 22 || aa || bb&11 || 22 || aa || bb",
  "description" : "test",
  "sensitive_word" : "sss || ddd"
}
```

Example Responses

Status code: 200

OK

```
{
  "name" : "topic-mqs-test"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.2.3 Modifying a Topic

Function

This API is used to modify a topic.

URI

PUT /v2/{project_id}/mq/instances/{instance_id}/topics

Table 5-15 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 5-16 Request body parameters

Parameter	Mandatory	Type	Description
topics	Yes	Array of UpdateTopicObject objects	Topic list.

Table 5-17 UpdateTopicObject

Parameter	Mandatory	Type	Description
name	Yes	String	Topic name.
retention_time	No	Integer	Message retention period. The default value is 72 . Value range: 1 to 720, in hours
sync_replication	No	Boolean	Whether synchronous replication is enabled.
sync_message_flush	No	Boolean	Whether synchronous flushing is enabled.
description	No	String	Description.
sensitive_word	No	String	Sensitive fields.

Response Parameters

None

Example Requests

```
PUT https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics
{
  "topics": [ {
    "name": "topic-test",
    "retention_time": 72,
    "sync_replication": true,
    "sync_message_flush": true,
    "description": "",
    "sensitive_word": ""
  } ]
}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
206	Partial Content
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.2.4 Deleting Topics in Batches

Function

This API is used to delete topics in batches.

URI

DELETE /v2/{project_id}/mqs/instances/{instance_id}/topics

Table 5-18 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID.

Table 5-19 Query parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Topics to delete. Multiple topics are separated by commas (,).

Request Parameters

None

Response Parameters

Status code: 200

Table 5-20 Response body parameters

Parameter	Type	Description
topics	Array<Object>	Topic list.

Table 5-21 topics

Parameter	Type	Description
id	String	Topic name.
success	Boolean	Whether the topics are deleted.

Example Requests

```
DELETE https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics?name=topic-mqs-test1,topic-mqs-test2
```

Example Responses

Status code: 200

OK

```
{  
  "topics": [ {  
    "id": "topic-mqs-test1",
```

```
"success" : true
}, {
  "id" : "topic-mqs-test2",
  "success" : true
}]
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.2.5 Deleting Topics in Batches

Function

This API is used to delete topics in batches.

URI

POST /v2/{project_id}/mqs/instances/{instance_id}/topics/delete

Table 5-22 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 5-23 Request body parameters

Parameter	Mandatory	Type	Description
topics	Yes	Array of strings	List of topics to delete.

Response Parameters

Status code: 200

Table 5-24 Response body parameters

Parameter	Type	Description
topics	Array<Object>	List of topics to delete.

Table 5-25 topics

Parameter	Type	Description
id	String	Topic name.
success	Boolean	Whether the topics are deleted.

Example Requests

```
POST https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics/delete
{
  "topics" : [ "topic-test-2" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "topics" : [ {
    "id" : "topic-test-2",
    "success" : true
  } ]
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.2.6 Importing Topics

Function

This API is used to import topics.

URI

POST /v2/{project_id}/mqs/instances/{instance_id}/topics/import

Table 5-26 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Table 5-27 Query parameters

Parameter	Mandatory	Type	Description
mode	No	String	Mode for importing topics. • AddNew: full import. • Merge: incremental import. The default value is AddNew .
prefix	No	String	Prefix of an application name. If a prefix is carried, the prefix is added to the existing application name to form a new application name. Then, the topic is imported based on the new application name.

Request Parameters

Table 5-28 FormData parameters

Parameter	Mandatory	Type	Description
upload_file_name	Yes	File	List of topics to be imported.

Response Parameters

None

Example Requests

POST https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics/import

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See [Error Codes](#).

5.2.7 Exporting Topics

Function

This API is used to export topics.

URI

GET /v2/{project_id}/mqs/instances/{instance_id}/topics/export

Table 5-29 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Table 5-30 Query parameters

Parameter	Mandatory	Type	Description
name	No	String	Topics to export. Multiple topics are separated by commas (.). By default, all topics are exported.

Request Parameters

None

Response Parameters

Status code: 200

Table 5-31 Response body parameters

Parameter	Type	Description
-	File	OK

Example Requests

GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics/export?name=topic-mqs-test

Example Responses

None

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.3 Message Management

5.3.1 Querying a Message

Function

This API is used to query the offset and content of a message. This API queries the message offset based on the timestamp and then queries the message content based on the offset.

URI

GET /v2/{project_id}/mqs/instances/{instance_id}/messages

Table 5-32 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Table 5-33 Query parameters

Parameter	Mandatory	Type	Description
topic	Yes	String	Topic name.
asc	No	Boolean	Whether to sort messages by time.
start_time	No	String	Start time (Unix timestamp, in millisecond). This parameter is mandatory when querying the message offset.
end_time	No	String	End time (Unix timestamp, in millisecond). This parameter is mandatory when querying the message offset.
limit	No	String	Number of messages to query.
offset	No	String	Offset of the pagination query.
download	No	Boolean	Whether download is required.
message_offset	No	String	Message offset. This parameter is mandatory when querying the message content. If start_time and end_time are not empty, this parameter is invalid.
partition	No	String	Partition. This parameter is mandatory when querying the message content. If start_time and end_time are not empty, this parameter is invalid.
key	No	String	Message key.
message_id	No	String	Message ID.

Parameter	Mandatory	Type	Description
tag	No	String	Message tag.

Request Parameters

None

Response Parameters

Status code: 200

Table 5-34 Response body parameters

Parameter	Type	Description
messages	Array<Object>	Message list.
total	Number	Total number of messages.
size	Number	Total number of returned messages.

Table 5-35 messages

Parameter	Type	Description
topic	String	Topic name.
partition	Integer	Partition where the message is located.
key	String	Message key.
value	String	Message content.
size	Integer	Message size.
timestamp	Integer	Topic name.
huge_message	Boolean	Big data flag.
message_offset	Integer	Message offset.
message_id	String	Message ID.
app_id	String	Application ID.
tag	String	Message tag.

Example Requests

- Query the message offset.

```
GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/messages?asc=false&end_time=1608609032042&limit=10&offset=0&start_time=1608608432042&topic=topic-test-mqs
```

- Query the message content.

```
GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/messagesdownload=false&message_offset=0&partition=0&topic=topic-test-mqs
```

Example Responses

Status code: 200

OK

```
{
  "messages": [ {
    "topic": "topic-test",
    "partition": 0,
    "value": "hello world",
    "size": 21,
    "timestamp": 1607598463502,
    "huge_message": false,
    "message_offset": 4,
    "message_id": "",
    "app_id": "",
    "tag": ""
  } ],
  "total": 1,
  "size": 1
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.3.2 Retransmitting a Message

Function

This API is used to retransmit a message.

URI

POST /v2/{project_id}/mqs/instances/{instance_id}/messages/action

Table 5-36 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Table 5-37 Query parameters

Parameter	Mandatory	Type	Description
action_id	Yes	String	Retransmission type. Currently, only resend is supported.

Request Parameters

Table 5-38 Request body parameters

Parameter	Mandatory	Type	Description
topic	Yes	String	Topic name.
partition	Yes	Integer	Partition.
message_offset	Yes	Number	Message offset.

Response Parameters

Status code: 200

Table 5-39 Response body parameters

Parameter	Type	Description
topic	String	Topic name.
partition	Integer	Partition.
message_offset	Integer	Message offset.

Example Requests

```
POST https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/messages/action?action_id=resend
{
  "topic": "topic-test",
  "partition": 0,
```

```
"message_offset" : 4
}
```

Example Responses

Status code: 200

OK

```
{
  "topic" : "topic-test",
  "partition" : 0,
  "message_offset" : 4
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.4 Permission Management

5.4.1 Updating a Topic Permission

Function

This API is used to update the permission of a topic.

URI

POST /v2/{project_id}/mq5/instances/{instance_id}/topics/accesspolicy

Table 5-40 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.

Request Parameters

Table 5-41 Request body parameters

Parameter	Mandatory	Type	Description
topics	Yes	Array of UpdateTopicAccessPolicyTopicsObject objects	Policy list.

Table 5-42 UpdateTopicAccessPolicyTopicsObject

Parameter	Mandatory	Type	Description
name	Yes	String	Topic name.
policies	Yes	Array of UpdateTopicAccessPolicyPoliciesObject objects	Access policies.
description	No	String	Description.
sensitive_word	No	String	Sensitive field.

Table 5-43 UpdateTopicAccessPolicyPoliciesObject

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID.
app_name	Yes	String	Application name.
access_policy	Yes	String	Permission type. • all: publish+subscribe • pub: publish • sub: subscribe
owner	No	Boolean	Whether the application is the one selected during topic creation. The default value is false.

Parameter	Mandatory	Type	Description
tag	No	String	Tag corresponding to the permission type. When the permission type is all , publish and subscribe tags are separated by ampersands (&). Multiple tags are separated by double vertical bars ().

Response Parameters

None

Example Requests

```
POST https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics/accesspolicy
{
  "topics": [ {
    "name": "topic-test-mqs",
    "policies": [ {
      "owner": true,
      "access_policy": "pub",
      "app_name": "app-dhytest",
      "tag": "",
      "selected": {
        "access_policy": "publish",
        "key": "pub"
      },
      "app_id": "cd28a9d9-2184-42ce-9fbe-f3785b6caada"
    } ],
    "sensitive_word": "",
    "description": ""
  } ]
}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

5.4.2 Querying a Topic Permission

Function

This API is used to query the permission of a topic.

URI

GET /v2/{project_id}/mqs/instances/{instance_id}/topics/{topic_name}/accesspolicy

Table 5-44 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Tenant's project ID.
instance_id	Yes	String	Instance ID.
topic_name	Yes	String	Topic name.

Table 5-45 Query parameters

Parameter	Mandatory	Type	Description
offset	No	String	Offset of the pagination query.
limit	No	String	Maximum number of records to be displayed on a page.

Request Parameters

None

Response Parameters

Status code: 200

Table 5-46 Response body parameters

Parameter	Type	Description
name	String	Topic name.
policies	Array<Object>	Policy list.
total	Integer	Total number of policies.

Parameter	Type	Description
size	Integer	Number of policies queried.
operation	String	Topic name.

Table 5-47 policies

Parameter	Type	Description
owner	Boolean	Whether the application is the one selected during topic creation.
user_name	String	Application ID.
access_policy	String	Permission type. • all: publish+subscribe • pub: publish -sub: subscribe
app_name	String	Application name.
tag	String	Tag corresponding to the permission type.

Example Requests

GET https://{endpoint}/v2/{project_id}/mqs/instances/{instance_id}/topics/{topic_name}/accesspolicy

Example Responses

Status code: 200

OK

```
{
  "name" : "topic-test",
  "policies" : [ {
    "owner" : true,
    "user_name" : "c5abd910-02b1-4bc4-b587-c3fe4c49dab9",
    "access_policy" : "pub",
    "app_name" : "topic test",
    "tag" : "11 || 22 || aa || bb"
  } ],
  "total" : 1,
  "size" : 1,
  "operation" : "topic-test"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
403	Forbidden

Error Codes

See [Error Codes](#).

6 Device Integration APIs

6.1 Device Group Management

6.1.1 Creating a Device Group

Function

This API is used to create a device group.

URI

POST /v2/{project_id}/link/instances/{instance_id}/device-groups

Table 6-1 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-2 Request body parameters

Parameter	Mandatory	Type	Description
parent_id	Yes	Integer	Parent group ID. The value is automatically rounded down. Minimum: 0 Maximum: 9999999999999999
name	Yes	String	Group name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Group description. Minimum: 0 Maximum: 200
app_id	Yes	String	ID of the application to which the group belongs. Minimum: 0 Maximum: 36

Response Parameters

Status code: 200**Table 6-3** Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
parent_id	Integer	Parent group ID. Minimum: 1 Maximum: 9999999999999999
id	Integer	Group ID Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
name	String	Group name, which is a string of 2 to 64 characters containing letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Group description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
app_id	String	ID of the application to which the group belongs. Minimum: 0 Maximum: 36
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	String	Time when the group was created. Minimum: 0 Maximum: 50
last_updated_datetime	String	Last modification time. Minimum: 0 Maximum: 50
app_name	String	Application name. Minimum: 0 Maximum: 50

Table 6-4 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-5 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-6** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-7** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-8 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "parent_id" : 10001,
  "name" : "device_group",
  "description" : "device group",
  "app_id" : "ef3845be-091a-4ab5-869a-9de0025e2165"
}
```

Example Responses

Status code: 200

Created

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "parent_id" : 0,
  "id" : 1,
  "name" : "group1",
  "description" : "group",
  "app_id" : "fe382523-cf76-4152-9fc6-f772d4427302",
  "created_user" : {
    "user_id" : "6546435432432",
    "user_name" : "user1"
  },
  "last_updated_user" : {
    "user_id" : "6546435432432",

```

```
{
  "user_name" : "user1"
},
"created_datetime" : "2020-12-11",
"last_updated_datetime" : "2020-12-11",
"app_name" : "app-link"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-groups.save]. Parameter is [request]. Processor is [body].",
  "requestId" : "4946aac3-6f8f-46b8-8b06-513f4084196c-1619602488278-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.2 Querying All Device Groups

Function

This API is used to query all device groups.

URI

GET /v2/{project_id}/link/instances/{instance_id}/device-groups

Table 6-9 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-10 Query parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 36

Request Parameters

None

Response Parameters

Status code: 200

Table 6-11 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 99999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 9999

Parameter	Type	Description
items	Array of GroupTreeResponse objects	Device group information.

Table 6-12 GroupTreeResponse

Parameter	Type	Description
id	Integer	Group ID. Minimum: 1 Maximum: 99999999
name	String	Group name. Minimum: 0 Maximum: 200
parent_id	Integer	Parent group ID. Minimum: 1 Maximum: 99999999
children	Array of GroupTreeResponse objects	Child group.
app_id	String	Application ID. Minimum: 0 Maximum: 200
permissions	Array of strings	Permission.

Status code: 400**Table 6-13** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-14** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-15** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/device-groups
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "permissions" : [ "read", "access", "delete", "modify" ],
    "id" : 14,
    "name" : "group_name",
    "parent_id" : 0,
    "children" : [ ],
    "app_id" : "fe382523-cf76-4152-9fc6-f772d4427302"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-groups.selectGroupNodeTree].  
Parameter is [app_id]. Processor is [query].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.3 Deleting a Device Group

Function

This API is used to delete a device group.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/device-groups/{group_id}

Table 6-16 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
group_id	Yes	Integer	Device group ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-17 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-18 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-19 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/device-groups/{group_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-groups.delete]. Parameter is [group_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.4 Querying Device Group Details

Function

This API is used to query the information about a device group.

URI

GET /v2/{project_id}/link/instances/{instance_id}/device-groups/{group_id}

Table 6-20 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
group_id	Yes	Integer	Device group ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-21 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
parent_id	Integer	Parent group ID. Minimum: 1 Maximum: 999999999999999999
id	Integer	Group ID Minimum: 1 Maximum: 999999999999999999
name	String	Group name, which is a string of 2 to 64 characters containing letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Group description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
app_id	String	ID of the application to which the group belongs. Minimum: 0 Maximum: 36
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	String	Time when the group was created. Minimum: 0 Maximum: 50

Parameter	Type	Description
last_updated_datetime	String	Last modification time. Minimum: 0 Maximum: 50
app_name	String	Application name. Minimum: 0 Maximum: 50

Table 6-22 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-23 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-24** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-25** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-26** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/device-groups/{group_id}
```

Example Responses

Status code: 200

OK

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "parent_id": 0,
  "id": 1,
  "name": "group1",
  "description": "group",
  "app_id": "fe382523-cf76-4152-9fc6-f772d4427302",
  "created_user": {
    "user_id": "6546435432432",
    "user_name": "user1"
  },
  "last_updated_user": {
    "user_id": "6546435432432",
    "user_name": "user1"
  },
  "created_datetime": "2020-12-11",
  "last_updated_datetime": "2020-12-11",
  "app_name": "app-link"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "SCB.00000000",
  "error_msg": "Parameter is not valid for operation [romalink.link-device-groups.searchOne]. Parameter is [group_id]. Processor is [path].",
  "requestId": "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code": "ROMA.00110006",
  "error_msg": "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId": "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "ROMA.00110002",

```

```
"error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",  
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.5 Modifying a Device Group

Function

This API is used to modify information of a device group.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/device-groups/{group_id}

Table 6-27 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Parameter	Mandatory	Type	Description
group_id	Yes	Integer	Device group ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-28 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Group name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Group description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Response Parameters

Status code: 200

Table 6-29 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
parent_id	Integer	Parent group ID. Minimum: 1 Maximum: 999999999999999999
id	Integer	Group ID Minimum: 1 Maximum: 999999999999999999

Parameter	Type	Description
name	String	Group name, which is a string of 2 to 64 characters containing letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Group description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
app_id	String	ID of the application to which the group belongs. Minimum: 0 Maximum: 36
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	String	Time when the group was created. Minimum: 0 Maximum: 50
last_updated_datetime	String	Last modification time. Minimum: 0 Maximum: 50
app_name	String	Application name. Minimum: 0 Maximum: 50

Table 6-30 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-31 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-32 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-33 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-34 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "device_group",
  "description" : "device group"
}
```

Example Responses

Status code: 200

OK

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "parent_id" : 0,
  "id" : 1,
  "name" : "group1",
  "description" : "group",
  "app_id" : "fe382523-cf76-4152-9fc6-f772d4427302",
  "created_user" : {
    "user_id" : "6546435432432",
    "user_name" : "user1"
  },
  "last_updated_user" : {
    "user_id" : "6546435432432",
    "user_name" : "user1"
  },
}
```

```
"created_datetime" : "2020-12-11",  
"last_updated_datetime" : "2020-12-11",  
"app_name" : "app-link"  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-groups.update]. Parameter is  
[group_id]. Processor is [path].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00110006",  
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",  
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.6 Adding Devices to a Device Group in Batches

Function

This API is used to add devices to a device group in batches.

URI

POST /v2/{project_id}/link/instances/{instance_id}/device-groups/{group_id}/
devices/batch-add

Table 6-35 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
group_id	Yes	Integer	Device group ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

Table 6-36 Request body parameters

Parameter	Mandatory	Type	Description
resources	Yes	Array of integers	Device ID list. The value is automatically rounded down.

Response Parameters

Status code: 400

Table 6-37 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-38** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-39** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "resources" : [ 1001, 1002 ]
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-groups.addDeviceIntoGroup].  
Parameter is [batchRequest]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.1.7 Deleting Devices from a Device Group

Function

This API is used delete devices from a device group.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/device-groups/{group_id}/
devices/{device_id}

Table 6-40 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999
group_id	Yes	Integer	Device group ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: **400**

Table 6-41 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-42** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-43** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/device-groups/{group_id}/devices/{device_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-
groups.deleteDeviceRelFromGroup]. Parameter is [group_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No content
400	Bad Request
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2 Device Management

6.2.1 Creating a Device

Function

This API is used to create a device.

URI

POST /v2/{project_id}/link/instances/{instance_id}/devices

Table 6-44 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-45 Request body parameters

Parameter	Mandatory	Type	Description
parent_device_id	No	Integer	Parent device ID. If there is no parent device, this parameter is left empty and the value is automatically rounded down. Minimum: 1 Maximum: 9999999999999999
product	Yes	ProductRefer object	Product.
password	No	String	Device password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+=+[[{}];;<>/?). Minimum: 8 Maximum: 32
device_name	Yes	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.?'-@%&!, Minimum: 2 Maximum: 64
node_id	Yes	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 36

Parameter	Mandatory	Type	Description
status	No	Integer	Device status. The options are as follows: 0 (enabled) and 1 (disabled). If this parameter is left empty, the default value 0 is used. Minimum: 0 Maximum: 10
description	No	String	Description. Minimum: 0 Maximum: 200
tags	No	Array of strings	Tag.

Table 6-46 ProductReferer

Parameter	Mandatory	Type	Description
product_id	No	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	No	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	No	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
model	No	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
protocol_type	No	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	No	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Response Parameters

Status code: 201

Table 6-47 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductReferer object	Product.
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.'-@%&!, Minimum: 2 Maximum: 64

Parameter	Type	Description
instance_id	String	Instance ID. Minimum: 2 Maximum: 64
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
tags	Array of strings	Tag.

Parameter	Type	Description
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200
last_login_datetime	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10
client_ip	String	Client IP address. Minimum: 0 Maximum: 64

Parameter	Type	Description
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-48 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64

Parameter	Type	Description
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-49 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Table 6-50 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-51 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-52 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-53 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-54 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "parent_device_id" : 10001,
  "password" : "test",
  "device_name" : "device",
  "node_id" : "D32145A100FF",
  "app_id" : "ef3845be-091a-4ab5-869a-9de0025e2165",
  "status" : 0,
  "description" : "device",
  "tags" : [ "tag1, tag2" ]
}
```

Example Responses

Status code: 201

Created

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "id" : 711537,
  "parent_device_id" : 711536,
  "parent_device_name" : "parent-device",
  "product" : {
    "product_id" : 116303,
    "product_name" : "p1",
    "manufacturer_id" : "p1",
  }
}
```



```
{
  "model" : "p1",
  "product_type" : 0,
  "protocol_type" : 0
},
{
  "device_name" : "device",
  "instance_id" : "8993a690-cf61-46af-880d-587d823d14e5",
  "client_id" : "D116303711537sGDtK",
  "node_id" : "string",
  "app_name" : "app",
  "status" : 0,
  "online_status" : 2,
  "description" : "device",
  "authentication" : {
    "user_name" : "F01A8D25FE6E4CF5A286B711B31888AE",
    "password" : "*****"
  },
  "created_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "last_updated_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "tags" : [ ],
  "created_datetime" : 1607408244841,
  "last_updated_datetime" : 1607422571094,
  "connect_address" : "xx.xx.xx.xx",
  "ssl_connect_address" : "xx.xx.xx.xx",
  "ipv6_connect_address" : "xx.xx.xx.xx",
  "ipv6_ssl_connect_address" : "xx.xx.xx.xx",
  "last_login_datetime" : null,
  "node_type" : 0,
  "device_type" : 0,
  "client_ip" : "xx.xx.xx.xx",
  "keep_alive" : 60,
  "last_active_time" : 1608082247010,
  "version" : 4,
  "plugin_id" : 2,
  "app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.save]. Parameter is [parent_device_id]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "Internal server error."
}
```

```
"error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",  
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.2 Querying Devices

Function

This API is used to query devices.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices

Table 6-55 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-56 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0
app_id	No	String	Application ID. Minimum: 0 Maximum: 36
product_id	No	Integer	ID of the product to which the device belongs. Minimum: 1 Maximum: 999999999999999999
product_name	No	String	Name of the product to which the device belongs. Minimum: 2 Maximum: 32
device_name	No	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.'-@%&!, Minimum: 2 Maximum: 64
client_id	No	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 2 Maximum: 32

Parameter	Mandatory	Type	Description
node_id	No	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
node_type	No	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. If this parameter is not transferred, all devices are queried by default. Minimum: 0 Maximum: 10
online_status	No	String	Whether a device is online. The options are as follows: 0: not connected; 1: online; 2: offline. Use commas (,) to separate multiple values. Minimum: 0 Maximum: 10
created_date_start	No	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
created_date_end	No	Long	Creation end time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
tag	No	String	Tag. Minimum: 0 Maximum: 200

Request Parameters

None

Response Parameters

Status code: 200

Table 6-57 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 99999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 1000
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200
items	Array of Device objects	Device ID list.

Table 6-58 Device

Parameter	Type	Description
permissions	Array of strings	Permission.

Parameter	Type	Description
id	Integer	Device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductReference object	Product.
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.?'-@%&!, Minimum: 2 Maximum: 64
instance_id	String	Instance ID. Minimum: 2 Maximum: 64
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10

Parameter	Type	Description
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
tags	Array of strings	Tag.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200

Parameter	Type	Description
last_login_date_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10
client_ip	String	Client IP address. Minimum: 0 Maximum: 64
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-59 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-60 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64

Parameter	Type	Description
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Table 6-61 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-62 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-63 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-64** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-65** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "connect_address" : "xx.xxx.xxx.xxx",
  "ssl_connect_address" : "xx.xxx.xxx.xxx",
  "ipv6_connect_address" : "xx.xxx.xxx.xxx",
  "ipv6_ssl_connect_address" : "xx.xxx.xxx.xxx",
  "items" : [ {
    "permissions" : [ "read", "access", "delete", "modify" ],
    "id" : 711537,
    "parent_device_id" : 711536,
    "parent_device_name" : "parent-device",
    "product" : {
      "product_id" : 116303,
      "product_name" : "p1",
      "manufacturer_id" : "p1",
      "model" : "p1",
      "product_type" : 0,
      "protocol_type" : 0
    },
    "device_name" : "device",
    "instance_id" : "8993a690-cf61-46af-880d-587d823d14e5",
    "client_id" : "D116303711537sGDtK",
    "node_id" : "string",
    "app_name" : "app",
    "status" : 0,
    "online_status" : 2,
    "description" : "device",
    "authentication" : {
      "user_name" : "F01A8D25FE6E4CF5A286B711B31888AE",
      "password" : "*****"
    },
    "created_user" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "last_updated_user" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "tags" : [ ],
  } ]
}
```

```
"created_datetime" : 1607408244841,
"last_updated_datetime" : 1607422571094,
"connect_address" : "xx.xx.xx.xx",
"ssl_connect_address" : "xx.xx.xx.xx",
"ipv6_connect_address" : "xx.xx.xx.xx",
"ipv6_ssl_connect_address" : "xx.xx.xx.xx",
"last_login_datetime" : null,
"node_type" : 0,
"device_type" : 0,
"client_ip" : "xx.xx.xx.xx",
"keep_alive" : 60,
"last_active_time" : 1608082247010,
"version" : 4,
"plugin_id" : 2,
"app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.batchQuery]. Parameter is
[node_type]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.3 Bringing Devices Offline in Batches

Function

Bringing Devices Offline in Batches

URI

POST /v2/{project_id}/link/instances/{instance_id}/devices/force-offline

Table 6-66 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-67 Request body parameters

Parameter	Mandatory	Type	Description
device_ids	Yes	Array of integers	Device ID list. The value is automatically rounded down.

Response Parameters

Status code: 200

Table 6-68 Response body parameters

Parameter	Type	Description
success	Array of DeviceInfoSimple objects	List of devices that are successfully brought offline.
failed	Array of DeviceInfoSimple objects	List of devices that fail to be brought offline.

Table 6-69 DeviceInfoSimple

Parameter	Type	Description
id	Integer	Device ID. Minimum: 1 Maximum: 999999999999999999
device_name	String	Device name. Minimum: 0 Maximum: 32

Status code: 400**Table 6-70** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-71 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-72** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{  
  "device_ids" : [ 10001, 10002 ]  
}
```

Example Responses

Status code: 200

OK

```
{  
  "success" : [ {
```



```
{
  "id" : 711554,
  "device_name" : "success"
},
"failed" : [ {
  "id" : 711554,
  "device_name" : "failed"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.forceDisconnect]. Parameter is [deviceDisconnectRequest]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.4 Deleting a Device

Function

This API is used to delete a device by device ID.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}

Table 6-73 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-74 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-75** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-76** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/devices/{device_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.delete]. Parameter is [deviceId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.5 Querying Device Details

Function

This API is used to query the details of a specified device.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}

Table 6-77 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-78 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.

Parameter	Type	Description
id	Integer	Device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductReference object	Product.
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.?'-@%&!, Minimum: 2 Maximum: 64
instance_id	String	Instance ID. Minimum: 2 Maximum: 64
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10

Parameter	Type	Description
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
tags	Array of strings	Tag.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200

Parameter	Type	Description
last_login_date_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10
client_ip	String	Client IP address. Minimum: 0 Maximum: 64
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-79 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-80 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64

Parameter	Type	Description
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Table 6-81 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-82 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-83 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-84** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-85** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices/{device_id}
```

Example Responses

Status code: 200

OK

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "id": 711537,
  "parent_device_id": 711536,
  "parent_device_name": "parent-device",
  "product": {
    "product_id": 116303,
    "product_name": "p1",
    "manufacturer_id": "p1",
    "model": "p1",
    "product_type": 0,
    "protocol_type": 0
  },
  "device_name": "device",
  "instance_id": "8993a690-cf61-46af-880d-587d823d14e5",
  "client_id": "D116303711537sGDtK",
  "node_id": "string",
  "app_name": "app",
  "status": 0,
  "online_status": 2,
  "description": "device",
  "authentication": {
    "user_name": "F01A8D25FE6E4CF5A286B711B31888AE",
    "password": "*****"
  },
  "created_user": {
    "user_id": null,
    "user_name": "user"
  },
  "last_updated_user": {
    "user_id": null,
    "user_name": "user"
  },
  "tags": [ ],
  "created_datetime": 1607408244841,
  "last_updated_datetime": 1607422571094,
  "connect_address": "xx.xx.xx.xx",
  "ssl_connect_address": "xx.xx.xx.xx",
  "ipv6_connect_address": "xx.xx.xx.xx",
  "ipv6_ssl_connect_address": "xx.xx.xx.xx",
  "last_login_datetime": null,
}
```

```
"node_type" : 0,  
"device_type" : 0,  
"client_ip" : "xx.xx.xx.xx",  
"keep_alive" : 60,  
"last_active_time" : 1608082247010,  
"version" : 4,  
"plugin_id" : 2,  
"app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.query]. Parameter is [deviceId].  
Processor is [path].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00110006",  
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",  
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.6 Modifying a Device

Function

This API is used to modify information of a device.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}

Table 6-86 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-87 Request body parameters

Parameter	Mandatory	Type	Description
device_name	Yes	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.?'-@%&!, Minimum: 2 Maximum: 64

Parameter	Mandatory	Type	Description
status	Yes	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
description	No	String	Description. Minimum: 0 Maximum: 200
tags	No	Array of strings	Tag.

Response Parameters

Status code: 200

Table 6-88 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductRefer object	Product.
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.'-@%&!, Minimum: 2 Maximum: 64

Parameter	Type	Description
instance_id	String	Instance ID. Minimum: 2 Maximum: 64
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
tags	Array of strings	Tag.

Parameter	Type	Description
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200
last_login_datetime	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10
client_ip	String	Client IP address. Minimum: 0 Maximum: 64

Parameter	Type	Description
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-89 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64

Parameter	Type	Description
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-90 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Table 6-91 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-92 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-93** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-94** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-95 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "device_name" : "device",
  "status" : 0,
  "description" : "device",
  "tags" : [ "tag1", "tag2" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "id" : 711537,
  "parent_device_id" : 711536,
  "parent_device_name" : "parent-device",
  "product" : {
    "product_id" : 116303,
    "product_name" : "p1",
    "manufacturer_id" : "p1",
    "model" : "p1",
    "product_type" : 0,
    "protocol_type" : 0
  },
}
```

```
"device_name" : "device",
"instance_id" : "8993a690-cf61-46af-880d-587d823d14e5",
"client_id" : "D116303711537sGDtK",
"node_id" : "string",
"app_name" : "app",
"status" : 0,
"online_status" : 2,
"description" : "device",
"authentication" : {
  "user_name" : "F01A8D25FE6E4CF5A286B711B31888AE",
  "password" : "*****"
},
"created_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"last_updated_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"tags" : [ ],
"created_datetime" : 1607408244841,
"last_updated_datetime" : 1607422571094,
"connect_address" : "xx.xx.xx.xx",
"ssl_connect_address" : "xx.xx.xx.xx",
"ipv6_connect_address" : "xx.xx.xx.xx",
"ipv6_ssl_connect_address" : "xx.xx.xx.xx",
"last_login_datetime" : null,
"node_type" : 0,
"device_type" : 0,
"client_ip" : "xx.xx.xx.xx",
"keep_alive" : 60,
"last_active_time" : 1608082247010,
"version" : 4,
"plugin_id" : 2,
"app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.update]. Parameter is
[deviceOid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.7 Querying Device Topics

Function

This API is used to query device topics.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/topics

Table 6-96 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 9999999999999999

Table 6-97 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0
name	No	String	Topic name. Default: name Minimum: 0 Maximum: 100
topic_permission	No	Integer	Topic permission. 0: publish 1: subscribe Minimum: 0 Maximum: 1
topic_type	No	Integer	Topic type. 0: device topic 1: product topic Minimum: 0 Maximum: 1
is_private	No	Integer	Whether a topic is customized. 0: basic topic 1: customized topic Minimum: 0 Maximum: 1

Request Parameters

None

Response Parameters

Status code: 200

Table 6-98 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 99999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 1000
items	Array of Topic objects	Topic list.

Table 6-99 Topic

Parameter	Type	Description
id	Integer	Topic ID. Minimum: 1 Maximum: 999999999999999999
name	String	Topic name. Minimum: 0 Maximum: 32
description	String	Topic description. Minimum: 0 Maximum: 64
permission	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10
is_private	Integer	Topic type. The options are as follows: 0: basic topic; 1: custom topic. Minimum: 0 Maximum: 10

Status code: 400

Table 6-100 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-101** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-102** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices/{device_id}/topics
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "id" : 1528605,
    "name" : "/v1/devices/device/datas",
    "description" : "Device data report",
    "permission" : 0,
    "isPrivate" : 0
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device-topics.queryTopics]. Parameter is [deviceId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
}
```

```
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.8 Adding a Subdevice to the Gateway

Function

This API is used to add a subdevice to the gateway.

URI

POST /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/subsets

Table 6-103 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-104 Request body parameters

Parameter	Mandatory	Type	Description
resources	Yes	Array of integers	List of subdevices to add. The value must be a common device ID, which is automatically rounded down.

Response Parameters

Status code: 201**Table 6-105** Response body parameters

Parameter	Type	Description
Device	Array of Device objects	Created

Table 6-106 Device

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 9999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductReference object	Product.

Parameter	Type	Description
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.'-@%&!, Minimum: 2 Maximum: 64
instance_id	String	Instance ID. Minimum: 2 Maximum: 64
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.

Parameter	Type	Description
last_updated_user	LastUpdated User object	User who performed the last update.
tags	Array of strings	Tag.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200
last_login_datetime	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10

Parameter	Type	Description
client_ip	String	Client IP address. Minimum: 0 Maximum: 64
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-107 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64

Parameter	Type	Description
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-108 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Table 6-109 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-110 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-111 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-112 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-113 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{  
  "resources": [ 10001, 10002 ]  
}
```

Example Responses

Status code: 201

Created

```
[ {  
  "permissions": [ "read", "access", "delete", "modify" ],  
  "id": 711537,  
  "parent_device_id": 711536,  
  "parent_device_name": "parent-device",  
  "product": {  
    "product_id": 116303,  
    "product_name": "p1",  
    "manufacturer_id": "p1",  
    "model": "p1",  
    "product_type": 0,  
    "protocol_type": 0  
  },  
  "device_name": "device",  
  "instance_id": "8993a690-cf61-46af-880d-587d823d14e5",  
  "client_id": "D116303711537sGDtK",  
}
```

```
"node_id" : "string",
"app_name" : "app",
"status" : 0,
"online_status" : 2,
"description" : "device",
"authentication" : {
  "user_name" : "F01A8D25FE6E4CF5A286B711B31888AE",
  "password" : "*****"
},
"created_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"last_updated_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"tags" : [ ],
"created_datetime" : 1607408244841,
"last_updated_datetime" : 1607422571094,
"connect_address" : "xx.xx.xx.xx",
"ssl_connect_address" : "xx.xx.xx.xx",
"ipv6_connect_address" : "xx.xx.xx.xx",
"ipv6_ssl_connect_address" : "xx.xx.xx.xx",
"last_login_datetime" : null,
"node_type" : 0,
"device_type" : 0,
"client_ip" : "xx.xx.xx.xx",
"keep_alive" : 60,
"last_active_time" : 1608082247010,
"version" : 4,
"plugin_id" : 2,
"app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"
}]
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.addSubDevice]. Parameter is [deviceOid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.9 Querying Subdevices

Function

This API is used to query subdevices.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/subsets

Table 6-114 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 9999999999999999

Table 6-115 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
device_name	No	String	Device name. Minimum: 2 Maximum: 32
status	No	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
online_status	No	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-116 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 99999
size	Integer	Number of records returned this time. Minimum: 1 Maximum: 1000
items	Array of Device objects	Device ID list.

Table 6-117 Device

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Device ID. Minimum: 1 Maximum: 999999999999999999
parent_device_id	Integer	Parent device ID. Minimum: 1 Maximum: 999999999999999999
parent_device_name	String	Parent device name. Minimum: 2 Maximum: 64
product	ProductRefer object	Product.
device_name	String	Device name. The value is a string of 2 to 64 characters, which can contain letters, digits, and the following special characters: ()_#.'-@%&!, Minimum: 2 Maximum: 64
instance_id	String	Instance ID. Minimum: 2 Maximum: 64

Parameter	Type	Description
client_id	String	Client ID, which is the unique device ID generated by the ROMA platform. Minimum: 0 Maximum: 32
node_id	String	Physical number of a device. The value is a string of 2 to 64 characters, which can contain only letters, digits, underscores (_), and hyphens (-). Generally, the MAC address or IMEI is used. Minimum: 2 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
status	Integer	Device status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
online_status	Integer	Connection status. The options are as follows: 0: disconnected; 1: online; 2: offline. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200
authentication	Authentication object	Authentication.
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
tags	Array of strings	Tag.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
connect_address	String	Device access address. Minimum: 0 Maximum: 200
ssl_connect_address	String	Device access SSL address. Minimum: 0 Maximum: 200
ipv6_connect_address	String	IPv6 address for device access. Minimum: 0 Maximum: 200
ipv6_ssl_connect_address	String	IPv6 SSL address for device access. Minimum: 0 Maximum: 200
last_login_datetime	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
node_type	Integer	Node type. The options are as follows: 0: direct connection; 1: gateway; 2: subdevice. Minimum: 1 Maximum: 9999999999999999
device_type	Integer	Device type. The options are as follows: 0: common device (without a child device or parent device); 1: gateway device (which can contain subdevices); 2: child device (belonging to a gateway device). Minimum: 0 Maximum: 10
client_ip	String	Client IP address. Minimum: 0 Maximum: 64
keep_alive	String	Heartbeat time. Minimum: 0 Maximum: 200

Parameter	Type	Description
last_active_time	Long	Last login time. Minimum: 1 Maximum: 9999999999999999
version	String	Device version. Minimum: 0 Maximum: 64
plugin_id	Integer	Type of the product to which the device belongs. This parameter applies only to Modbus and OPC UA devices. 0: common; 1: Modbus gateway; 2: OPC UA gateway. Minimum: 1 Maximum: 9999999999999999
app_id	String	Application ID. Minimum: 0 Maximum: 36

Table 6-118 ProductReferer

Parameter	Type	Description
product_id	Integer	Product ID. The product ID is mandatory if the manufacturer ID and model are not set. Minimum: 1 Maximum: 9999999999999999
product_name	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	String	Manufacturer ID. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64
model	String	Model. If the product ID is not specified, the manufacturer ID and model are mandatory. Minimum: 0 Maximum: 64

Parameter	Type	Description
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
product_type	Integer	Product type. The options are as follows: 0: common; 1: gateway. Minimum: 0 Maximum: 10

Table 6-119 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Table 6-120 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-121 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-122 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-123 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-124 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices/{device_id}/subsets
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "connect_address" : "xx.xxx.xxx.xxx",
  "ssl_connect_address" : "xx.xxx.xxx.xxx",
  "ipv6_connect_address" : "xx.xxx.xxx.xxx",
  "ipv6_ssl_connect_address" : "xx.xxx.xxx.xxx",
  "items" : [ {
    "permissions" : [ "read", "access", "delete", "modify" ],
    "id" : 711537,
    "parent_device_id" : 711536,
    "parent_device_name" : "parent-device",
    "product" : {
      "product_id" : 116303,
      "product_name" : "p1",
      "manufacturer_id" : "p1",
      "model" : "p1",
      "product_type" : 0,
```

```
{
  "protocol_type" : 0
},
"device_name" : "device",
"instance_id" : "8993a690-cf61-46af-880d-587d823d14e5",
"client_id" : "D116303711537sGDtK",
"node_id" : "string",
"app_name" : "app",
"status" : 0,
"online_status" : 2,
"description" : "device",
"authentication" : {
  "user_name" : "F01A8D25FE6E4CF5A286B711B31888AE",
  "password" : "*****"
},
"created_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"last_updated_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"tags" : [ ],
"created_datetime" : 1607408244841,
"last_updated_datetime" : 1607422571094,
"connect_address" : "xx.xx.xx.xx",
"ssl_connect_address" : "xx.xx.xx.xx",
"ipv6_connect_address" : "xx.xx.xx.xx",
"ipv6_ssl_connect_address" : "xx.xx.xx.xx",
"last_login_datetime" : null,
"node_type" : 0,
"device_type" : 0,
"client_ip" : "xx.xx.xx.xx",
"keep_alive" : 60,
"last_active_time" : 1608082247010,
"version" : 4,
"plugin_id" : 2,
"app_id" : "cb4b3ec0-8f7f-432f-b05e-fc149d05da5d"
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.batchQuerySubDevices].
Parameter is [deviceOid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
}
```

```
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.10 Querying a Device Shadow

Function

This API is used to query a device shadow.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/shadow

Table 6-125 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-126 Response body parameters

Parameter	Type	Description
ShadowService	Array of ShadowService objects	OK

Table 6-127 ShadowService

Parameter	Type	Description
service_id	Integer	Service ID. Minimum: 1 Maximum: 999999999999999999
service_name	String	Service name. Minimum: 2 Maximum: 64
properties	Array of ShadowValue objects	Shadow value.

Table 6-128 ShadowValue

Parameter	Type	Description
property_name	String	Attribute name. Minimum: 0 Maximum: 64
property_value	String	Last reported value of an attribute. Minimum: 0 Maximum: 64

Parameter	Type	Description
property_updated_date	Long	Time when an attribute is reported for the last time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Status code: 400**Table 6-129** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-130** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-131 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices/{device_id}/shadow
```

Example Responses

Status code: 200

```
OK
null
```

Status code: 400

```
Bad Request
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.getDeviceShadow]. Parameter is [deviceId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

```
Not Found
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

```
Internal Server Error
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:"
```

```
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.11 Resetting Device Authentication Information

Function

This API is used to reset device authentication information.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/
authentication

Table 6-132 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Parameter	Mandatory	Type	Description
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-133 Response body parameters

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= [{ }];;<>/?). Minimum: 0 Maximum: 64

Status code: 400

Table 6-134 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-135** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-136** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
PUT /{project_id}/link/instances/{instance_id}/devices/{device_id}/authentication
```

Example Responses

Status code: 200

OK

```
{
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.resetAuthentication]. Parameter is [deviceOid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.2.12 Querying Device Authentication Information

Function

This API is used to query device authentication information.

URI

GET /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/authentication

Table 6-137 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-138 Response body parameters

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Status code: 400

Table 6-139 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-140 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-141 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/devices/{device_id}/authentication
```

Example Responses

Status code: 200

OK

```
{
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.queryAuthentication]. Parameter is [deviceId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.2.13 Sending Commands****Function**

This API is used to send commands.

URI

POST /v2/{project_id}/link/instances/{instance_id}/devices/{device_id}/send-command

Table 6-142 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
device_id	Yes	Integer	Device ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-143 Request body parameters

Parameter	Mandatory	Type	Description
service_id	Yes	Integer	Service ID. The value is automatically rounded down. Minimum: 1 Maximum: 999999999999999999
command_id	Yes	Integer	Command ID. The value is automatically rounded down. Minimum: 1 Maximum: 999999999999999999

Parameter	Mandatory	Type	Description
is_sync	Yes	Boolean	Whether a command is synchronous. true: synchronous false: asynchronous If the system sends a synchronous command to the device as an MQTT message, it waits for the MQTT response from the device (the timeout interval is 5 seconds by default) and then returns a response. If no response is received from the device within the timeout period, an error message is reported by the interface. If the system sends an asynchronous command to the device, it immediately returns a response without waiting for a response from the device.
requests	No	Array of RequestParameter objects	Request parameter list.

Table 6-144 RequestParameter

Parameter	Mandatory	Type	Description
parameter_name	No	String	Request parameter name. Minimum: 2 Maximum: 32
parameter_value	No	String	Request parameter value. Minimum: 2 Maximum: 32

Response Parameters

Status code: 400

Table 6-145 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-146** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-147** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "service_id" : 10001,
  "command_id" : 20001,
  "is_sync" : 1
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-device.sendCommand]. Parameter is [device_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content

Status Code	Description
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.3 Product Template Management

6.3.1 Creating a Product Template

Function

This API is used to create a product template.

URI

POST /v2/{project_id}/link/instances/{instance_id}/product-templates

Table 6-148 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-149 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Product template name. The value is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Product template description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Yes	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 1 Default: 0

Response Parameters

Status code: 201

Table 6-150 Response body parameters

Parameter	Type	Description
id	Integer	Product template ID. Minimum: 1 Maximum: 999999999999999999
name	String	Product template name. Minimum: 0 Maximum: 64
description	String	Product template description. Minimum: 0 Maximum: 200

Parameter	Type	Description
status	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-151 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-152 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-153 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-154 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-155 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "product_template",
  "description" : "product template",
  "status" : 0
}
```

Example Responses

Status code: 201

Created

```
{
  "id" : 2235,
  "name" : "template",
  "description" : "description",
  "status" : 0,
  "createdUser" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "lastUpdatedUser" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607303564596,
  "last_updated_datetime" : 1607571061057
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-producttemplate.save]. Parameter is [request]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.3.2 Querying Product Templates

Function

This API is used to query product templates.

URI

GET /v2/{project_id}/link/instances/{instance_id}/product-templates

Table 6-156 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-157 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
id	No	Integer	Product template ID. Minimum: 1 Maximum: 999999999999999999
name	No	String	Product template name. Minimum: 0 Maximum: 10
status	No	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user_name	No	String	Name of the user who created the product template. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
created_date_start	No	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
created_date_end	No	Long	Creation end time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-158 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 99999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 9999
items	Array of ProductTemplate objects	Product template information.

Table 6-159 ProductTemplate

Parameter	Type	Description
id	Integer	Product template ID. Minimum: 1 Maximum: 999999999999999999
name	String	Product template name. Minimum: 0 Maximum: 64
description	String	Product template description. Minimum: 0 Maximum: 200
status	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Table 6-160 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-161 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-162 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-163 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-164 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/product-templates
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "id" : 2235,
    "name" : "template",
    "description" : "description",
    "status" : 0,
    "createdUser" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "lastUpdatedUser" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "created_datetime" : 1607303564596,
    "last_updated_datetime" : 1607571061057
  }
]
```

```
  }  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-producttemplate.pageQuery]. Parameter  
is [status]. Processor is [query].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Not Found"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.3.3 Deleting a Product Template

Function

This API is used to delete a product template.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/product-templates/{product_template_id}

Table 6-165 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_template_id	Yes	Integer	Product template ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-166 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-167 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-168 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/product-templates/{product_template_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-producttemplate.delete]. Parameter is [id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.3.4 Modifying a Product Template

Function

This API is used to modify information of a product template.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/product-templates/
{product_template_id}

Table 6-169 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_template_id	Yes	Integer	Product template ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-170 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Product template name. The value is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Product template description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Parameter	Mandatory	Type	Description
status	Yes	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10 Default: 0

Response Parameters

Status code: 200

Table 6-171 Response body parameters

Parameter	Type	Description
id	Integer	Product template ID. Minimum: 1 Maximum: 999999999999999999
name	String	Product template name. Minimum: 0 Maximum: 64
description	String	Product template description. Minimum: 0 Maximum: 200
status	Integer	Status of a product template. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Parameter	Type	Description
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Table 6-172 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-173 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-174** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-175** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-176** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "product_template",
  "description" : "product template",
  "status" : 1
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : 2235,
  "name" : "template",
  "description" : "description",
  "status" : 0,
  "createdUser" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "lastUpdatedUser" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607303564596,
  "last_updated_datetime" : 1607571061057
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-producttemplate.update]. Parameter is [id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "624c8be1-39b6-47b7-941d-c159aced368a-1619602544650-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",

```

```
"error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",  
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4 Product Management

6.4.1 Creating a Product

Function

This API is used to create a product.

URI

POST /v2/{project_id}/link/instances/{instance_id}/products

Table 6-177 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-178 Request body parameters

Parameter	Mandatory	Type	Description
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 36
name	Yes	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64
manufacturer_id	Yes	String	Product manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	Yes	String	Manufacturer name. Minimum: 0 Maximum: 64
model	Yes	String	Product model. Minimum: 0 Maximum: 64
product_type	Yes	Integer	Product type. The options are as follows: 0: common (subdevices are not supported); 1: gateway. Minimum: 0 Maximum: 10
description	No	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
protocol_type	Yes	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
device_type	No	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 32
template_id	No	Integer	ID of the associated product template. This parameter must be specified if a product template is used to create a product. Otherwise, leave this parameter empty. The value is automatically rounded down. Minimum: 1 Maximum: 999999999999999999
version	No	String	Model version. Minimum: 0 Maximum: 32
data_format	No	Integer	Product data format. 0: JSON 1: USER_DEFINED Minimum: 0 Maximum: 10 Default: 0

Response Parameters

Status code: 201

Table 6-179 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Product ID. Minimum: 1 Maximum: 999999999999999999
product_serial	String	Unique sequence number of a product (unique value in the system, which is used to mark a product in the topic of MQS). Minimum: 0 Maximum: 64

Parameter	Type	Description
app_id	String	Application ID. Minimum: 0 Maximum: 64
name	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64
manufacturer_id	String	Product manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	String	Manufacturer name. Minimum: 0 Maximum: 64
model	String	Product model. Minimum: 0 Maximum: 64
product_type	Integer	Product type. The options are as follows: 0: common (subdevices are not supported); 1: gateway. Minimum: 0 Maximum: 10
description	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
device_type	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64
version	String	Product version. Minimum: 0 Maximum: 64

Parameter	Type	Description
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
authentication	Authentication object	Authentication.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
app_name	String	Application name. Minimum: 0 Maximum: 256
data_format	Integer	data_format 0-JSON 1-USER_DEFINED Minimum: 1 Maximum: 9999999999999999

Table 6-180 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-181 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-182 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Status code: 400

Table 6-183 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-184 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-185** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{  
  "app_id" : "ef3845be-091a-4ab5-869a-9de0025e2165",  
  "name" : "device",  
  "manufacturer_id" : 10001,  
  "manufacturer_name" : "test",  
  "model" : "model1",  
  "product_type" : 0,  
  "protocol_type" : 0  
}
```

Example Responses

Status code: 201

Created

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "id": 120671,
  "product_serial": "Dd1bRt122894",
  "app_id": "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "name": "pro-opcua",
  "manufacturer_id": "pro-opcua",
  "manufacturer_name": "pro-opcua",
  "model": "pro-opcua",
  "product_type": 0,
  "description": "opcua product",
  "protocol_type": 4,
  "device_type": "default",
  "version": "version",
  "created_datetime": 1607481372416,
  "app_name": "app-link",
  "data_format": 0,
  "created_user": {
    "user_id": "6546435432432",
    "user_name": "user1"
  },
  "last_updated_user": {
    "user_id": "6546435432432",
    "user_name": "user1"
  },
  "authentication": {
    "user_name": "4MjxbCl4q461",
    "password": "*****"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "ROMA.00110001",
  "error_msg": "The parameter does not meet verification rules: [name:Can not be empty, manufacturer_name:Can not be empty, manufacturer_id:Can not be empty, product_type:must not be null, app_id:must not be empty, model:Can not be empty]",
  "requestId": "b728949c-dfb5-4277-b54e-7c05e1b0b598-1619663322828-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code": "ROMA.00110006",
  "error_msg": "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId": "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "ROMA.00110002",
  "error_msg": "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
}
```

```
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.2 Querying Products

Function

This API is used to query products.

URI

GET /v2/{project_id}/link/instances/{instance_id}/products

Table 6-186 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-187 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
app_id	No	String	Application ID. Minimum: 0 Maximum: 36
id	No	String	Product ID. Minimum: 0 Maximum: 64
name	No	String	Product name. Minimum: 0 Maximum: 64
manufacturer_id	No	String	Manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	No	String	Manufacturer name. Minimum: 0 Maximum: 64
model	No	String	Model. Minimum: 0 Maximum: 64
device_type	No	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64
product_type	No	Integer	Product type. 0: common product (subdevices are not supported) 1: gateway product Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
protocol_type	No	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
created_user_name	No	String	This API is used to create a user. Minimum: 0 Maximum: 64
created_date_start	No	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
created_date_end	No	Long	Creation end time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0
app_name	No	String	Application name. Minimum: 0 Maximum: 256
product_serial	No	String	Unique sequence number of a product (unique value in the system, which is used to mark a product in the topic of MQS). Minimum: 0 Maximum: 64

Request Parameters

None

Response Parameters

Status code: 200

Table 6-188 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 9999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of Product objects	Product list.

Table 6-189 Product

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Product ID. Minimum: 1 Maximum: 999999999999999999
product_serial	String	Unique sequence number of a product (unique value in the system, which is used to mark a product in the topic of MQS). Minimum: 0 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
name	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64

Parameter	Type	Description
manufacturer_id	String	Product manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	String	Manufacturer name. Minimum: 0 Maximum: 64
model	String	Product model. Minimum: 0 Maximum: 64
product_type	Integer	Product type. The options are as follows: 0: common (subdevices are not supported); 1: gateway. Minimum: 0 Maximum: 10
description	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
device_type	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64
version	String	Product version. Minimum: 0 Maximum: 64
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
authentication	Authentication object	Authentication.

Parameter	Type	Description
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
app_name	String	Application name. Minimum: 0 Maximum: 256
data_format	Integer	data_format 0-JSON 1-USER_DEFINED Minimum: 1 Maximum: 999999999999999999

Table 6-190 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-191 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-192 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Status code: **400**

Table 6-193 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: **404**

Table 6-194 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-195 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
```

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "id" : 120671,
  "product_serial" : "Dd1bRt122894",
  "app_id" : "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "name" : "pro-opcua",
  "manufacturer_id" : "pro-opcua",
  "manufacturer_name" : "pro-opcua",
  "model" : "pro-opcua",
  "product_type" : 0,
  "description" : "opcua product",
  "protocol_type" : 4,
  "device_type" : "default",
  "version" : "version",
  "created_datetime" : 1607481372416,
  "app_name" : "app-link",
  "data_format" : 0,
  "created_user" : {
    "user_id" : "6546435432432",
    "user_name" : "user1"
  },
  "last_updated_user" : {
    "user_id" : "6546435432432",
    "user_name" : "user1"
  },
  "authentication" : {
    "user_name" : "4MjxbCl4q461",
    "password" : "*****"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.search]. Parameter is [product_type]. Processor is [query].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.3 Querying the Number of Devices in a Product

Function

This API is used to query the number of devices in a product.

URI

GET /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/devices-summary

Table 6-196 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-197 Response body parameters

Parameter	Type	Description
summary	Integer	Number of devices in a product. Minimum: 1 Maximum: 999999999999999999

Status code: 400

Table 6-198 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-199 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-200 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products/{product_id}/devices-summary
```

Example Responses

Status code: 200

OK

```
{  
  "summary" : 0  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.deviceSummary]. Parameter is [productId]. Processor is [path].",  
}
```

```
{
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.4 Deleting a Product

Function

This API is used to delete a product.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/products/{product_id}

Table 6-201 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-202 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-203 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-204 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/products/{product_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.delete]. Parameter is [product_id]. Processor is [path].",
}
```

```
"requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.5 Querying Product Details

Function

This API is used to query product details.

URI

GET /v2/{project_id}/link/instances/{instance_id}/products/{product_id}

Table 6-205 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-206 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Product ID. Minimum: 1 Maximum: 9999999999999999
product_serial	String	Unique sequence number of a product (unique value in the system, which is used to mark a product in the topic of MQS). Minimum: 0 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64

Parameter	Type	Description
name	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64
manufacturer_id	String	Product manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	String	Manufacturer name. Minimum: 0 Maximum: 64
model	String	Product model. Minimum: 0 Maximum: 64
product_type	Integer	Product type. The options are as follows: 0: common (subdevices are not supported); 1: gateway. Minimum: 0 Maximum: 10
description	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
device_type	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64
version	String	Product version. Minimum: 0 Maximum: 64
created_user	CreatedUser object	Name of the user who created the attribute.

Parameter	Type	Description
last_updated_user	LastUpdatedUser object	User who performed the last update.
authentication	Authentication object	Authentication.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
app_name	String	Application name. Minimum: 0 Maximum: 256
data_format	Integer	data_format 0-JSON 1-USER_DEFINED Minimum: 1 Maximum: 999999999999999999

Table 6-207 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-208 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-209 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Status code: 400

Table 6-210 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-211 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-212 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products/{product_id}
```

Example Responses

Status code: 200

OK

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "id": 120671,
  "product_serial": "Dd1bRt122894",
```

```
"app_id" : "a1503e51-46f7-4d23-8617-7cb2d28dde98",
"name" : "pro-opcua",
"manufacturer_id" : "pro-opcua",
"manufacturer_name" : "pro-opcua",
"model" : "pro-opcua",
"product_type" : 0,
"description" : "opcua product",
"protocol_type" : 4,
"device_type" : "default",
"version" : "version",
"created_datetime" : 1607481372416,
"app_name" : "app-link",
"data_format" : 0,
"created_user" : {
  "user_id" : "6546435432432",
  "user_name" : "user1"
},
"last_updated_user" : {
  "user_id" : "6546435432432",
  "user_name" : "user1"
},
"authentication" : {
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.searchProductDetails].
Parameter is [product_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.6 Modifying Product Information

Function

This API is used to modify product information.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/products/{product_id}

Table 6-213 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-214 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64
description	No	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
manufacturer_id	Yes	String	Product manufacturer ID. The value is a string of 2 to 50 characters containing letters, digits, underscores (_), and hyphens (-). Minimum: 0 Maximum: 64
manufacturer_name	Yes	String	Manufacturer name, which contains 2 to 64 characters. Minimum: 0 Maximum: 64
model	Yes	String	Product model, which is a string of 2 to 50 characters containing letters, digits, underscores (_), hyphens (-), and spaces. The spaces at the beginning or end of the value will be ignored. Minimum: 0 Maximum: 64
device_type	Yes	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
version	No	String	Model version. Minimum: 0 Maximum: 64

Response Parameters

Status code: 200

Table 6-215 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
id	Integer	Product ID. Minimum: 1 Maximum: 999999999999999999
product_serial	String	Unique sequence number of a product (unique value in the system, which is used to mark a product in the topic of MQS). Minimum: 0 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
name	String	Product name, which is unique in a tenant. The value can contain a maximum of 64 characters. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 0 Maximum: 64
manufacturer_id	String	Product manufacturer ID. Minimum: 0 Maximum: 64
manufacturer_name	String	Manufacturer name. Minimum: 0 Maximum: 64

Parameter	Type	Description
model	String	Product model. Minimum: 0 Maximum: 64
product_type	Integer	Product type. The options are as follows: 0: common (subdevices are not supported); 1: gateway. Minimum: 0 Maximum: 10
description	String	Product description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
protocol_type	Integer	Protocol type of the product. 0: mqtt 2: modbus 4: opcua Minimum: 0 Maximum: 10
device_type	String	Device type of a product. The default value is Default. Minimum: 0 Maximum: 64
version	String	Product version. Minimum: 0 Maximum: 64
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
authentication	Authentication object	Authentication.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
app_name	String	Application name. Minimum: 0 Maximum: 256

Parameter	Type	Description
data_format	Integer	data_format 0-JSON 1-USER_DEFINED Minimum: 1 Maximum: 999999999999999999

Table 6-216 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-217 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-218 Authentication

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64

Parameter	Type	Description
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};<>/?). Minimum: 0 Maximum: 64

Status code: 400**Table 6-219** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-220** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-221 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "product",
  "manufacturer_id" : "p3",
  "manufacturer_name" : "p3",
  "model" : "p3",
  "device_type" : "Default"
}
```

Example Responses

Status code: 200

OK

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "id" : 120671,
  "product_serial" : "Dd1bRt122894",
  "app_id" : "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "name" : "pro-opcua",
  "manufacturer_id" : "pro-opcua",
  "manufacturer_name" : "pro-opcua",
  "model" : "pro-opcua",
  "product_type" : 0,
  "description" : "opcua product",
  "protocol_type" : 4,
}
```

```
"device_type" : "default",
"version" : "version",
"created_datetime" : 1607481372416,
"app_name" : "app-link",
"data_format" : 0,
"created_user" : {
  "user_id" : "6546435432432",
  "user_name" : "user1"
},
"last_updated_user" : {
  "user_id" : "6546435432432",
  "user_name" : "user1"
},
"authentication" : {
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.update]. Parameter is
[product_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.7 Adding a Product Topic

Function

This API is used to add a product topic.

URI

POST /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/topics

Table 6-222 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

Table 6-223 Request body parameters

Parameter	Mandatory	Type	Description
permission	Yes	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
name	Yes	String	Product-level topic name. Topics must be layered using slashes (/) to distinguish categories. The first class is the user-defined version number. The second class is defined as \${deviceId} (wildcard device ID). The third class is the user-defined topic class name. The topic consists of /\${version}/\${deviceId}/\${customizePart}. In brief, the topic class /v1/\${deviceId}/customizePart is a set of topics such as /v1/deviceid1/customizePart1 and /v1/deviceid2/customizePart2. Minimum: 0 Maximum: 64
version	Yes	String	Version number, which is a string of 2 to 50 characters. The value must start and end with a letter or digit. Only letters, digits, hyphens (-), and dots (.) are allowed. Minimum: 0 Maximum: 64
description	No	String	Description. Minimum: 0 Maximum: 200

Response Parameters

Status code: 200

Table 6-224 Response body parameters

Parameter	Type	Description
product_id	Integer	Homing product ID. Minimum: 1 Maximum: 999999999999999999

Parameter	Type	Description
topic_id	String	Product topic ID. Minimum: 1 Maximum: 999999999999999999
permission	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10
topic_name	String	Topic name. Minimum: 0 Maximum: 64
version	String	Version number. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200

Status code: 400

Table 6-225 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-226 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-227 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "permission" : 0,
  "name" : "datas",
  "version" : "v1",
  "description" : "/v1/${deviceId}/datas"
}
```

Example Responses

Status code: 200

Created

```
{
  "product_id" : 122888,
  "topic_id" : "17",
  "permission" : 1,
  "topic_name" : "/3.0/${deviceId}/t1",
  "version" : "3.0",
  "description" : "description"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product-topic.createProductTopic].  
Parameter is [productId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID  
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.8 Querying Product Topics

Function

This API is used to query product topics.

URI

GET /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/topics

Table 6-228 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Table 6-229 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-230 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 0 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of ProductTopic objects	Product topic list.

Table 6-231 ProductTopic

Parameter	Type	Description
product_id	Integer	Homing product ID. Minimum: 1 Maximum: 9999999999999999
topic_id	String	Product topic ID. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
permission	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10
topic_name	String	Topic name. Minimum: 0 Maximum: 64
version	String	Version number. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200

Status code: 400**Table 6-232** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-233 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-234 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products/{product_id}/topics
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
```

```
"product_id" : 122888,  
"topic_id" : "17",  
"permission" : 1,  
"topic_name" : "/3.0/${deviceId}/t1",  
"version" : "3.0",  
"description" : "description"  
}]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-product-topic.queryProductTopic].  
Parameter is [productId]. Processor is [path].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00110006",  
  "error_msg" : "The resource does not exist. Check whether the resource ID  
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",  
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.9 Deleting a Product Topic

Function

This API is used to delete a product topic.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/topics/{topic_id}

Table 6-235 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999
topic_id	Yes	Integer	Product topic ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-236 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-237** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-238** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/products/{product_id}/topics/{topic_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product-topic.deleteProductTopic].
Parameter is [productId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.10 Modifying a Product Topic

Function

This API is used to modify a product topic.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/topics/{topic_id}

Table 6-239 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999
topic_id	Yes	Integer	Product topic ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-240 Request body parameters

Parameter	Mandatory	Type	Description
permission	Yes	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10
name	Yes	String	Topic name. A topic class uses slashes (/) to distinguish class items. The first class is the user-defined version number. The second class is defined as \${deviceId} (wildcard device ID). The third class is the user-defined topic class name. The topic consists of /\${version}/\${deviceId}/\${customizePart}. In brief, the topic class /v1/\${deviceId}/customizePart is a set of topics such as /v1/deviceid1/customizePart1 and /v1/deviceid2/customizePart2. Minimum: 0 Maximum: 64
version	Yes	String	Version number, which is a string of 2 to 50 characters. The value must start and end with a letter or digit. Only letters, digits, hyphens (-), and dots (.) are allowed. Minimum: 0 Maximum: 64
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Response Parameters

Status code: 200

Table 6-241 Response body parameters

Parameter	Type	Description
product_id	Integer	Homing product ID. Minimum: 1 Maximum: 9999999999999999
topic_id	Integer	Product topic ID. Minimum: 1 Maximum: 9999999999999999
permission	Integer	Topic permission. The options are as follows: 0: publish; 1: subscribe. Minimum: 0 Maximum: 10
topic_name	String	Topic name. Minimum: 0 Maximum: 64
version	String	Version number. Minimum: 0 Maximum: 10
description	String	Description. Minimum: 0 Maximum: 200

Status code: 400**Table 6-242** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-243** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-244** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "permission" : 1,
  "name" : "datas",
  "version" : "v2",
  "description" : "/v2/${deviceId}/datas"
}
```

Example Responses

Status code: 200

OK

```
{
  "product_id" : 122888,
  "topic_id" : 17,
  "permission" : 1,
  "topic_name" : "/3.0/${deviceId}/t1",
  "version" : "3.0",
  "description" : "description"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product-topic.updateProductTopic].
Parameter is [productId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.11 Resetting Product Authentication Information

Function

This API is used to reset product authentication information.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/authentication

Table 6-245 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-246 Response body parameters

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$%^&*()-_+= []{};:<>/?). Minimum: 0 Maximum: 64

Status code: 400**Table 6-247** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-248 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-249 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

PUT /{project_id}/link/instances/{instance_id}/products/{product_id}/authentication

Example Responses

Status code: 200

OK

```
{
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.resetAuthentication]. Parameter is [productId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.4.12 Querying Product Authentication Information****Function**

This API is used to query product authentication information.

URIGET /v2/{project_id}/link/instances/{instance_id}/products/{product_id}/
authentication

Table 6-250 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
product_id	Yes	Integer	Product ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-251 Response body parameters

Parameter	Type	Description
user_name	String	One-model-one-secret or one-device-one-secret username. Minimum: 0 Maximum: 64
password	String	One-model-one-secret or one-device-one-secret password. The password must contain 8 to 32 characters, including at least one digit, one uppercase letter, one lowercase letter, and one special character (~!@#\$\$%^&*()-_+= [{ }];:<>/?). Minimum: 0 Maximum: 64

Status code: 400

Table 6-252 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-253** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-254** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products/{product_id}/authentication
```

Example Responses

Status code: 200

OK

```
{
  "user_name" : "4MjxbCl4q461",
  "password" : "*****"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.queryAuthentication]. Parameter is [productId]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.13 Importing Products

Function

This API is used to import products.

URI

POST /v2/{project_id}/link/instances/{instance_id}/products/import

Table 6-255 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-256 FormData parameters

Parameter	Mandatory	Type	Description
file	No	File	Product file to be uploaded (in .csv format).

Response Parameters

Status code: 200**Table 6-257** Response body parameters

Parameter	Type	Description
succ_num	Integer	Number of successfully imported products. Minimum: 0 Maximum: 500
fail_num	Integer	Number of products that fail to be imported. Minimum: 0 Maximum: 500
fail_objects_ids	Array of strings	List of products that fail to be imported. Maximum: 10

Status code: 400**Table 6-258** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-259 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-260 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
POST /{project_id}/link/instances/{instance_id}/products/import
```

Example Responses

Status code: 200

OK

```
{
  "succ_num": 1,
```

```
"fail_num" : 4,  
"fail_objects_ids" : [ ]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.importProduct]. Parameter is [X-Auth-Token]. Processor is [header].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Not Found"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.4.14 Exporting Products

Function

This API is used to export products.

URI

GET /v2/{project_id}/link/instances/{instance_id}/products/export

Table 6-261 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-262 Query parameters

Parameter	Mandatory	Type	Description
product_ids	No	Array	ID list of products to be exported. Minimum: 0 Maximum: 999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-263 Response body parameters

Parameter	Type	Description
-	File	OK

Status code: 400

Table 6-264 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-265** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-266** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/products/export
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-product.exportProduct]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5 Rule Engine

6.5.1 Creating a Rule

Function

This API is used to create a rule.

URI

POST /v2/{project_id}/link/instances/{instance_id}/rules

Table 6-267 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-268 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
app_id	Yes	String	Application ID. Minimum: 0 Maximum: 64
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	No	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. If this parameter is left empty, the default value 0 is used. Minimum: 0 Maximum: 10
data_parsing_status	No	Integer	Data parsing status. The options are as follows: 0: enabled; 1: disabled. If this parameter is left empty, the default value is 1. Minimum: 0 Maximum: 10

Response Parameters

Status code: 200**Table 6-269** Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.

Parameter	Type	Description
rule_id	Integer	Rule ID. Minimum: 1 Maximum: 9999999999999999
name	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
description	String	Description. Minimum: 0 Maximum: 200
status	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
data_parsing_status	Integer	Data parsing status. If status is set to 0, this parameter is mandatory and must be set to 0 (indicating that data parsing is enabled) or 1 (indicating that data parsing is disabled). Minimum: 0 Maximum: 10
sql_field	String	SQL query field. Minimum: 0 Maximum: 2000
sql_where	String	SQL query condition. Minimum: 0 Maximum: 2000
rule_express	String	Complete rule expression. Minimum: 0 Maximum: 2000

Parameter	Type	Description
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-270 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-271 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-272 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-273** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-274** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "rule",
  "app_id" : "ef3845be-091a-4ab5-869a-9de0025e2165",
  "description" : "rule",
  "status" : 0,
  "data_parsing_status" : 0
}
```

Example Responses

Status code: 200

Created

```
{
  "permissions" : [ "read", "access", "delete", "modify" ],
  "rule_id" : 702244,
  "name" : "rule",
  "app_id" : "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "app_name" : "app-link",
  "description" : null,
  "status" : 0,
  "data_parsing_status" : 1,
  "sql_field" : null,
  "sql_where" : null,
  "rule_express" : null,
  "created_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "last_updated_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607598152997,
  "last_updated_datetime" : 1607598152997
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rule.save]. Parameter is [request]. Processor is [body].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.2 Querying Rules

Function

This API is used to query rules.

URI

GET /v2/{project_id}/link/instances/{instance_id}/rules

Table 6-275 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-276 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
app_id	No	String	Application ID. Minimum: 0 Maximum: 64
name	No	String	Rule name. Minimum: 0 Maximum: 64
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-277 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 0 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 0 Maximum: 999
items	Array of Rule objects	Rule list.

Table 6-278 Rule

Parameter	Type	Description
permissions	Array of strings	Permission.
rule_id	Integer	Rule ID. Minimum: 1 Maximum: 9999999999999999
name	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
description	String	Description. Minimum: 0 Maximum: 200

Parameter	Type	Description
status	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
data_parsing_status	Integer	Data parsing status. If status is set to 0, this parameter is mandatory and must be set to 0 (indicating that data parsing is enabled) or 1 (indicating that data parsing is disabled). Minimum: 0 Maximum: 10
sql_field	String	SQL query field. Minimum: 0 Maximum: 2000
sql_where	String	SQL query condition. Minimum: 0 Maximum: 2000
rule_express	String	Complete rule expression. Minimum: 0 Maximum: 2000
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-279 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-280 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-281** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-282 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-283 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/rules
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
```

```
"permissions" : [ "read", "access", "delete", "modify" ],
"rule_id" : 702244,
"name" : "rule",
"app_id" : "a1503e51-46f7-4d23-8617-7cb2d28dde98",
"app_name" : "app-link",
"description" : null,
"status" : 0,
"data_parsing_status" : 1,
"sql_field" : null,
"sql_where" : null,
"rule_express" : null,
"created_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"last_updated_user" : {
  "user_id" : null,
  "user_name" : "user"
},
"created_datetime" : 1607598152997,
"last_updated_datetime" : 1607598152997
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rule.query]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.3 Deleting Rules in Batches

Function

This API is used to delete rules in batches.

URI

POST /v2/{project_id}/link/instances/{instance_id}/rules/batch-delete

Table 6-284 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-285 Request body parameters

Parameter	Mandatory	Type	Description
resources	Yes	Array of integers	Rule ID list. The value is automatically rounded down.

Response Parameters

Status code: 200

Table 6-286 Response body parameters

Parameter	Type	Description
resources	Array of SingleResponse objects	Number of returned arrays.

Table 6-287 SingleResponse

Parameter	Type	Description
id	String	Operation ID. Minimum: 0 Maximum: 64
ret_status	String	Operation result. The options are as follows: successful; error. Minimum: 0 Maximum: 64

Status code: 400

Table 6-288 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-289 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-290** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{  
  "resources" : [ 1001, 1002 ]  
}
```

Example Responses

Status code: 200

OK

```
[ {  
  "id" : 702246,
```



```
"ret_status" : "successful"
}]
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rule.batchDelete]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.4 Debugging Rules

Function

This API is used to debug rules.

URI

POST /v2/{project_id}/link/instances/{instance_id}/rule-test

Table 6-291 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-292 Request body parameters

Parameter	Mandatory	Type	Description
test_data	No	String	Test data executed by the rule. Minimum: 0 Maximum: 2000
test_rule_expression	No	String	Rules used for test. Minimum: 0 Maximum: 2000

Response Parameters

Status code: 200

Table 6-293 Response body parameters

Parameter	Type	Description
test_result	String	Rule test result. Minimum: 0 Maximum: 2000

Status code: 400

Table 6-294 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-295** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-296** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "test_data" : "{ \"0\": \"1\", \"1\": \"2\" }",
  "test_rule_express" : "select key1 from '/v1/324qwd24e2/datas'"
}
```

Example Responses

Status code: 200

OK

```
{
  "test_result" : "{ \"0\": \"1\" }"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rule-test.testSqlParsing]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.5 Deleting a Rule

Function

This API is used to delete a rule.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}

Table 6-297 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Request Parameters

None

Response Parameters

Status code: 400

Table 6-298 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-299 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-300 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
POST /{project_id}/link/instances/{instance_id}/rules/{rule_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rule.delete]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.6 Querying Rule Details

Function

This API is used to query rule details.

URI

GET /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}

Table 6-301 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Request Parameters

None

Response Parameters

Status code: 200

Table 6-302 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
rule_id	Integer	Rule ID. Minimum: 1 Maximum: 9999999999999999
name	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256
description	String	Description. Minimum: 0 Maximum: 200
status	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
data_parsing_status	Integer	Data parsing status. If status is set to 0, this parameter is mandatory and must be set to 0 (indicating that data parsing is enabled) or 1 (indicating that data parsing is disabled). Minimum: 0 Maximum: 10
sql_field	String	SQL query field. Minimum: 0 Maximum: 2000

Parameter	Type	Description
sql_where	String	SQL query condition. Minimum: 0 Maximum: 2000
rule_express	String	Complete rule expression. Minimum: 0 Maximum: 2000
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-303 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-304 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64

Parameter	Type	Description
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-305 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-306 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-307 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/rules/{rule_id}
```

Example Responses

Status code: 200

OK

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "rule_id": 702244,
  "name": "rule",
  "app_id": "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "app_name": "app-link",
  "description": null,
  "status": 0,
  "data_parsing_status": 1,
  "sql_field": null,
  "sql_where": null,
  "rule_express": null,
  "created_user": {
    "user_id": null,
    "user_name": "user"
  },
  "last_updated_user": {
    "user_id": null,
    "user_name": "user"
  },
  "created_datetime": 1607598152997,
  "last_updated_datetime": 1607598152997
}
```

Status code: 400

Bad Request

```
{
  "error_code": "SCB.00000000",
  "error_msg": "Parameter is not valid for operation [romalink.link-rule.queryDetail]. Parameter is [rule_oid]. Processor is [path].",
}
```

```
"requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID
ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:
f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.7 Modifying a Rule

Function

This API is used to modify a rule.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}

Table 6-308 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-309 Request body parameters

Parameter	Mandatory	Type	Description
name	No	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	No	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. If this parameter is left empty, the default value 0 is used. Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
data_parsing_status	No	Integer	Data parsing status. The options are as follows: 0: enabled; 1: disabled. If this parameter is left empty, the default value is 1. Minimum: 0 Maximum: 10
sql_field	No	String	SQL query field. Minimum: 0 Maximum: 2000
sql_where	No	String	SQL query condition. Minimum: 0 Maximum: 2000

Response Parameters

Status code: 200

Table 6-310 Response body parameters

Parameter	Type	Description
permissions	Array of strings	Permission.
rule_id	Integer	Rule ID. Minimum: 1 Maximum: 999999999999999999
name	String	Rule name, which is a string of 1 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 1 Maximum: 64
app_id	String	Application ID. Minimum: 0 Maximum: 64
app_name	String	Application name. Minimum: 0 Maximum: 256

Parameter	Type	Description
description	String	Description. Minimum: 0 Maximum: 200
status	Integer	Rule status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
data_parsing_status	Integer	Data parsing status. If status is set to 0, this parameter is mandatory and must be set to 0 (indicating that data parsing is enabled) or 1 (indicating that data parsing is disabled). Minimum: 0 Maximum: 10
sql_field	String	SQL query field. Minimum: 0 Maximum: 2000
sql_where	String	SQL query condition. Minimum: 0 Maximum: 2000
rule_express	String	Complete rule expression. Minimum: 0 Maximum: 2000
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in milliseconds). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-311 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-312 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-313** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-314 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-315 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "rule",
  "description" : "rule",
  "status" : 0,
  "data_parsing_status" : 0,
  "sql_field" : "field1",
  "sql_where" : "field2 like '%HAHA%'"
}
```

Example Responses

Status code: 200

OK

```
{
  "permissions": [ "read", "access", "delete", "modify" ],
  "rule_id": 702244,
  "name": "rule",
  "app_id": "a1503e51-46f7-4d23-8617-7cb2d28dde98",
  "app_name": "app-link",
  "description": null,
  "status": 0,
  "data_parsing_status": 1,
  "sql_field": null,
  "sql_where": null,
  "rule_express": null,
  "created_user": {
    "user_id": null,
    "user_name": "user"
  },
  "last_updated_user": {
    "user_id": null,
    "user_name": "user"
  },
  "created_datetime": 1607598152997,
  "last_updated_datetime": 1607598152997
}
```

Status code: 400

Bad Request

```
{
  "error_code": "SCB.00000000",
  "error_msg": "Parameter is not valid for operation [romalink.link-rule.update]. Parameter is [rule_oid]. Processor is [path].",
  "requestId": "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code": "ROMA.00110006",
  "error_msg": "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId": "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "ROMA.00110002",
  "error_msg": "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id": "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.8 Creating a Destination

Function

This API is used to create a destination of a rule.

URI

POST /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/destinations

Table 6-316 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-317 Request body parameters

Parameter	Mandatory	Type	Description
destination_type	Yes	Integer	Destination type. The options are as follows: 0: The destination is MQS in the ROMA instance. 7: The destination is a device. Minimum: 0 Maximum: 10
app_id	No	String	Application ID. If destination_type is 0, the application ID of the peer end must be specified. Minimum: 0 Maximum: 64
destination_name	No	String	Data source name at the destination. Minimum: 0 Maximum: 64
topic	Yes	String	Topic of the data source at the destination. Obtain the existing topic from the MQS service. Minimum: 0 Maximum: 64
server	No	String	Connection address of the data source at the destination. Minimum: 0 Maximum: 64
token	No	String	Token of the data source at the destination. Minimum: 0 Maximum: 1000
tag	No	String	Tag of the data source at the destination. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
mqs_sasl_ssl	No	Boolean	Whether the SASL field in the MQS data source at the destination needs to support SSL encryption.
user_name	No	String	Username for accessing the data source at the destination. Minimum: 0 Maximum: 64
password	No	String	Password for accessing the data source at the destination. Minimum: 0 Maximum: 64

Response Parameters

Status code: 201

Table 6-318 Response body parameters

Parameter	Type	Description
destination_id	Integer	Data source ID at the destination. Minimum: 1 Maximum: 9999999999999999
destination_type	Integer	Destination type. The options are as follows: 0: The destination is MQS in the ROMA instance. 7: The destination is a device. Minimum: 0 Maximum: 10
app_id	String	Application ID. If destination_type is 0, the application ID of the peer end must be specified. Minimum: 0 Maximum: 64
destination_name	String	Data source name at the destination. Minimum: 0 Maximum: 64
topic	String	Topic of the data source at the destination. Minimum: 0 Maximum: 64

Parameter	Type	Description
server	String	Data source at the destination. Minimum: 0 Maximum: 200
token	String	Token of the data source at the destination. Minimum: 0 Maximum: 1000
tag	String	Tag of the data source at the destination. Minimum: 0 Maximum: 200
mqs_sasl_ssl	Boolean	Whether the SASL field in the MQS data source at the destination needs to support SSL encryption.
user_name	String	Username for accessing the data source at the destination. Minimum: 0 Maximum: 80
password	String	Password for accessing the data source at the destination. Minimum: 0 Maximum: 500

Status code: 400

Table 6-319 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-320** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-321** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "destination_type" : 0,
  "app_id" : "ef3845be-091a-4ab5-869a-9de0025e2165",
  "destination_name" : "destination",
  "topic" : "/target_topic1",
  "server" : "xx.xx.xx.xx",
  "token" : "sd123r12312w12wdrfvgrt4t34t",
  "tag" : "tag1",
  "mqs_sasl_ssl" : false,
  "user_name" : "user1",
```



```
{
  "password" : "AS223ds4320d"
}
```

Example Responses

Status code: 201

Created

```
{
  "destination_id" : 27678,
  "destination_type" : 7,
  "app_id" : null,
  "destination_name" : null,
  "topic" : "8si8ST122893/in/214",
  "server" : "server",
  "token" : "token",
  "tag" : "device",
  "mqs_sasl_ssl" : "false",
  "user_name" : null,
  "password" : null
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-ruledest.save]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID ff38023c-0854-4779-847d-72528e1f5da5 is correct.",
  "requestId" : "72b07918-f6a2-4721-81bf-f3fd5486025e-1619663576836-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.9 Querying Destinations

Function

This API is used to querying destinations.

URI

GET /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/destinations

Table 6-322 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Table 6-323 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-324 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 0 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 0 Maximum: 999
items	Array of Destination objects	List of data sources at the destination.

Table 6-325 Destination

Parameter	Type	Description
destination_id	Integer	Data source ID at the destination. Minimum: 1 Maximum: 9999999999999999
destination_type	Integer	Destination type. The options are as follows: 0: The destination is MQS in the ROMA instance. 7: The destination is a device. Minimum: 0 Maximum: 10
app_id	String	Application ID. If destination_type is 0, the application ID of the peer end must be specified. Minimum: 0 Maximum: 64
destination_name	String	Data source name at the destination. Minimum: 0 Maximum: 64
topic	String	Topic of the data source at the destination. Minimum: 0 Maximum: 64
server	String	Data source at the destination. Minimum: 0 Maximum: 200
token	String	Token of the data source at the destination. Minimum: 0 Maximum: 1000
tag	String	Tag of the data source at the destination. Minimum: 0 Maximum: 200
mqs_sasl_ssl	Boolean	Whether the SASL field in the MQS data source at the destination needs to support SSL encryption.
user_name	String	Username for accessing the data source at the destination. Minimum: 0 Maximum: 80

Parameter	Type	Description
password	String	Password for accessing the data source at the destination. Minimum: 0 Maximum: 500

Status code: 400**Table 6-326** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-327** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-328 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

GET /{project_id}/link/instances/{instance_id}/rules/{rule_id}/destinations

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "destination_id" : 27678,
    "destination_type" : 7,
    "app_id" : null,
    "destination_name" : null,
    "topic" : "8si8ST122893/in/214",
    "server" : "server",
    "token" : "token",
    "tag" : "device",
    "mqs_sasl_ssl" : "false",
    "user_name" : null,
    "password" : null
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-ruledest.query]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.10 Deleting a Destination

Function

This API is used to delete a destination of a rule.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/destinations/{destination_id}

Table 6-329 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20
destination_id	Yes	Integer	Data source ID at the destination. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-330 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-331** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-332** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/rules/{rule_id}/destinations/{destination_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-ruledest.delete]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.11 Creating a Source

Function

This API is used to create a source of a rule.

URI

POST /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/sources

Table 6-333 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-334 Request body parameters

Parameter	Mandatory	Type	Description
product_id	Yes	Integer	Product ID, which is automatically rounded down. Minimum: 1 Maximum: 9999999999999999
device_id	No	Integer	Device ID. The value is automatically rounded down. If this parameter is left blank, all devices are queried. Minimum: 1 Maximum: 9999999999999999

Parameter	Mandatory	Type	Description
topic	Yes	String	Topic. If the device ID is left empty, the topic is a product-level topic. If the device ID is not left empty, the topic is a device-level topic. Minimum: 0 Maximum: 64
is_base64	No	Integer	Whether the payload uses Base64 encoding. 0: yes 1: no Minimum: 1 Maximum: 10 Default: 1
contain_device_info	No	Integer	Whether device information is included. 0: yes 1: no Minimum: 1 Maximum: 10 Default: 1

Response Parameters

Status code: 201

Table 6-335 Response body parameters

Parameter	Type	Description
source_id	Integer	Data source ID at the source. Minimum: 1 Maximum: 9999999999999999
product_id	Integer	Product ID. Minimum: 1 Maximum: 9999999999999999
device_id	Integer	Device ID. If this parameter is left blank, all devices are queried. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
topic	String	Topic. If the device ID is left empty, the topic is a product-level topic. If the device ID is not left empty, the topic is a device-level topic. Minimum: 0 Maximum: 200
device_name	String	Device name. Minimum: 0 Maximum: 64
product_name	String	Product name. Minimum: 0 Maximum: 64
is_base64	Integer	Whether the payload uses Base64 encoding. 0: yes 1: no Minimum: 0 Maximum: 10 Default: 1
contain_device_info	Integer	Whether device information is included. 0: yes 1: no Minimum: 0 Maximum: 10 Default: 1

Status code: 400

Table 6-336 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-337** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-338** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "product_id" : 100001,
  "device_id" : 200001,
  "topic" : "/v1/3ds234242/datas",
  "is_base64" : 0,
  "contain_device_info" : 0
}
```

Example Responses

Status code: 201

Created

```
{
  "source_id" : 35296,
  "product_id" : 122893,
  "device_id" : 711568,
  "topic" : "/v1/devices/214/datas",
  "device_name" : "device",
  "product_name" : "product",
  "is_base64" : 0,
  "contain_device_info" : 0
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rulesrc.save]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.12 Querying Sources

Function

This API is used to query sources.

URI

GET /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/sources

Table 6-339 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20

Table 6-340 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-341 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 0 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 0 Maximum: 999
items	Array of Source objects	Data source list.

Table 6-342 Source

Parameter	Type	Description
source_id	Integer	Data source ID at the source. Minimum: 1 Maximum: 9999999999999999
product_id	Integer	Product ID. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
device_id	Integer	Device ID. If this parameter is left blank, all devices are queried. Minimum: 1 Maximum: 999999999999999999
topic	String	Topic. If the device ID is left empty, the topic is a product-level topic. If the device ID is not left empty, the topic is a device-level topic. Minimum: 0 Maximum: 200
device_name	String	Device name. Minimum: 0 Maximum: 64
product_name	String	Product name. Minimum: 0 Maximum: 64
is_base64	Integer	Whether the payload uses Base64 encoding. 0: yes 1: no Minimum: 0 Maximum: 10 Default: 1
contain_device_info	Integer	Whether device information is included. 0: yes 1: no Minimum: 0 Maximum: 10 Default: 1

Status code: 400

Table 6-343 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-344 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-345 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/rules/{rule_id}/sources
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "source_id" : 35296,
    "product_id" : 122893,
    "device_id" : 711568,
    "topic" : "/v1/devices/214/datas",
    "device_name" : "device",
    "product_name" : "product",
    "is_base64" : 0,
    "contain_device_info" : 0
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rulesrc.query]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.5.13 Deleting a Source

Function

This API is used to delete a source of a rule.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/rules/{rule_id}/sources/{source_id}

Table 6-346 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
rule_id	Yes	String	Rule ID. Minimum: 0 Maximum: 20
source_id	Yes	Integer	Data source ID at the source. Minimum: 1 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-347 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-348 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-349 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/rules/{rule_id}/sources/{source_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-rulesrc.delete]. Parameter is [rule_oid]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6 Service Management

6.6.1 Creating a Service

Function

This API is used to create a service.

URI

POST /v2/{project_id}/link/instances/{instance_id}/services

Table 6-350 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Request Parameters

Table 6-351 Request body parameters

Parameter	Mandatory	Type	Description
product_template_id	No	Integer	ID of the product template to which the service belongs. Either product_template_id or product_id must be specified. The value is automatically rounded down. Minimum: 1 Maximum: 9999999999999999
product_id	No	Integer	ID of the product to which the service belongs. Either product_template_id or product_id must be specified. The value is automatically rounded down. Minimum: 1 Maximum: 9999999999999999
service_name	Yes	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Yes	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10

Response Parameters

Status code: 201

Table 6-352 Response body parameters

Parameter	Type	Description
product_template_id	Integer	ID of the product template to which a service belongs. Minimum: 1 Maximum: 999999999999999999
product_id	Integer	ID of the product to which a service belongs. Minimum: 1 Maximum: 999999999999999999
service_id	Integer	Service ID. Minimum: 1 Maximum: 999999999999999999
service_name	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation end time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 999999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Table 6-353 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-354 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-355 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-356 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-357 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "product_template_id" : 10001,
  "service_name" : "service",
  "description" : "service",
  "status" : 0
}
```

Example Responses

Status code: 201

Created

```
{
  "product_template_id" : null,
  "product_id" : 122893,
  "service_id" : 10190,
  "service_name" : "s1",
  "description" : null,
  "status" : 0,
  "created_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "last_updated_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607502702474,
  "last_updated_datetime" : 1607572282845
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.saveService]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.2 Querying Services

Function

This API is used to querying services.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services

Table 6-358 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Table 6-359 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
service_id	No	Integer	Service ID. Minimum: 1 Maximum: 999999999999999999

Parameter	Mandatory	Type	Description
service_name	No	String	Service name. Minimum: 0 Maximum: 64
product_template_id	No	Integer	ID of the product template to which the service belongs. Either product_template_id or product_id must be set. Minimum: 1 Maximum: 9999999999999999
product_id	No	Integer	ID of the product to which the service belongs. Either product_template_id or product_id must be set. Minimum: 1 Maximum: 9999999999999999
created_user_name	No	String	Name of the user who created the product template. Minimum: 2 Maximum: 64
created_date_start	No	Long	Creation start time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
created_date_end	No	Long	Creation end time. The format is timestamp(ms) and the UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-360 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 999999999999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of Service objects	Service list.

Table 6-361 Service

Parameter	Type	Description
product_template_id	Integer	ID of the product template to which a service belongs. Minimum: 1 Maximum: 999999999999999999
product_id	Integer	ID of the product to which a service belongs. Minimum: 1 Maximum: 999999999999999999
service_id	Integer	Service ID. Minimum: 1 Maximum: 999999999999999999
service_name	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64

Parameter	Type	Description
description	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation end time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-362 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-363 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64

Parameter	Type	Description
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-364 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-365 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-366 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/services
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "product_template_id" : null,
    "product_id" : 122893,
    "service_id" : 10190,
    "service_name" : "s1",
    "description" : null,
    "status" : 0,
    "created_user" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "last_updated_user" : {
      "user_id" : null,
      "user_name" : "user"
    },
    "created_datetime" : 1607502702474,
    "last_updated_datetime" : 1607572282845
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.queryService]. Parameter is [X-Auth-Token]. Processor is [header].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Not Found"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.6.3 Deleting a Service****Function**

This API is used to delete a service.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/services/{service_id}

Table 6-367 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Request Parameters

None

Response Parameters

Status code: 400

Table 6-368 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-369 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-370** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/services/{service_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.deleteService]. Parameter is [service_id]. Processor is [path].",
}
```

```
{
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.4 Querying Service Details

Function

This API is used to query service details.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}

Table 6-371 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Request Parameters

None

Response Parameters

Status code: 200

Table 6-372 Response body parameters

Parameter	Type	Description
product_template_id	Integer	ID of the product template to which a service belongs. Minimum: 1 Maximum: 999999999999999999
product_id	Integer	ID of the product to which a service belongs. Minimum: 1 Maximum: 999999999999999999
service_id	Integer	Service ID. Minimum: 1 Maximum: 999999999999999999

Parameter	Type	Description
service_name	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation end time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999
last_updated_datetime	Long	Last modification time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Table 6-373 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-374 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400

Table 6-375 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-376 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-377 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/services/{service_id}
```

Example Responses

Status code: 200

OK

```
{
  "product_template_id" : null,
  "product_id" : 122893,
  "service_id" : 10190,
  "service_name" : "s1",
  "description" : null,
  "status" : 0,
  "created_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "last_updated_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607502702474,
  "last_updated_datetime" : 1607572282845
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.queryServiceDetail]. Parameter is [service_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.6.5 Modifying a Service****Function**

This API is used to modify a service.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/services/{service_id}

Table 6-378 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-379 Request body parameters

Parameter	Mandatory	Type	Description
service_name	Yes	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	No	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Yes	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10

Response Parameters

Status code: 200

Table 6-380 Response body parameters

Parameter	Type	Description
product_template_id	Integer	ID of the product template to which a service belongs. Minimum: 1 Maximum: 9999999999999999
product_id	Integer	ID of the product to which a service belongs. Minimum: 1 Maximum: 9999999999999999
service_id	Integer	Service ID. Minimum: 1 Maximum: 9999999999999999
service_name	String	Service name, which is a string of 2 to 64 characters containing case-sensitive letters, digits, underscores (_), and hyphens (-). Minimum: 2 Maximum: 64
description	String	Service description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
status	Integer	Service status. The options are as follows: 0: enabled; 1: disabled. Minimum: 0 Maximum: 10
created_user	CreatedUser object	Name of the user who created the attribute.
last_updated_user	LastUpdatedUser object	User who performed the last update.
created_datetime	Long	Creation end time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
last_updated_datetime	Long	Last modification time (timestamp, in millisecond). The UTC time zone is used. Minimum: 1 Maximum: 999999999999999999

Table 6-381 CreatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Table 6-382 LastUpdatedUser

Parameter	Type	Description
user_id	String	User ID (reserved). Minimum: 0 Maximum: 64
user_name	String	Username. Minimum: 0 Maximum: 64

Status code: 400**Table 6-383** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-384** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-385** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "service_name" : "service",
  "description" : "service",
  "status" : 0
}
```

Example Responses

Status code: 200

OK

```
{
  "product_template_id" : null,
  "product_id" : 122893,
  "service_id" : 10190,
  "service_name" : "s1",
  "description" : null,
  "status" : 0,
  "created_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "last_updated_user" : {
    "user_id" : null,
    "user_name" : "user"
  },
  "created_datetime" : 1607502702474,
  "last_updated_datetime" : 1607572282845
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.updateService]. Parameter is [service_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.6 Creating an Attribute

Function

This API is used to create an attribute.

URI

POST /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/properties

Table 6-386 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36

Parameter	Mandatory	Type	Description
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-387 Request body parameters

Parameter	Mandatory	Type	Description
property_name	Yes	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	Yes	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHHmmss. If data_type is set to json, the enumerated value uses the user-defined JSON format.

Parameter	Mandatory	Type	Description
required	Yes	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	No	String	Minimum value. This parameter is mandatory if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	No	String	Maximum value. This parameter is mandatory when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	No	String	Step. This parameter is mandatory if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	No	Integer	Maximum length of a character string. This parameter is mandatory if data_type is set to string, datetime, or json. The value is automatically rounded down. Minimum: 1 Maximum: 999999 Default: 10
unit	No	String	Attribute unit. Minimum: 0 Maximum: 50

Parameter	Mandatory	Type	Description
enum_list	No	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Response Parameters

Status code: 201

Table 6-388 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10

Parameter	Type	Description
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (.). Minimum: 0 Maximum: 2000

Status code: 400

Table 6-389 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-390** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-391** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "property_name": "power_usage",
  "description": "power_usage",
  "data_type": "integer",
  "required": 0,
  "min": "0",
  "max": "100",
  "step": "1",
  "unit": "W"
}
```

Example Responses

Status code: 201

Created

```
{
  "property_id": 3320,
  "property_name": "p2",
  "description": null,
  "data_type": "datetime",
  "required": 0,
  "min": 0,
  "max": 65536,
  "step": 1,
  "max_length": "10",
  "unit": "yuan",
  "enum_list": null
}
```

Status code: 400

Bad Request

```
{
  "error_code": "SCB.00000000",
  "error_msg": "Parameter is not valid for operation [romalink.link-command.saveProperty]. Parameter is [service_id]. Processor is [path].",
  "requestId": "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code": "ROMA.00110006",
  "error_msg": "The resource does not exist. Check whether the resource ID 1 is correct."
}
```



```
{
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.7 Querying Attributes

Function

This API is used to query attributes.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/properties

Table 6-392 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Table 6-393 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
property_id	No	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	No	String	Attribute name. Minimum: 0 Maximum: 64
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-394 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of Property objects	Attribute list.

Table 6-395 Property

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 9999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Parameter	Type	Description
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10

Parameter	Type	Description
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-396** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-397** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-398 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

GET /{project_id}/link/instances/{instance_id}/services/{service_id}/properties

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "size": 1,
  "items": [ {
    "property_id": 3320,
    "property_name": "p2",
    "description": null,
    "data_type": "datetime",
    "required": 0,
    "min": 0,
    "max": 65536,
    "step": 1,
    "max_length": "10",
    "unit": "yuan",
    "enum_list": null
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-command.saveProperty]. Parameter is [service_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.6.8 Creating a Command****Function**

This API is used to create a command.

URI

POST /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands

Table 6-399 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Request Parameters

Table 6-400 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Service command name. The value is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). Minimum: 2 Maximum: 50
description	No	String	Service command description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Response Parameters

Status code: 200

Table 6-401 Response body parameters

Parameter	Type	Description
service_id	Integer	ID of the service to which the command belongs. Minimum: 0 Maximum: 9999999999999999
command_id	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
command_name	String	Command name. Minimum: 0 Maximum: 255
description	String	Command description. Minimum: 0 Maximum: 255

Status code: 400**Table 6-402** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-403 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-404 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "service",
  "description" : "service"
}
```

Example Responses

Status code: 200

Created

```
{
  "serviceId" : 10190,
```

```
"commandId" : 6398,  
"commandName" : "command",  
"description" : "command"  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.saveCommand]. Parameter is  
[service_id]. Processor is [path].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00110006",  
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",  
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.9 Querying Commands

Function

This API is used to query commands.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands

Table 6-405 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Table 6-406 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
command_id	No	Integer	Command ID. Minimum: 1 Maximum: 999999999999999999
command_name	No	String	Command name. Minimum: 0 Maximum: 64

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-407 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 999999999999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 9999
items	Array of Command objects	Command list.

Table 6-408 Command

Parameter	Type	Description
service_id	Integer	ID of the service to which the command belongs. Minimum: 0 Maximum: 999999999999999999
command_id	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Parameter	Type	Description
command_name	String	Command name. Minimum: 0 Maximum: 255
description	String	Command description. Minimum: 0 Maximum: 255

Status code: 400**Table 6-409** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-410** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-411 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

GET /{project_id}/link/instances/{instance_id}/services/{service_id}/commands

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "serviceId" : 10190,
    "commandId" : 6398,
    "commandName" : "command",
    "description" : "command"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.queryCommandsInService]."
```

```
Parameter is [service_id]. Processor is [path].",
"requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.10 Deleting a Command

Function

This API is used to delete a command.

URI

```
DELETE /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/
commands/{command_id}
```


Table 6-412 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-413 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-414 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-415 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.deleteCommand]. Parameter is [service_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.11 Querying Command Details

Function

This API is used to query command details.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}

Table 6-416 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-417 Response body parameters

Parameter	Type	Description
service_id	Integer	ID of the service to which the command belongs. Minimum: 0 Maximum: 999999999999999999

Parameter	Type	Description
command_id	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
command_name	String	Command name. Minimum: 0 Maximum: 255
description	String	Command description. Minimum: 0 Maximum: 255

Status code: 400**Table 6-418** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-419** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-420 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}
```

Example Responses

Status code: 200

OK

```
{
  "serviceId" : 10190,
  "commandId" : 6398,
  "commandName" : "command",
  "description" : "command"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",

```

```
"error_msg" : "Parameter is not valid for operation [romalink.link-services.queryCommand]. Parameter is [service_id]. Processor is [path].",
"requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.12 Modifying a Command

Function

This API is used to modify a command.

URI

```
PUT /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/
{command_id}
```

Table 6-421 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

Table 6-422 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Service command name. The value is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). Minimum: 2 Maximum: 50
description	No	String	Service command description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Response Parameters

Status code: 200

Table 6-423 Response body parameters

Parameter	Type	Description
service_id	Integer	ID of the service to which the command belongs. Minimum: 0 Maximum: 9999999999999999
command_id	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
command_name	String	Command name. Minimum: 0 Maximum: 255
description	String	Command description. Minimum: 0 Maximum: 255

Status code: 400**Table 6-424** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-425 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-426 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "name" : "service",
  "description" : "service"
}
```

Example Responses

Status code: 200

OK

```
{
  "serviceId" : 10190,
```

```
"commandId" : 6398,  
"commandName" : "command",  
"description" : "command"  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "SCB.00000000",  
  "error_msg" : "Parameter is not valid for operation [romalink.link-services.updateCommand]. Parameter is  
[service_id]. Processor is [path].",  
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "ROMA.00110006",  
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",  
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "ROMA.00110002",  
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id:  
f3bb386a-23ec-47aa-9943-4c60ac658611",  
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.13 Creating a Request Attribute

Function

This API is used to create a request attribute.

URI

POST /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/requests

Table 6-427 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-428 Request body parameters

Parameter	Mandatory	Type	Description
property_name	Yes	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50

Parameter	Mandatory	Type	Description
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	Yes	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format.
required	Yes	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	No	String	Minimum value. This parameter is mandatory if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	No	String	Maximum value. This parameter is mandatory when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
step	No	String	Step. This parameter is mandatory if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	No	Integer	Maximum length of a character string. This parameter is mandatory if data_type is set to string, datetime, or json. The value is automatically rounded down. Minimum: 1 Maximum: 999999 Default: 10
unit	No	String	Attribute unit. Minimum: 0 Maximum: 50
enum_list	No	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Response Parameters

Status code: 200

Table 6-429 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50

Parameter	Type	Description
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHHmmss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10

Parameter	Type	Description
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (.). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-430** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-431 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-432** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "property_name": "power_usage",
  "description": "power_usage",
  "data_type": "integer",
  "required": 0,
  "min": "0",
  "max": "100",
  "step": "1",
  "unit": "W"
}
```

Example Responses

Status code: 200

Created

```
{
  "property_id" : 3320,
  "property_name" : "p2",
  "description" : null,
  "data_type" : "datetime",
  "required" : 0,
  "min" : 0,
  "max" : 65536,
  "step" : 1,
  "max_length" : "10",
  "unit" : "yuan",
  "enum_list" : null
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-requests.saveCommandSend]. Parameter is [service_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.14 Querying Request Attributes

Function

This API is used to query request attributes.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/requests

Table 6-433 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Table 6-434 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
request_id	No	Integer	Request attribute ID. Minimum: 1 Maximum: 999999999999999999
request_name	No	String	Request attribute name. Minimum: 0 Maximum: 64
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-435 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 9999999999999999

Parameter	Type	Description
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of Property objects	Attribute list.

Table 6-436 Property

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10

Parameter	Type	Description
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (.). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-437** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-438** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-439** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/requests
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "size" : 1,
  "items" : [ {
    "property_id" : 3320,
    "property_name" : "p2",
    "description" : null,
    "data_type" : "datetime",
    "required" : 0,
    "min" : 0,
    "max" : 65536,
    "step" : 1,
    "max_length" : "10",
    "unit" : "yuan",
    "enum_list" : null
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-command.queryCommandSend]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
}
```



```
"request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.15 Deleting a Request Attribute

Function

This API is used to delete a request attribute.

URI

DELETE /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/
commands/{command_id}/requests/{property_id}

Table 6-440 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Parameter	Mandatory	Type	Description
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999
property_id	Yes	Integer	Attribute/Request attribute/ Response attribute ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-441 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-442 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-443** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
DELETE /{project_id}/link/instances/{instance_id}/services/commands/{command_id}/requests/{property_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-requests.deleteCommandSend].
Parameter is [command_id]. Processor is [path].",
}
```

```
{
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.16 Modifying a Request Attribute

Function

This API is used to modify a request attribute.

URI

```
PUT /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/
{command_id}/requests/{property_id}
```

Table 6-444 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
property_id	Yes	Integer	Attribute/Request attribute/Response attribute ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

Table 6-445 Request body parameters

Parameter	Mandatory	Type	Description
property_name	Yes	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50

Parameter	Mandatory	Type	Description
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	Yes	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Yes	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	No	String	Minimum value. This parameter is mandatory if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	No	String	Maximum value. This parameter is mandatory when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
step	No	String	Step. This parameter is mandatory if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	No	Integer	Maximum length of a character string. This parameter is mandatory if data_type is set to string, datetime, or json. The value is automatically rounded down. Minimum: 0 Maximum: 9999999 Default: 10
unit	No	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	No	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Response Parameters

Status code: 200

Table 6-446 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50

Parameter	Type	Description
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10

Parameter	Type	Description
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (.). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-447** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-448 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-449** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{  
  "property_name": "power_usage",  
  "description": "power_usage",  
  "data_type": "integer",  
  "required": 0,  
  "min": "0",  
  "max": "1000",  
  "step": "1"  
}
```

Example Responses

Status code: 200

OK

```
{
  "property_id" : 3320,
  "property_name" : "p2",
  "description" : null,
  "data_type" : "datetime",
  "required" : 0,
  "min" : 0,
  "max" : 65536,
  "step" : 1,
  "max_length" : "10",
  "unit" : "yuan",
  "enum_list" : null
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-requests.updateCommandSend]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.17 Creating a Response Attribute

Function

This API is used to create a response attribute.

URI

POST /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/responses

Table 6-450 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-451 Request body parameters

Parameter	Mandatory	Type	Description
property_name	Yes	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	Yes	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format.
required	Yes	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
min	No	String	Minimum value. This parameter is mandatory if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	No	String	Maximum value. This parameter is mandatory when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	No	String	Step. This parameter is mandatory if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	No	Integer	Maximum length of a character string. This parameter is mandatory if data_type is set to string, datetime, or json. The value is automatically rounded down. Minimum: 1 Maximum: 999999 Default: 10
unit	No	String	Attribute unit. Minimum: 0 Maximum: 50
enum_list	No	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Response Parameters

Status code: 201

Table 6-452 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10

Parameter	Type	Description
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-453** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404

Table 6-454 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-455 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "property_name": "power_usage",
  "description": "power_usage",
  "data_type": "integer",
  "required": 0,
  "min": "0",
  "max": "100",
  "step": "1",
  "unit": "W"
}
```

Example Responses

Status code: 201

Created

```
{
  "property_id": 3320,
  "property_name": "p2",
  "description": null,
  "data_type": "datetime",
  "required": 0,
  "min": 0,
  "max": 65536,
  "step": 1,
  "max_length": "10",
  "unit": "yuan",
  "enum_list": null
}
```

Status code: 400

Bad Request

```
{
  "error_code": "SCB.00000000",
  "error_msg": "Parameter is not valid for operation [romalink.link-services-responses.saveCommandResponse]. Parameter is [command_id]. Processor is [path].",
  "requestId": "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code": "ROMA.00110006",
  "error_msg": "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId": "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "ROMA.00110002",
  "error_msg": "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id": "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.18 Querying Response Attributes

Function

This API is used to query response attributes.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/responses

Table 6-456 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20

Parameter	Mandatory	Type	Description
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 999999999999999999

Table 6-457 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 999. If the value exceeds 999, only 999 items are returned. Minimum: 0 Maximum: 999999 Default: 10
response_id	No	Integer	Response attribute ID. Minimum: 1 Maximum: 999999999999999999
response_name	No	String	Response attribute name. Minimum: 0 Maximum: 64
offset	No	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0 Maximum: 999999 Default: 0

Request Parameters

None

Response Parameters

Status code: 200

Table 6-458 Response body parameters

Parameter	Type	Description
total	Integer	Total. Minimum: 1 Maximum: 9999999999999999
size	Integer	Number of records displayed on each page. Minimum: 1 Maximum: 999
items	Array of Property objects	Attribute list.

Table 6-459 Property

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 9999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200

Parameter	Type	Description
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10

Parameter	Type	Description
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-460** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-461** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500

Table 6-462 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

GET /{project_id}/link/instances/{instance_id}/services/commands/{command_id}/responses

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "size": 1,
  "items": [ {
    "property_id": 3320,
    "property_name": "p2",
    "description": null,
    "data_type": "datetime",
    "required": 0,
    "min": 0,
    "max": 65536,
    "step": 1,
    "max_length": "10",
    "unit": "yuan",
    "enum_list": null
  } ]
}
```


Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-responses.pageQueryCommandResponse]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).**6.6.19 Deleting a Response Attribute****Function**

This API is used to delete a response attribute.

URI

```
DELETE /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/
commands/{command_id}/responses/{property_id}
```

Table 6-463 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
property_id	Yes	Integer	Attribute/Request attribute/Response attribute ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 400

Table 6-464 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-465** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-466** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

DELETE /{project_id}/link/instances/{instance_id}/services/commands/{command_id}/responses/{property_id}

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-responses.deleteCommandResponse]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
204	No Content
400	Bad Request
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.20 Querying Response Attributes

Function

This API is used to query response attributes.

URI

GET /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/responses/{property_id}

Table 6-467 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999
property_id	Yes	Integer	Attribute/Request attribute/Response attribute ID. Minimum: 0 Maximum: 9999999999999999

Request Parameters

None

Response Parameters

Status code: 200

Table 6-468 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10

Parameter	Type	Description
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Status code: 400**Table 6-469** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200

Parameter	Type	Description
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-470** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-471** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
GET /{project_id}/link/instances/{instance_id}/services/commands/{command_id}/responses/{property_id}
```

Example Responses

Status code: 200

OK

```
{
  "property_id" : 3320,
  "property_name" : "p2",
  "description" : null,
  "data_type" : "datetime",
  "required" : 0,
  "min" : 0,
  "max" : 65536,
  "step" : 1,
  "max_length" : "10",
  "unit" : "yuan",
  "enum_list" : null
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-responses.queryCommandResponseDetail]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "ROMA.00110002",
  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",
  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request

Status Code	Description
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.6.21 Modifying a Response Attribute

Function

This API is used to modify a response attribute.

URI

PUT /v2/{project_id}/link/instances/{instance_id}/services/{service_id}/commands/{command_id}/responses/{property_id}

Table 6-472 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain the project ID, see Appendix > Obtaining a Project ID in the ROMA Connect API Reference. Minimum: 0 Maximum: 32
instance_id	Yes	String	Instance ID. Minimum: 0 Maximum: 36
service_id	Yes	String	Service ID. Minimum: 0 Maximum: 20
command_id	Yes	Integer	Command ID. Minimum: 0 Maximum: 9999999999999999

Parameter	Mandatory	Type	Description
property_id	Yes	Integer	Attribute/Request attribute/ Response attribute ID. Minimum: 0 Maximum: 999999999999999999

Request Parameters

Table 6-473 Request body parameters

Parameter	Mandatory	Type	Description
property_name	Yes	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	No	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	Yes	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHHmmss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
required	Yes	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	No	String	Minimum value. This parameter is mandatory if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	No	String	Maximum value. This parameter is mandatory when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	No	String	Step. This parameter is mandatory if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	No	Integer	Maximum length of a character string. This parameter is mandatory if data_type is set to string, datetime, or json. The value is automatically rounded down. Minimum: 0 Maximum: 9999999 Default: 10
unit	No	String	Attribute unit. Minimum: 0 Maximum: 10

Parameter	Mandatory	Type	Description
enum_list	No	String	Array of enumerated values of the string type. The values are separated by commas (,). Minimum: 0 Maximum: 2000

Response Parameters

Status code: 200

Table 6-474 Response body parameters

Parameter	Type	Description
property_id	Integer	Attribute ID. Minimum: 1 Maximum: 999999999999999999
property_name	String	Attribute name, which is a string of 2 to 50 characters containing letters, digits, hyphens (-), and underscores (_). The value must start with a letter. Minimum: 2 Maximum: 50
description	String	Description, which contains a maximum of 200 characters. Minimum: 0 Maximum: 200
data_type	String	Attribute data type. Enumerated values are case-sensitive. If data_type is set to number, the enumerated value is a number ranging from $\pm 1.0 \times 10^{-28}$ to $\pm 7.9228 \times 10^{28}$. If data_type is set to string, the enumerated value is a character string. If data_type is set to integer, the enumerated value is an integer. If data_type is set to datetime, the enumerated value is the time in the format of yyyyMMddTHH:mm:ss. If data_type is set to json, the enumerated value uses the user-defined JSON format. Minimum: 0 Maximum: 10

Parameter	Type	Description
required	Integer	Whether a field is mandatory. The options are as follows: 0: no; 1: yes. Minimum: 0 Maximum: 10
min	String	Minimum value. This parameter is available if data_type is set to integer or number. Default: 0 Minimum: 0 Maximum: 10
max	String	Maximum value. This parameter is valid when data_type is set to integer or number. Default: 65536 Minimum: 0 Maximum: 10
step	String	Step. This parameter is available if data_type is set to integer or number. Default: 1 Minimum: 0 Maximum: 10
max_length	Integer	Maximum length of a character string. This parameter is available if data_type is set to string, datetime, or json. Minimum: 1 Maximum: 99999999 Default: 10
unit	String	Attribute unit. Minimum: 0 Maximum: 10
enum_list	String	Array of enumerated values of the string type. The values are separated by commas (.). Minimum: 0 Maximum: 2000

Status code: 400

Table 6-475 Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 404**Table 6-476** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Status code: 500**Table 6-477** Response body parameters

Parameter	Type	Description
error_code	String	System error code, which is the detailed error code of HTTP error codes 4xx and 5xx. Minimum: 0 Maximum: 64

Parameter	Type	Description
error_msg	String	Error description. Minimum: 0 Maximum: 200
request_id	String	Message ID. Minimum: 0 Maximum: 64

Example Requests

```
{
  "property_name" : "power_usage",
  "description" : "power_usage",
  "data_type" : "integer",
  "required" : 0,
  "min" : "0",
  "max" : "1000",
  "step" : "1"
}
```

Example Responses

Status code: 200

OK

```
{
  "property_id" : 3320,
  "property_name" : "p2",
  "description" : null,
  "data_type" : "datetime",
  "required" : 0,
  "min" : 0,
  "max" : 65536,
  "step" : 1,
  "max_length" : "10",
  "unit" : "yuan",
  "enum_list" : null
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "SCB.00000000",
  "error_msg" : "Parameter is not valid for operation [romalink.link-services-responses.updateCommandResponse]. Parameter is [command_id]. Processor is [path].",
  "requestId" : "cb39e78a-afd3-4e04-901d-70468b1c23dc-1619602712496-cnnorth7a-P-romalink-service01"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "ROMA.00110006",
  "error_msg" : "The resource does not exist. Check whether the resource ID 1 is correct.",
}
```



```
{  "requestId" : "13984193-ca65-4954-9b7f-4b7d680399d6-1619678681445-cnnorth7a-P-romalink-service01"}
```

Status code: 500

Internal Server Error

```
{  "error_code" : "ROMA.00110002",  "error_msg" : "The instance does not exist. project_id: 397cd10b30544c588b2f4a56d83856c4, instance_id: f3bb386a-23ec-47aa-9943-4c60ac658611",  "request_id" : "c8c06d0a-be92-4fdf-9d10-bc20131ab158-1619593104919-cnnorth7a-P-romalink-service01"}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Not Found
500	Internal Server Error

Error CodesSee [Error Codes](#).

7 Appendix

7.1 Obtaining a Project ID

Obtaining a Project ID by Calling an API

A project ID can also be obtained by calling a specific API. For details, see [Querying Project Information of IAM](#).

The API for obtaining a project ID is **GET https://{Endpoint}/v3/projects/**. **{Endpoint}** indicates the endpoint of IAM, which can be obtained from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

In the following example, **id** indicates the project ID.

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

Obtaining a Project ID from the Console

A project ID is required for some URLs when an API is called. To obtain a project ID, perform the following operations:

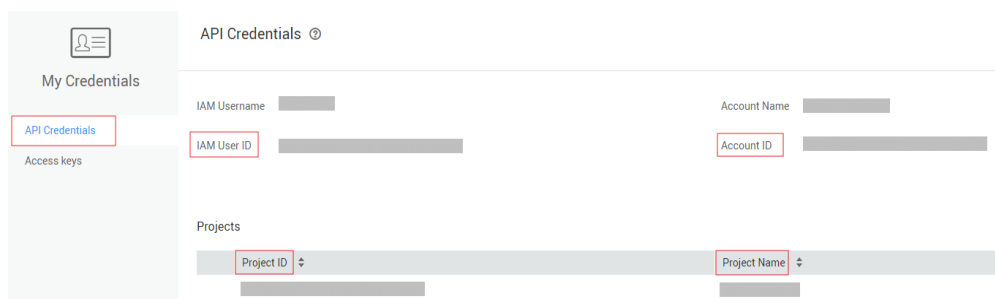
1. Click the username and choose **My Credentials** from the drop-down list.
On the **My Credentials** page, view project IDs in the project list.

7.2 Obtaining the Account ID

An account ID (**domain-id**) is required for some URLs when an API is called. To obtain the account ID, perform the following steps:

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

Figure 7-1 Obtaining your account ID



7.3 Status Codes

Table 7-1 Status codes

Status Code	Description
200 OK	The request is normal.
201 Created	The request has been fulfilled and resulted in a new resource being created.
202 Accepted	The request has been accepted, but the processing has not been completed.
204 No Content	The server successfully processed the request and is not returning any content.
400 Bad Request	The request could not be understood by the server due to malformed syntax. The client should modify the request instead of re-initiating it.
401 Unauthorized	The authentication information is incorrect or invalid.
403 Forbidden	The server understood the request, but is refusing to fulfill it. The client should not repeat the request without modifications.

Status Code	Description
404 Not Found	The requested resource cannot be found. The client should modify the request instead of re-initiating it.
405 Method Not Allowed	The method specified in the request is not allowed for the requested resource. The client should modify the request instead of re-initiating it.
406 Not Acceptable	The server cannot fulfill the request based on the content characteristics of the request.
407 Proxy Authentication Required	This code is similar to 401, but indicates that the client must first authenticate itself with the proxy.
408 Request Timeout	The client does not produce a request within the time that the server was prepared to wait. The client may repeat the request without modifications at any later time.
409 Conflict	The request could not be completed due to a conflict with the current state of the resource. This status code indicates the resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request.
410 Gone	The requested resource is no longer available. The status code indicates that the requested resource has been deleted permanently.
429 Too Many Request	The client has sent more requests than its rate limit is allowed within a given amount of time, or the server has received more requests than it is able to process within a given amount of time. In this case, the client should repeat requests after the time specified in the Retry-After header of the response expires.
500 Internal Server Error	The server encountered an unexpected condition which prevented it from fulfilling the request.
501 Not Implemented	The server does not support the functionality required to fulfill the request.
502 Bad Gateway	The server, while acting as a gateway or proxy, received an invalid response from the upstream server it accessed in attempting to fulfill the request.
503 Service Unavailable	The requested service is unavailable. The client should modify the request instead of re-initiating it.

Status Code	Description
504 Gateway Timeout	The request cannot be fulfilled within a given amount of time. This status code is returned to the client only when the timeout parameter is specified in the request.

7.4 Error Codes

7.4.1 Error Codes of Public Resource APIs

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.1000	No token is available in the request.	No token is available in the request.	Add the token field to the header of the request.
400	ROMA.10010	Failed to create the task.	Failed to create the task.	Rectify the fault against the failure cause, and try again.
400	ROMA.10011	Failed to decompress the file.	Failed to decompress the file.	Rectify the fault against the failure cause, and try again.
400	ROMA.10012	An asset management task is running.	An asset management task is running.	Try again after the task is complete.
400	ROMA.10013	Only .zip files are supported. The file name must start with a letter or digit. Among all the special characters, only the plus sign (+), minus sign (-), and underscore (_) are allowed.	Only .zip files are supported. The file name must start with a letter or digit. Among all the special characters, only the plus sign (+), minus sign (-), and underscore (_) are allowed.	Check whether the conditions are met and try again.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.1002	Incorrect token in the request.	Incorrect token in the request.	Add the correct token to the header of the request.
400	ROMA.1006	You do not have the permissions required to perform this operation.	You do not have the permissions required to perform this operation.	Grant the required permissions to the user account on the IAM console.
400	ROMA.1007	Invalid request URL.	Invalid request URL.	Modify the request URL.
400	ROMA.11011	Failed to write the dictionary information to etcd.	Failed to write the dictionary information to etcd.	Provide your instance ID to technical support for assistance.
400	ROMA.12001	You do not have the permissions required to operate the application.	You do not have the permissions required to operate the application.	Use an account that has the required permissions.
400	ROMA.12002	The user does not support this feature.	The user does not support this feature.	Add operation permissions for this feature.
400	ROMA.13000	Invalid parameters.	Invalid parameters.	Use valid parameters.
400	ROMA.13001	No request body is available.	No request body is available.	Add a request body.
400	ROMA.13002	The route description length exceeds the limit.	The route description length exceeds the limit.	Shorten the route description.
400	ROMA.13003	The route is invalid or conflicts with another route.	The subservice update routes failed.	Configure a correct route.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.13011	The dictionary does not exist.	The dictionary does not exist.	Check whether the accessed dictionary information is correct.
400	ROMA.13012	The dictionary already exists.	The dictionary already exists.	Modify or create a dictionary.
400	ROMA.13013	The parent dictionary is invalid.	The parent dictionary is invalid.	Create a valid parent dictionary.
400	ROMA.13014	The system dictionary cannot be deleted.	The system dictionary cannot be deleted.	Do not delete the system dictionary.
400	ROMA.14001	The application does not exist.	The application does not exist.	Check whether the application information is correct.
400	ROMA.14002	The instance does not exist.	The instance does not exist.	Check whether the instance information is correct.
400	ROMA.14003	The instance is not running.	The instance is not running.	Perform the operation when the instance is running.
400	ROMA.14011	The application already exists.	The application already exists.	Enter the correct application name.
400	ROMA.14012	The application key already exists.	The application key already exists.	Use another key or modify the existing key.
400	ROMA.14014	The application cannot be deleted because it contains resources.	The application cannot be deleted because it contains resources.	View the application details, delete resources under the application, and then delete the application.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.15002	Insufficient instance quota.	Insufficient instance quota.	Delete useless instances or apply for a higher instance quota.
400	ROMA.15011	Failed to query the database.	Failed to query the database.	Provide your instance ID to technical support for assistance.
400	ROMA.15012	Failed to update the database.	Failed to update the database.	Provide your instance ID to technical support for assistance.
400	ROMA.15013	The resource tenant does not exist.	The resource tenant does not exist.	Provide your instance ID to technical support for assistance.
400	ROMA.15014	The LVS VM does not exist.	The LVS VM does not exist.	Provide your instance ID to technical support for assistance.
400	ROMA.15015	The subnet IP address of the LVS does not exist.	The subnet IP address of the LVS does not exist.	Provide your instance ID to technical support for assistance.
400	ROMA.15016	Failed to create the NIC for the subnet.	Failed to create the NIC for the subnet.	Provide your instance ID to technical support for assistance.
400	ROMA.15017	Failed to create the sub-service.	Failed to create the sub-service.	Click the instance name to view the error details of the sub-service, and rectify the fault as instructed. If the error persists, provide the instance ID to technical support for assistance.
400	ROMA.15018	Invalid OBS address.	Invalid OBS address.	Provide your instance ID to technical support for assistance.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.15019	Invalid VPC CIDR.	Invalid VPC CIDR.	Use a VPC with a valid CIDR.
400	ROMA.15023	REST request failed.	REST request failed.	The network is abnormal or the peer service is abnormal.
400	ROMA.4001000	Invalid parameters.	Invalid parameters.	Correct the parameter values.
400	ROMA.4001001	The ROMA Connect instance name already exists.	The ROMA Connect instance name already exists.	Use another ROMA Connect instance name.
400	ROMA.4001010	The ROMA Connect instance name is invalid.	The ROMA Connect instance name is invalid.	Use a valid ROMA Connect instance name.
400	ROMA.4001012	The maintenance time window parameter of the ROMA Connect instance is invalid.	The maintenance time window parameter of the ROMA Connect instance is invalid.	Modify the maintenance time window parameter.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.4001016	Failed to create the LVS.	Failed to create the LVS.	1. Increase the quota, and contact technical support to expand the resources. 2. Check whether the CIDR block of the VPC used to create the instance is --, which means that the CIDR block is not configured. If yes, set the CIDR block of the VPC as the same CIDR block of the subnet.
400	ROMA.4001017	The token has expired.	The token has expired.	Obtain another token.
400	ROMA.4001019	This operation cannot be performed on instances in the current status.	This operation cannot be performed on instances in the current status.	Provide your instance ID to technical support for assistance.
400	ROMA.4001024	The password is too simple.	The password is too simple.	Use another password.
400	ROMA.4001025	The ROMA Connect instance does not exist.	The ROMA Connect instance does not exist.	On the ROMA Connect console, check whether the instance corresponding to the instance ID exists. If no, check the instance ID.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.4001026	The ROMA Connect instance is not running.	The ROMA Connect instance is not running.	Check the instance status on the ROMA Connect console. If the instance is abnormal, contact technical support.
400	ROMA.4001027	The application does not exist.	The application does not exist.	Check whether the application exists.
400	ROMA.4001028	The application already exists.	The application already exists.	Check whether the application already exists.
400	ROMA.4001029	Invalid application name.	Invalid application name.	Use another application name that contains 1 to 256 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
400	ROMA.4001030	The application description is too long.	The application description is too long.	Shorten the application description.
400	ROMA.4001031	Failed to write data into etcd.	Failed to write data into etcd.	Provide your instance ID to technical support for assistance.
400	ROMA.4001033	The application cannot be deleted because it contains resources.	The application cannot be deleted because it contains resources.	View the application details, delete resources under the application, and then delete the application.
400	ROMA.4001034	The application quota is insufficient.	The application quota is insufficient.	The number of applications has reached the maximum allowed limit. Apply for a higher quota.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.4001040	Invalid application key.	Invalid application key.	Check that the application key contains 3 to 200 characters, including digits, letters, and hyphens (-).
400	ROMA.4001041	Invalid application secret.	Invalid application secret.	Check that the application secret contains 8 to 128 characters, including digits and letters.
400	ROMA.4001053	Another order for deleting the instance is in progress.	Another order for deleting the instance is in progress.	Process the ongoing order first.
400	ROMA.4011000	The user token in the request does not match the project ID.	The user token in the request does not match the project ID.	Check whether the token or project ID in the request has been tampered with.
400	ROMA.4030001	You do not have the permissions required for this resource.	You do not have the permissions required for this resource.	Check whether the resource corresponding to the ID belongs to the current user.
400	ROMA.4031001	Insufficient quota.	Insufficient quota.	Provide your account name to technical support for assistance.
400	ROMA.4031005	The trial instance quota is insufficient.	The trial instance quota is insufficient.	Provide your account name to technical support for assistance.
400	ROMA.4031006	A resource with the same name already exists.	A resource with the same name already exists.	Use another resource name.
400	ROMA.4031007	The EIP has already been bound.	The EIP has already been bound.	Use another available EIP.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.4031008	An LVS with the same name already exists.	An LVS with the same name already exists.	Use another LVS name.
400	ROMA.4031009	You do not have the permissions required to create a trial instance.	You do not have the permissions required to create a trial instance.	Contact the service personnel to apply for a trial instance.
400	ROMA.4041000	The resource does not exist.	The resource does not exist.	Check whether the resource exists.
400	ROMA.4041002	The account cannot access enterprise projects.	The account cannot access enterprise projects.	Check whether the account is an enterprise account.
400	ROMA.4041003	You do not have the permissions required to view the IAM user list.	You do not have the permissions required to view the IAM user list.	Grant the Security Administrator role to the user on the IAM console.
400	ROMA.5001000	This is an internal service.	This is an internal service.	Contact technical support for assistance.
400	ROMA.5001003	The product ID does not exist.	The product ID does not exist.	Check whether the service has been removed. If yes, release it again.
400	ROMA.5002000	The AZ does not exist.	The AZ does not exist.	Check the AZ specified in the instance creation request.
400	ROMA.5008000	The database connection is abnormal.	The database connection is abnormal.	Check the database connection address or the database service.
400	ROMA.5008020	Failed to unbind the EIP.	Failed to unbind the EIP.	Try again after 1 minute.

Status Code	Error Codes	Error Message	Description	Solution
400	ROMA.5008021	Failed to bind the EIP.	Failed to bind the EIP.	Try again after 1 minute.

7.4.2 Error Codes of Service Integration APIs

Status Code	Error Codes	Error Message	Description	Solution
400	APIC.7244	Unsupported to update eip bandwidth	Unsupported to update eip bandwidth	Do not perform this operation.
400	APIC.9206	create instance failed	Failed to create the instance.	If resources are insufficient, expand resources. If the network is abnormal, check the network of the corresponding service and restore the network connectivity.
400	APIG.1000	The token is missing.	Failed to identify the user authentication information. Re-log in or try again later.	Access with a token.
400	APIG.1119	No permissions to perform operations on this method.	No permissions to perform operations on this method.	Obtain the corresponding fine-grained permission first.
400	APIG.1120	No permissions to create ELB channels.	No permissions to create ELB channels.	The ELB channel to be operated must be under your own account. If the ELB channel is under another account, you must obtain the authorization first.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.1201	The resources belong to different tenants.	The resources belong to different tenants.	Ensure that the objects to be operated belong to the same tenant.
400	APIG.2000	Parameter error.	Incorrect request parameter {x}.	Modify the request parameter based on the returned cause.
400	APIG.2001	The request parameters must be specified.	Request parameter {x} must be specified.	Modify the request parameter based on the returned cause.
400	APIG.2002	The parameter value is too small.	The value of parameter {x} is too small.	Modify the request parameter based on the returned cause.
400	APIG.2003	The parameter value is too large.	The value of parameter {x} is too large.	Modify the request parameter based on the returned cause.
400	APIG.2004	The parameter value is outside the allowable range.	The value of parameter {x} is outside the allowable range.	Modify the request parameter based on the returned cause.
400	APIG.2005	The parameter is too short.	The parameter is too short.	Modify the request parameter based on the returned cause.
400	APIG.2006	The parameter is too long.	The parameter is too long.	Modify the request parameter based on the returned cause.
400	APIG.2007	Invalid length.	Invalid length.	Modify the request parameter based on the returned cause.
400	APIG.2008	Only letters are allowed.	Only letters are allowed.	Modify the request parameter based on the returned cause.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.2009	Only digits are allowed.	Only digits are allowed.	Modify the request parameter based on the returned cause.
400	APIG.2010	Only letters and digits are allowed.	Only letters and digits are allowed.	Modify the request parameter based on the returned cause.
400	APIG.2011	Invalid parameter value.	The setting of arameter {x} does not match the rule.	Modify the request parameter based on the returned cause.
400	APIG.2012	Invalid parameter value.	The parameter matches an unexpected rule.	Modify the request parameter based on the returned cause.
400	APIG.2013	Only letters, digits, hyphens (-), and underscores (_) are allowed.	Only letters, digits, hyphens (-), and underscores (_) are allowed.	Modify the request parameter based on the returned cause.
400	APIG.2014	Invalid email address.	Invalid email address.	Modify the request parameter based on the returned cause.
400	APIG.2015	Invalid IP address.	Invalid IP address.	Modify the request parameter based on possible causes.
400	APIG.2016	The characters are not encoded using Base 64.	The characters are not encoded using Base 64.	Change the request parameter to a correct Base64-encoded character string.
400	APIG.2017	Invalid mobile number.	Invalid mobile number.	Modify the request parameter based on possible causes.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.2018	Invalid telephone number.	Invalid telephone number.	Modify the request parameter based on possible causes.
400	APIG.2019	Invalid telephone or mobile number.	Invalid telephone or mobile number.	Modify the request parameter based on possible causes.
400	APIG.2020	Invalid postal code.	Invalid postal code.	Modify the request parameter based on possible causes.
400	APIG.2021	The URL domain is not included in the IP address whitelist.	The URL domain is not included in the IP address whitelist: {x}.	Modify the request parameter.
400	APIG.2022	The URL domain is included in the IP address blacklist.	The URL domain is included in the IP address blacklist: {x}.	Modify the request parameter.
400	APIG.2023	URL domain CNAME resolution failed.	URL domain CNAME resolution failed.	Register the CNAME resolution record of the domain name first.
400	APIG.2024	Invalid URL domain.	Invalid URL domain.	Use a correct domain name.
400	APIG.2025	Invalid backend port number.	Invalid backend port number.	Use a correct port number.
400	APIG.2026	The request path parameters do not match the request URI.	The request path parameters do not match the request URI.	Add the parameters contained in the request path to the request parameters.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.2027	The backend path parameters do not match the backend URI.	The backend path parameters do not match the backend URI.	Add the parameters contained in the backend request path to backend parameters.
400	APIG.2028	The backend parameters are not mapped to the request parameters.	The backend parameters are not mapped to the request parameters.	Change the source in the backend parameter to a correct request parameter.
400	APIG.2030	Bad request for debugging the API.	Bad request for debugging the API.	Use correct API debugging parameters.
400	APIG.2034	The domain name has not been filed. File it first.	The domain name has not been filed. File it first.	File the domain name first.
400	APIG.2035	The ICP Filing System is busy. Please try again later.	The ICP Filing System is busy. Please try again later.	Contact technical support engineers for assistance.
400	APIG.2037	Plugin content invalid	Plugin content invalid	Modify the plugin content.
400	APIG.2038	Invalid cron expression	Invalid cron expression	The cron expression is invalid.
400	APIG.2039	Only boolean are allowed	Only boolean are allowed	Use a parameter of the Boolean type.
400	APIG.2041	Invalid microservice.	Invalid microservice.	Change service_id to a valid microservice ID.
400	APIG.2042	Invalid engine.	Invalid engine.	Change engine_id to a valid microservice engine ID.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.2101	The certificate and private key do not match.	The certificate and private key do not match.	Use the matching certificate and private key.
400	APIG.2102	The certificate has expired.	The certificate has expired.	Use a certificate that has not expired.
400	APIG.2103	The certificate common name does not match the domain name.	The certificate common name does not match the domain name.	Ensure that the domain name in the certificate is the same as the user-defined domain name.
400	APIG.2104	The certificate chain is not matched.	The certificate chain is not matched.	Place the server certificate at the beginning and the other certificates in sequence if a certificate chain contains multiple certificates.
400	APIG.2105	Encrypted private keys are not supported.	Encrypted private keys are not supported.	Use an unencrypted private key.
400	APIG.2106	Invalid certificate or private key.	Invalid certificate or private key.	Use a correct certificate and private key.
400	APIG.2108	Microservice unavailable.	Microservice unavailable.	Change service_id to the ID of an available microservice.
400	APIG.3141	The number of API tasks exceeds the maximum allowed limit	The number of API tasks exceeds the maximum allowed limit	Contact technical support engineers to increase the quota.
400	APIG.3145	The number of member groups exceeds the maximum allowed limit	The number of member groups exceeds the maximum allowed limit	Contact technical support engineers to increase the quota.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3147	The number of kafka log plugins exceeds the maximum allowed limit	The number of kafka log plugins exceeds the maximum allowed limit	Contact technical support engineers to increase the quota.
400	APIG.3148	Invalid certificate. Add one that expires before January 19, 2038 03:14:07 UTC.	Invalid certificate. Add one that expires before January 19, 2038 03:14:07 UTC.	Add one that expires before January 19, 2038 03:14:07 UTC.
400	APIG.3201	The API group name already exists.	The API group name already exists.	Use another name.
400	APIG.3202	The API name already exists.	The API name already exists.	Use another name.
400	APIG.3203	The app name already exists.	The app name already exists.	Use another name.
400	APIG.3204	The request throttling policy name already exists.	The request throttling policy name already exists.	Use another name.
400	APIG.3205	The environment name already exists.	The environment name already exists.	Use another name.
400	APIG.3206	The access control policy name already exists.	The access control policy name already exists.	Use another name.
400	APIG.3207	The signature key name already exists.	The signature key name already exists.	Use another name.
400	APIG.3208	The VPC channel name already exists.	The VPC channel name already exists.	Use another name.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3209	The parameter name already exists.	The parameter name already exists.	Use another name.
400	APIG.3210	The backend policy name already exists.	The backend policy name already exists.	Use another name.
400	APIG.3211	The authorizer name already exists.	The authorizer name already exists.	Use another name.
400	APIG.3212	The identity source name already exists.	The identity source name already exists.	Use another name.
400	APIG.3213	The API tag name already exists.	The API tag name already exists.	Use another name.
400	APIG.3215	The backend API name already exists.	The backend API name already exists.	Use another name.
400	APIG.3216	The response name already exists.	The response name already exists.	Use another name.
400	APIG.3301	The API already exists.	The API already exists.	Modify the API method and URL to avoid conflicts with other APIs.
400	APIG.3303	The environment variable already exists.	The environment variable already exists.	Use another name.
400	APIG.3305	The URL domain name already exists.	The URL domain name already exists.	Check whether the domain name has already been used, or use another domain name.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3306	The IP address already exists.	The IP address already exists.	Check the IP addresses in the blacklist or whitelist, and delete duplicate ones.
400	APIG.3309	The operation has already been performed.	The operation has already been performed.	Reduce concurrent operations or try again later.
400	APIG.3310	The AppKey already exist.	The AppKey already exist.	Use another AppKey.
400	APIG.3311	The AppCode already exists.	The AppCode already exists.	Use another AppCode.
400	APIG.3314	The backend API already exists.	The backend API already exists.	Modify the method and URL of the custom backend API to avoid conflicts with other APIs.
400	APIG.3315	The returned object name already exists.	The returned object name already exists.	Use another name.
400	APIG.3316	The API authorization relationship already exists.	The API authorization relationship already exists.	Use other APIs or apps for authorization.
400	APIG.3317	The sign binding relationship already exists	The sign binding relationship already exists	Check whether the signature key used by the custom backend is the same as that bound to the frontend API.
400	APIG.3318	The plugin name already exists	The plugin name already exists	Use another name.
400	APIG.3319	The API task name already exists	The API task name already exists	Use another name.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3325	The APP quota name already exists.	The APP quota name already exists.	Use another name.
400	APIG.3326	The vpc channel member already exists	The vpc channel member already exists	Use another backend server.
400	APIG.3328	The vpc channel member group already exists	The vpc channel member group already exists	Use another name.
400	APIG.3330	VPC already bound to a microservice.	VPC already bound to a microservice.	Change vpc_channel_id to another ID not bound to any microservice.
400	APIG.3459	The api group version not match.	The api group version not match.	Modify the version to match the group type.
400	APIG.3469	All the members must bound to member group or not	All the members must bound to member group or not	Bind all servers of the load balance channel to the server group or unbind all the servers from the server group.
400	APIG.3471	No permissions to perform operations on this type of VPC channel.	No permissions to perform operations on this type of VPC channel.	Do not perform this operation.
400	APIG.3472	The instance has been used by another VPC.	The instance has been used by another VPC.	Release the relationship with another VPC
400	APIG.3473	The load balancer has already been bound to another endpoint service.	The load balancer has already been bound to another endpoint service.	Do not perform this operation.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3474	The API group ID in the URL does not match the API group to which the URL domain has been bound.	The API group ID in the URL does not match the API group to which the URL domain has been bound.	Change the group in the URL to the group bound to the domain name.
400	APIG.3475	The API group ID in the URL does not match the API group to which the certificate has been bound.	The API group ID in the URL does not match the API group to which the certificate has been bound.	Change the group in the URL to the group bound to the certificate.
400	APIG.3476	The domain ID in the URL does not match the domain to which the certificate has been bound.	The domain ID in the URL does not match the domain to which the certificate has been bound.	Change the domain name in the URL to the domain name bound to the certificate.
400	APIG.3477	The authorizer type and API do not match.	The authorizer type and API do not match.	Use the correct custom authorizer type.
400	APIG.3479	No permissions to perform operations on this ROMA integration application.	No permissions to perform operations on this ROMA integration application.	Modify the resources to belong to the same application.
400	APIG.3489	The data source type is not supported.	The data source type is not supported.	Use the correct data source type.
400	APIG.3494	The backend of API is livedata and cannot change.	The backend of API is livedata and cannot change.	Cancel the custom backend deployment, and try again after modification.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3499	The API task logs cannot be queried when the API task status is init	The API task logs cannot be queried when the API task status is init	Please start the API task first then query the API task logs.
400	APIG.3600	Json or Yaml format error.	Json or Yaml format error.	Check whether the file to be imported is a YAML or JSON file and whether the file format is correct. Note: This error is also reported when an Excel file is imported.
400	APIG.3601	The Swagger file version must be 2.0.	The Swagger file version must be 2.0.	Use a Swagger file of the 2.0 version.
400	APIG.3602	Syntax error in the Swagger file.	Syntax error in the Swagger file.	Check the error in the Swagger file.
400	APIG.3603	The Swagger file content is too long.	The Swagger file content is too long.	Reduce the Swagger file size.
400	APIG.3604	Syntax error in the imported assets file.	Syntax error in the imported assets file.	Check the asset file format.
400	APIG.3605	The number of assets exceeds the maximum allowed limit.	The number of assets exceeds the maximum allowed limit.	Reduce the number of assets.
400	APIG.3606	Asset version transfer failed.	Asset version transfer failed.	Change the mapping between asset versions and asset formats.

Status Code	Error Codes	Error Message	Description	Solution
400	APIG.3607	Valid external dependencies for assets fail.	Valid external dependencies for assets fail.	Try again or contact technical support engineers to check whether the data plane synchronization is abnormal.
400	APIG.3610	When the backend uses the load balance channel, the number of retry count cannot exceed the number of available backend servers in the load balance channel	When the backend uses the load balance channel, the number of retry count must be less than the number of available backend servers in the load balance channel	Change the number of retry times to a value less than the number of available backend servers of the load balance channel.
401	APIC.7100	Token missing.	Token missing.	Access with a token.
401	APIC.7101	Token expired.	Token expired.	Obtain a token again for access.
401	APIC.7102	Incorrect token or token resolution failure.	Incorrect token or token resolution failure.	Contact technical support engineers to check whether the token encryption/decryption setting is abnormal.
401	APIC.7103	Token contains no project information.	Token contains no project information.	Use the project information to obtain the token.
401	APIC.7104	Token contains no domain information.	Token contains no project information.	Use the tenant project information to obtain the token.
401	APIC.7105	Token contains no user information.	Token contains no user information.	Use the user information to obtain the token.

Status Code	Error Codes	Error Message	Description	Solution
401	APIC.7107	Token contains no role information.	Token contains no role information.	Use the role information to obtain the token.
401	APIG.1001	The token has expired.	The token has expired.	Obtain a token again for access.
401	APIG.1002	Incorrect token or token resolution failed.	Incorrect token or token resolution failed.	Use a correct token to access the system.
401	APIG.1003	The token does not contain project information.	The token does not contain project information.	Access using a token containing project information.
401	APIG.1005	No permissions to request this method.	No permissions to request this method.	Access using a token that contains the required permissions.
401	APIG.1009	The token does not contain user information.	The token does not contain user information.	Access using a token containing user information.
401	APIG.1010	PDP server connection failed.	PDP server connection failed.	Contact technical support engineers to view the management plane logs and check whether connection of the IAM fine-grained authentication server is abnormal.

Status Code	Error Codes	Error Message	Description	Solution
401	APIG.1144	No permissions to perform operations on this API task	No permissions to perform operations on this API task	The scheduled task to be operated must be under your own account. If the task is under another account, you must obtain the authorization first.
401	APIG.1300	No permissions to perform operations on this project	No permissions to perform operations on this project	Use a token for the correct project.
401	APIG.3497	The ROMA APP to which the API task belongs cannot be changed	The ROMA APP to which the API task belongs cannot be changed	Do not perform this operation.
401	APIG.3498	The API task cannot be operated when the API task status is started	The API task cannot be operated when the API task status is started	Stop the scheduled task and try again.
401	APIG.3700	The API task status is started and does not need to be started again	The API task status is started and does not need to be started again	Stop the scheduled task and try again.
401	APIG.3701	The API task status is init or stopped and does not need to be stopped again	The API task status is init or stopped and does not need to be stopped again	Start the scheduled task and try again.
403	APIC.7106	No permissions to request for the method.	No permissions to request for the method.	Access using a token that contains the required permissions.

Status Code	Error Codes	Error Message	Description	Solution
403	APIC.7109	Account restricted. No permissions to request the POST method.	Account restricted. No permissions to request the POST method.	Cancel restrictions on the account first.
403	APIC.7110	Readonly account. No permissions to request any method except GET.	Readonly account. No permissions to request any method except GET.	Contact the account administrator to configure other permissions.
403	APIC.7111	Token not belong to the project in URI.	Token not belong to the project in URI.	Use a correct token to access the system.
403	APIC.7130	No permissions for operating the instance	No permissions for operating the instance	Use the correct project ID.
403	APIG.1020	Insufficient permissions.	Insufficient permissions.	Grant the read and write permissions to the user.
403	APIG.1101	No permissions to perform operations on this API group.	No permissions to perform operations on this API group.	The API group to be operated must be under your own account. If the API group is under another account, you must obtain the authorization first.
403	APIG.1102	No permissions to perform operations on this API.	No permissions to perform operations on this API.	The API to be operated must be under your own account. If the API is under another account, you must obtain the authorization first.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.1103	No permissions to perform operations on this environment.	No permissions to perform operations on this environment.	The environment to be operated must be under your own account. If the environment is under another account, you must obtain the authorization first.
403	APIG.1104	No permissions to perform operations on this app.	No permissions to perform operations on this app.	The application to be operated must be under your own account. If the application is under another account, you must obtain the authorization first.
403	APIG.1105	No permissions to perform operations on this request throttling policy.	No permissions to perform operations on this request throttling policy.	The request throttling policy to be operated must be under your own account. If the request throttling policy is under another account, you must obtain the authorization first.
403	APIG.1106	No permissions to perform operations on this access control policy.	No permissions to perform operations on this access control policy.	The access control policy to be operated must be under your own account. If the access control policy is under another account, you must obtain the authorization first.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.1109	No permissions to perform operations on this app authorization record.	No permissions to perform operations on this app authorization record.	The app authorization to be operated must be under your own account. If the app authorization is under another account, you must obtain the authorization first.
403	APIG.1110	No permissions to perform operations on this environment variable.	No permissions to perform operations on this environment variable.	The environment variable to be operated must be under your own account. If the environment variable is under another account, you must obtain the authorization first.
403	APIG.1112	No permissions to perform operations on this signature key.	No permissions to perform operations on this signature key.	The signature key to be operated must be under your own account. If the signature key is under another account, you must obtain the authorization first.
403	APIG.1113	No permissions to perform operations on this VPC channel.	No permissions to perform operations on this VPC channel.	The VPC channel to be operated must be under your own account. If the VPC channel is under another account, you must obtain the authorization first.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.1115	No permissions to perform operations on this certificate.	No permissions to perform operations on this certificate.	The certificate to be operated must be under your own account. If the certificate is under another account, you must obtain the authorization first.
403	APIG.1136	No permissions to perform operations on this instance.	No permissions to perform operations on this instance.	Check whether you are using the ID of the project to which the instance belongs.
403	APIG.1137	No permissions to perform operations on this authorizer	No permissions to perform operations on this authorizer	The custom authorizer to be operated must be under your own account. If the custom authorizer is under another account, you must obtain the authorization first.
403	APIG.1138	No permissions to perform operations on this data source.	No permissions to perform operations on this data source.	The data source to be operated must be under your own account. If the data source is under another account, you must obtain the authorization first.
403	APIG.1139	No permissions to perform operations on this livedata API	No permissions to perform operations on this livedata API.	The backend API to be operated must be under your own account. If the backend API is under another account, you must obtain the authorization first.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.1140	No permissions to perform operations on this feature	No permissions to perform operations on this feature.	The feature to be operated must be under your own account. If the feature is under another account, you must obtain the authorization first.
403	APIG.1141	No permissions to perform operations on this ROMA integration application.	No permissions to perform operations on this ROMA integration application.	Use the primary account or the sub-user who creates the ROMA integration application to grant corresponding permissions to the sub-user who needs to access the integration application.
403	APIG.1142	No permissions to perform operations on this client quota	No permissions to perform operations on this client quota	Use the administrator account to perform operations on the client quota.
403	APIG.1143	No permissions to perform operations on this plugin	No permissions to perform operations on this plugin	The plugin to be operated must be under your own account. If the plugin is under another account, you must obtain the authorization first.
403	APIG.3066	The roma auth tunnel does not exist.	The roma auth tunnel does not exist.	Check whether the green channel authorization type is correct.
403	APIG.3100	The number of resources exceeds the maximum allowed limit.	The number of resources exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.3101	The number of API groups exceeds the maximum allowed limit.	The number of API groups exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3102	The number of APIs exceeds the maximum allowed limit.	The number of APIs exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3103	The number of apps exceeds the maximum allowed limit.	The number of apps exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3104	The number of environments exceeds the maximum allowed limit.	The number of environments exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3105	The number of signature keys exceeds the maximum allowed limit.	The number of signature keys exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3106	The number of variables exceeds the maximum allowed limit.	The number of variables exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3107	The number of request throttling policies exceeds the maximum allowed limit.	The number of request throttling policies exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3108	The number of domain names exceeds the maximum allowed limit.	The number of domain names exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.3109	The number of VPC channels exceeds the maximum allowed limit.	The number of VPC channels exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3110	The number of instances exceeds the maximum allowed limit.	The number of instances exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3111	The number of parameters in req_params exceeds the maximum allowed limit.	The number of parameters in req_params exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3112	The number of access control policies exceeds the maximum allowed limit.	The number of access control policies exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3113	The maximum number of API backend policies has been reached.	The maximum number of API backend policies has been reached.	Contact technical support engineers to increase the quota.
403	APIG.3114	The maximum number of policy conditions has been reached.	The maximum number of policy conditions has been reached.	Contact technical support engineers to increase the quota.
403	APIG.3116	The number of custom authorizers exceeds the maximum allowed limit.	The number of custom authorizers exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.3117	The number of identity sources exceeds the maximum allowed limit.	The number of identity sources exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3125	The maximum number of APIs for one API group has been reached.	The maximum number of APIs for one API group has been reached.	Contact technical support engineers to increase the quota.
403	APIG.3127	The number of APIs has reached the upper limit. A maximum of xxx APIs can be imported at a time.	The number of APIs has reached the upper limit. A maximum of xxx APIs can be imported at a time.	Reduce the number of APIs to be imported.
403	APIG.3131	The number of AppCodes exceeds the maximum allowed limit.	The number of AppCodes exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3133	The number of API tags exceeds the maximum allowed limit.	The number of API tags exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3134	The number of livedata APIs exceeds the maximum allowed limit.	The number of livedata APIs exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3135	The number of API scripts exceeds the maximum allowed limit.	The number of API scripts exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3136	The number of responses exceeds the maximum allowed limit.	The number of responses exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.

Status Code	Error Codes	Error Message	Description	Solution
403	APIG.3138	The number of Configurations for one APP exceeds the maximum allowed limit.	The number of Configurations for one APP exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3139	The number of APP quotas exceeds the maximum allowed limit.	The number of APP quotas exceeds the maximum allowed limit.	Contact technical support engineers to increase the quota.
403	APIG.3140	The number of plugins exceeds the maximum allowed limit	The number of plugins exceeds the maximum allowed limit	Contact technical support engineers to increase the quota.
403	APIG.3483	The API is deployed and cannot be deleted.	The API is deployed and cannot be deleted.	Cancel the deployment and try again.
403	APIG.3484	The API status does not support deployment.	The API status does not support deployment.	Develop the API and then deploy it.
403	APIG.3486	The API status does not support undeployment.	The API status does not support undeployment.	Complete API deployment and try again.
404	APIC.7302	Instance not found	Instance not found	Check whether the instance exists and use the correct instance ID.
404	APIG.3001	The API group does not exist.	The API group does not exist.	Check whether the group exists.
404	APIG.3002	The API does not exist.	The API does not exist.	Check whether the API exists.

Status Code	Error Codes	Error Message	Description	Solution
404	APIG.3003	The environment does not exist.	The environment does not exist.	Check whether the environment exists.
404	APIG.3004	The app does not exist.	The app does not exist.	Check whether the application exists.
404	APIG.3005	The request throttling policy does not exist.	The request throttling policy does not exist.	Check whether the request throttling policy exists.
404	APIG.3006	The access control policy does not exist.	The access control policy does not exist.	Check whether the access control policy exists.
404	APIG.3007	The configuration does not exist.	The configuration does not exist.	Check whether the configuration exists.
404	APIG.3008	The excluded configuration does not exist.	The excluded configuration does not exist.	Check whether excluded configuration exists.
404	APIG.3009	The app authorization record does not exist.	The app authorization record does not exist.	Check whether the app authorization exists.
404	APIG.3010	The access control policy binding record does not exist.	The access control policy binding record does not exist.	Check whether the access control policy binding record exists.
404	APIG.3011	The environment variable does not exist.	The environment variable does not exist.	Check whether the environment variable exists.
404	APIG.3012	The request throttling policy binding record does not exist.	The request throttling policy binding record does not exist.	Check whether the request throttling policy binding record exists.

Status Code	Error Codes	Error Message	Description	Solution
404	APIG.3013	The excluded request throttling configuration does not exist.	The excluded request throttling configuration does not exist.	Check whether the special configuration of the request throttling policy exists.
404	APIG.3015	The API publication record does not exist.	The API publication record does not exist.	Check whether the API release record exists.
404	APIG.3017	The signature key does not exist.	The signature key does not exist.	Check whether the signature key exists.
404	APIG.3018	The signature key binding record does not exist.	The signature key binding record does not exist.	Check whether the signature key binding record exists.
404	APIG.3019	The function URN does not exist.	The function URN does not exist.	Check whether the function URN exists.
404	APIG.3020	The URL domain does not exist.	The URL domain does not exist.	Check whether the group domain name exists.
404	APIG.3021	The SSL certificate does not exist.	The SSL certificate does not exist.	Check whether the SSL certificate exists.
404	APIG.3022	The API version does not exist.	The API version does not exist.	Check whether the API version exists.
404	APIG.3023	The VPC channel does not exist.	The VPC channel does not exist.	Check whether the load balance channel exists.
404	APIG.3024	The instance does not exist.	The instance does not exist.	Check whether the instance exists in the load balance channel.
404	APIG.3025	The certificate does not exist.	The certificate does not exist.	Check whether the certificate exists.

Status Code	Error Codes	Error Message	Description	Solution
404	APIG.3030	The instance does not exist	The instance does not exist	Check whether the instance exists.
404	APIG.3064	Roma app and api relation not found.	Roma app and api relation not found.	Contact technical support engineers for assistance.
404	APIG.3065	Roma app authorize relation not found.	Roma app authorize relation not found.	Contact technical support engineers for assistance.
404	APIG.3067	The app quota does not exist.	The app quota does not exist.	Check whether the client quota exists.
404	APIG.3068	The plugin does not exist.	The plugin does not exist	Check whether the plugin exists.
404	APIG.3069	The plugin binding record does not exist	The plugin binding record does not exist	Check whether the plugin binding record exists.
404	APIG.3071	The member group does not exist	The member group does not exist	Check whether the server group of the load balance channel exists.
404	APIG.3081	Authorizer not found	Authorizer not found	Check whether the custom authorizer exists.
404	APIG.3082	The AppCode does not exist.	The AppCode does not exist.	Check whether the AppCode exists.
404	APIG.3083	The data source does not exist.	The data source does not exist.	Check whether the data source exists.
404	APIG.3084	The livedata API does not exist	The livedata API does not exist	Check whether the custom backend API exists.
404	APIG.3087	The feature configuration does not exist	The feature configuration does not exist	Check whether the feature exists.

Status Code	Error Codes	Error Message	Description	Solution
404	APIG.3088	Deployment information of the backend API does not exist.	Deployment information of the backend API does not exist.	Check whether the API deployment record exists.
404	APIG.3089	The response does not exist	The response does not exist	Check whether the gateway response exists.
404	APIG.3091	The APP configuration does not exist	The APP configuration does not exist	Check whether the application configuration exists.
404	APIG.3092	The ECS does not exist	The ECS does not exist	Check whether the ECS is deleted or the entered ID is incorrect.
404	APIG.3093	The API task does not exist	The API task does not exist	Check whether the scheduled task exists.
404	APIG.9996	The request URL does not exist	The request URL does not exist	Contact technical support engineers to view the management plane logs.
409	APIC.7709	The egress eip has been opened	The egress eip has been opened	Close the egress eip, and try again
409	APIG.3411	The APIs belong to different tenants.	The APIs belong to different tenants.	Authorizing access to APIs of another tenant is not allowed. Select other APIs.
409	APIG.3414	The VPC channel is already being used by another API.	The VPC channel is already being used by another API.	Before deleting the load balance channel, delete the API bound to the load balance channel.

Status Code	Error Codes	Error Message	Description	Solution
409	APIG.3415	The API group cannot be deleted because it contains APIs.	The API group cannot be deleted because it contains APIs.	Delete APIs from the group and then delete the group.
409	APIG.3416	The API cannot be deleted because it has been published.	The API cannot be deleted because it has been published.	Take the API offline and then delete the API.
409	APIG.3418	The environment contains published APIs.	The environment contains published APIs.	Take APIs offline in this environment, and then try again.
409	APIG.3457	Cannot operate configuration of current app.	The configuration name already exists.	Change the configuration name.
409	APIG.3460	The Id api cannot be offlined for binding to an authorizer	The Id api cannot be offlined for binding to an authorizer	Delete the custom authorizer bound to the custom backend and then cancel deployment of the backend.
409	APIG.3463	An API with the same path of the current API has already attached with another cors plugin	An API with the same path of the current API has already attached with another cors plugin	Unbind the plugin bound to the API
409	APIG.3464	The allow methods of the cors plugin do not contain api method	The allow methods of the cors plugin do not contain api method	Add the API method to the allow methods of the CORS plugin

Status Code	Error Codes	Error Message	Description	Solution
409	APIG.3465	The allow methods of the cors plugin do not contain the method of attached API	The allow methods of the cors plugin do not contain the method of attached API	Do not perform this operation.
409	APIG.3466	An OPTIONS API with the same path of the current API already exists	An OPTIONS API with the same path of the current API already exists	Delete the OPTIONS API with the same path of the current API.
409	APIG.3467	An API with the same path of the current API has already attached with a cors plugin	An API with the same path of the current API has already attached with a cors plugin	No need to publish this OPTIONS API.
409	APIG.3470	The API cannot be operated because it has been used by another API task	The API cannot be operated because it has been used by another API task	Delete the scheduled task bound to the API, and then try again.
409	APIG.3478	The authorizer has been used by certain APIs.	The authorizer has been used by certain APIs.	Unbind all APIs from the custom authorizer and then delete it.
409	APIG.3482	The default API group cannot be deleted.	The default API group cannot be deleted.	Do not perform this operation.
409	APIG.3490	The API deployment group ID cannot be changed.	The API deployment group ID cannot be changed.	Cancel the deployment before modifying the group ID.
409	APIG.3491	The default response cannot be deleted.	The default response cannot be deleted.	Do not perform this operation.

Status Code	Error Codes	Error Message	Description	Solution
409	APIG.3492	The default response name cannot be modified.	The default response name cannot be modified.	Do not perform this operation.
409	APIG.3703	Roma app id of the plugin must be the same with roma app id of the api	Roma app id of the plugin must be the same with roma app id of the api	Modify the plugin to use the same application as the API.
412	APIG.3447	The access control policy has been bound to APIs	The access control policy has been bound to APIs	Before deleting the access control policy, delete the binding relationship of access control policy and API.
412	APIG.3451	The request throttling policy has been bound to APIs.	The request throttling policy has been bound to APIs.	Before deleting the request throttling policy, delete the binding relationship of request throttling policy and API.
412	APIG.3456	Cannot operate configuration of current app.	Cannot operate configuration of current app.	Use an integration application.
412	APIG.3458	The feature is not supported by current instance.	The feature is not supported by current instance.	Contact technical support engineers to upgrade the instance.
412	APIG.3468	The member group cannot be deleted because it contains members	The member group cannot be deleted because it contains members	Delete the servers in the server group of the load balance channel, and then try again.
412	APIG.3480	The signature key has been bound to APIs.	The signature key has been bound to APIs.	Unbind all APIs from the signature key and then delete it.

Status Code	Error Codes	Error Message	Description	Solution
412	APIG.3481	The app has been bound to APIs.	The app has been bound to APIs.	Unbind the app from all APIs, and then try again.
412	APIG.3488	The signature has already binded to backend APIs.	The signature has already binded to backend APIs.	Unbind the signature key from all custom backends, and then try again.
428	APIG.3462	The plugin has already been attached to APIs	The plugin has already been attached to APIs	Do not perform this operation.
429	APIG.9008	Too many requests.	Too many requests.	Try again later.
500	APIC.9999	Internal server error.	Internal server error.	Contact technical support engineers to view the management plane logs and locate the error.
500	APIG.3500	Failed to synchronize data to etcd.	Failed to synchronize data to etcd.	Contact technical support engineers to view the management plane logs and check whether the network between the management plane and the data plane etcd is normal.
500	APIG.3501	Failed to synchronize data to the instance.	Failed to synchronize data to the instance.	Contact technical support engineers to view the management plane logs and check whether the network between the management plane and the data plane LDA is normal.

Status Code	Error Codes	Error Message	Description	Solution
500	APIG.3503	API testing failed.	API testing failed.	Contact technical support engineers to view the management plane logs and check whether the network between the management plane and the data plane LDA is normal.
500	APIG.9002	Invalid function URN.	Invalid function URN.	Use a correct function URN.
500	APIG.9003	Statistics Center request failed.	Statistics Center request failed.	Contact technical support engineers to view the management plane logs and check whether the Statistics Center network is abnormal.
500	APIG.9004	IAM request failed.	IAM request failed.	Contact technical support engineers to view the management plane logs and check whether the IAM network is abnormal.
500	APIG.9005	VPC request failed.	VPC request failed.	Contact technical support engineers to view the management plane logs and check whether the VPC network is abnormal.
500	APIG.9006	DNS request failed.	DNS request failed.	Contact technical support engineers to view the management plane logs and check whether the DNS network is abnormal.

Status Code	Error Codes	Error Message	Description	Solution
500	APIG.9009	ROMA Quartz request failed.	ROMA Quartz request failed.	Contact technical support engineers to view the management plane logs and check whether connection of the ROMA Quartz server is abnormal.
500	APIG.9013	Synchronize CCMS data failed	Synchronize CCMS data failed	Contact technical support.
500	APIG.9999	System error.	System error.	Contact technical support engineers to view the management plane logs and check whether the database connection is abnormal.

7.4.3 Error Codes of Message Integration APIs

Status Code	Error Codes	Error Message	Description	Solution
400	MQS.00400002	Invalid project ID format.	Invalid project ID format.	Check the project ID format.
400	MQS.00400004	Empty request body.	Empty request body.	Check the request body.
400	MQS.00400005	The message body contains invalid characters or is not in JSON format.	The message body is not in JSON format or contains invalid characters.	Check the message body format.
400	MQS.00400008	The selected engine version is not supported.	Unsupported version.	Check the version.

Status Code	Error Codes	Error Message	Description	Solution
400	MQS.00400009	Invalid product ID in the request.	Invalid product ID in the request.	Check the product ID.
400	MQS.00400010	Invalid instance name. The name must be 4 to 64 characters long. Only letters, digits, underscores (_), and hyphens (-) are allowed.	Invalid instance name. The name must be 4 to 64 characters long. Only letters, digits, underscores (_), and hyphens (-) are allowed.	Check the instance name.
400	MQS.00400011	The instance description can contain a maximum of 1024 characters.	Enter a maximum of 1024 characters.	Check the instance description.
400	MQS.00400012	Invalid password format.	The password does not meet the complexity requirements.	Check whether the password meets the requirements.
400	MQS.00400014	Invalid security_group_id in the request.	Invalid security group ID.	Check the security group ID.
400	MQS.00400026	This operation is not allowed when the MQS instance is in the current state.	This operation is not allowed due to the instance status.	Check the instance status.
400	MQS.00400037	The instanceParams parameter in the request contains invalid characters or is not in JSON format.	The instanceParams parameter in the request contains invalid characters or is not in JSON format.	Check the instanceParams parameter in the request.

Status Code	Error Codes	Error Message	Description	Solution
400	MQS.00400038	The periodNum parameter in the request must be an integer.	The periodNum parameter in the request must be an integer.	Check the periodNum parameter in the request.
400	MQS.00400042	The AZ does not exist.	This AZ does not exist.	Check the AZ.
400	MQS.00400060	This instance name already exists.	The instance name already exists.	Check the instance name.
400	MQS.00400061	Invalid instance ID format.	Invalid instance ID format.	Check the instance ID.
400	MQS.00400062	Invalid request parameter.	Invalid request parameter.	Check the instanceParams parameter in the request.
400	MQS.00400064	The action parameter in the request must be delete or restart.	The action parameter in the request must be delete or restart.	Check the action parameter in the request.
400	MQS.00400065	The instances parameter in the request is invalid.	The instances parameter in the request is invalid.	Check the instances parameter in the request.
400	MQS.00400085	The message body contains invalid characters or is not in JSON format, The error key is <key>.	The message body is not in JSON format or contains invalid characters.	Check the error field.
400	MQS.00400099	MQS instances in the Creating, Starting or Restarting state cannot be deleted.	Instances in the Creating, Starting, Stopping, or Restarting state cannot be deleted.	Check the instance status.

Status Code	Error Codes	Error Message	Description	Solution
400	MQS.00400100	The number of instance IDs in an instances array cannot exceed 50.	The number of instance IDs in an instances array cannot exceed 50.	Check the number of instances.
400	MQS.00400101	Invalid topic name.	Invalid topic name.	Check the topic name.
400	MQS.00400102	Invalid partition.	Invalid partition.	Check the number of partitions of the topic.
400	MQS.00400103	Invalid replication.	Invalid replication.	Check the number of replicas of the topic.
400	MQS.00400105	Invalid retention time.	Incorrect aging time.	Check the aging time of the topic.
400	MQS.00400106	Invalid maintenance time.	Invalid maintenance time window parameter.	Check the maintenance time window parameter.
400	MQS.00400800	Invalid <key> in the request.	The key parameter in the request is incorrect.	Check the instance.
400	MQS.00400861	The number of replicas in the topic to be created is greater than the number of available brokers.	The number of replicas in the topic to be created is greater than the number of available brokers.	Check the number of replicas in the topic.
400	MQS.00500963	Failed to delete assets.	Failed to delete assets.	Contact technical support to upgrade the MQS instance version.
400	MQS.4006	Name is invalid.	Incorrect username.	Check the username.
401	MQS.00401001	Invalid token.	Invalid token.	Obtain another token.

Status Code	Error Codes	Error Message	Description	Solution
403	MQS.00403002	This tenant has read permission only and cannot perform this operation.	This tenant has read-only permissions and cannot perform the specified operation on MQS.	Check the tenant permission.
403	MQS.00403003	This role does not have the permission to perform this operation.	This role does not have the permissions to perform this operation.	Check the role permission.
403	MQS.4007	Password is invalid.	Incorrect password.	Check the password.
404	MQS.00404001	The requested URL does not exist.	The requested URL does not exist.	Check the URL.
404	MQS.00404022	This instance does not exist.	The instance does not exist.	Check whether the instance exists.
405	MQS.00405001	This request method is not allowed.	You are not allowed to use the method specified in the request.	Check the request method.
500	MQS.00500000	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500006	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500017	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500020	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500024	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500025	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500031	Internal service error.	Internal server error.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
500	MQS.00500041	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500044	Internal service error.	Internal server error.	Contact technical support.
500	MQS.00500053	Internal service error.	The specified instance node is not found.	Contact technical support.
500	MQS.00500054	Internal service error.	Failed to generate the password.	Contact technical support.
500	MQS.00500070	Internal service error.	Failed to configure the instance.	Contact technical support.
500	MQS.00500802	Internal service error.	Internal server error.	Contact technical support.

7.4.4 Error Codes of Device Integration APIs

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0001	The input parameter is null.	The input parameter is null.	Check whether the input parameter is null.
400	RML.0002	The input parameter is invalid.	The input parameter is invalid.	Check whether the input parameter is valid.
400	RML.0003	The input parameter is not in JSON format or the format is invalid.	The input parameter is not in JSON format or the format is invalid.	Check whether the input parameter is in JSON format or the format is valid.
400	RML.0004	The project ID is null or invalid.	The project ID is null or invalid.	Check whether the product ID is null or valid.
400	RML.0005	The request body is null.	The request body is null.	Check whether the request body is null.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0006	The request parameter is not in JSON format.	The request parameter is not in JSON format.	Check whether the request parameter is in JSON format.
400	RML.0007	The query parameter is invalid.	The query parameter is invalid.	Check whether the query parameter is valid.
400	RML.0008	No operation permission.	No operation permission.	You need to replace the user or role that has the permission to perform this operation.
400	RML.0009	No CSV found.	No CSV found.	Choose CSV file to import.
400	RML.0010	Failed to write data into the CSV file.	Failed to write data into the CSV file.	Check whether CSV file exists.
400	RML.0011	Failed to export data.	Failed to export data.	Check whether data exists.
400	RML.0012	Failed to download ssl certificate.	Failed to download ssl certificate.	Check whether the internet connection is normal.
400	RML.0013	The input parameter oid is null.	The input parameter oid is null.	Input the parameter oid which is not null.
400	RML.0014	The Topic field in the CSV file is incorrect. Check product serial number and device name in Topic.	The Topic field in the CSV file is incorrect. Check product serial number and device name in Topic.	Change the topic field and try again.
400	RML.0015	Incorrect file extension.	Incorrect file extension.	Change the file extension and try again.
400	RML.0100	Invalid instance ID.	Invalid instance ID.	Change the instance ID.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0101	The instance is not running.	The instance is not running.	Keep the instance running and try again.
400	RML.0102	The instance does not exist.	The instance does not exist.	Create the instance and try again.
400	RML.0103	The instance ID is null.	The instance ID is null.	Add the instance ID.
400	RML.0104	Invalid instance parameter.	Invalid instance parameter.	Check whether the instance parameter is valid.
400	RML.0105	Failed to reset the instance password.	Failed to reset the instance password.	Check whether the instance exists.
400	RML.0106	Invalid instance number.	Invalid instance number.	Check whether the instance number is correct.
400	RML.0200	The device ID is null or invalid.	The device ID is null or invalid.	Check whether the device ID is null or invalid.
400	RML.0201	The device name is null or invalid.	The device name is null or invalid.	Check whether the device name is null or invalid.
400	RML.0202	The device name already exists.	The device name already exists.	Change the device name and try again.
400	RML.0203	The device does not exist.	The device does not exist.	Create the device and try again.
400	RML.0204	The device status is null or invalid.	The device status is null or invalid.	Check whether the device status is null or invalid.
400	RML.0205	The device description is longer than 200 characters.	The device description is longer than 200 characters.	Change the length of the device description.
400	RML.0206	The client ID of the device is null or invalid.	The client ID of the device is null or invalid.	Check whether the client ID is null or invalid.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0207	Duplicated device names exist during device adding in batches.	Duplicated device names exist during device adding in batches.	Change the duplicated device names.
400	RML.0208	The device quota is not enough.	The device quota is not enough.	Contact the administrator to increase the device quota.
400	RML.0209	The number of devices to be imported to the CSV file is over 1000.	The number of devices to be imported to the CSV file is over 1000.	Change the number of devices to be imported to the CSV file.
400	RML.0210	The number of batch added devices exceeds 100.	The number of batch added devices exceeds 100.	Change the number of batch added devices.
400	RML.0212	The topic name is null or invalid.	The topic name is null or invalid.	Check whether the topic name is null or invalid.
400	RML.0213	The topic already exists.	The topic already exists.	Change the topic and try again.
400	RML.0214	The topic does not exist.	The topic does not exist.	Create the topic and try again.
400	RML.0215	The permission name of the device topic is incorrect.	The permission name of the device topic is incorrect.	Change the permission name of the device topic.
400	RML.0216	The device topic description cannot exceed 200 characters.	The device topic description cannot exceed 200 characters.	Change the length of the device topic description.
400	RML.0217	The topic name already exists.	The topic name already exists.	Change the topic name.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0218	The topic quota is not enough.	The topic quota is not enough.	Contact the administrator to increase the topic quota.
400	RML.0219	Incorrect title format for the device CSV file.	Incorrect title format for the device CSV file.	Change the title format for the device CSV file.
400	RML.0220	The number of devices to be exported exceeds 1000.	The number of devices to be exported exceeds 1000.	Change the number of devices to be exported.
400	RML.0221	Choose at least one device when exporting data.	Choose at least one device when exporting data.	Choose one or more device data to export.
400	RML.0222	The device parameter is null.	The device parameter is null.	Check whether the device parameter is null.
400	RML.0223	Duplicate client IDs exist during device adding in batches.	Duplicate client IDs exist during device adding in batches.	Change the duplicated client IDs.
400	RML.0224	The device client ID already exists in the local database.	The device client ID already exists in the local database.	Change the device client ID.
400	RML.0225	Failed to reset the device password.	Failed to reset the device password.	Check whether the device exists.
400	RML.0226	Invalid user name of the device.	Invalid user name of the device.	Check whether the user name of the device is valid.
400	RML.0227	Invalid password of the device.	Invalid password of the device.	Check whether password of the device is valid.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0228	The number of devices to be exported exceeds 500.	The number of devices to be exported exceeds 500.	Change the number of devices to be exported.
400	RML.0229	The device name is invalid or duplicated.	The device name is invalid or duplicated.	Check whether the device name is valid or duplicated.
400	RML.0230	The device status is invalid.	The device status is invalid.	Check whether the device status is valid.
400	RML.0231	All the uploaded devices already exist.	All the uploaded devices already exist.	Change the uploaded devices which are exist.
400	RML.0232	The client ID is invalid or duplicated.	The client ID is invalid or duplicated.	Check whether the device ID is valid or duplicated.
400	RML.0233	The topic name does not exist.	The topic name does not exist.	Check whether the topic name is exist.
400	RML.0234	Invalid topic ID.	Invalid topic ID.	Check whether topic ID is valid.
400	RML.0235	Deleting online devices is not allowed.	Deleting online devices is not allowed.	Keep the devices offline and try again.
400	RML.0236	The device is offline.	The device is offline.	Keep the device online and try again.
400	RML.0237	The device is not a gateway.	The device is not a gateway.	Change the gateway device and try again.
400	RML.0238	The mqtt node does not exist.	The mqtt node does not exist.	Create the mqtt node and try again.
400	RML.0300	The product ID is null or invalid.	The product ID is null or invalid.	Check whether the product ID is null or invalid.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0301	The product name is invalid.	The product name is invalid.	Check whether the product name is valid.
400	RML.0302	The product does not exist.	The product does not exist.	Create the product and try again.
400	RML.0303	The product description is longer than 200 characters.	The product description is longer than 200 characters.	Change the length of product description.
400	RML.0304	The product already exists.	The product already exists.	Change the product and try again.
400	RML.0305	The product quota is not enough.	The product quota is not enough.	Contact the administrator to increase the product quota.
400	RML.0306	The product name does not exist.	The product name does not exist.	Add the product name.
400	RML.0308	The product attribute does not exist.	The product attribute does not exist.	Add the product attribute.
400	RML.0309	The product attribute already exists.	The product attribute already exists.	Change the product attribute and try again.
400	RML.0310	The product attribute identifier is invalid.	The product attribute identifier is invalid.	Check whether the product attribute identifier is valid.
400	RML.0311	The product attribute identifier already exists.	The product attribute identifier already exists.	Change the product attribute identifier and try again.
400	RML.0312	Import a product before importing a device.	Import a product before importing a device.	Import the device and try again.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0313	The product list is null.	The product list is null.	Choose one or more products to export.
400	RML.0314	Invalid product serial number.	Invalid product serial number.	Check whether the product serial number is valid.
400	RML.0315	All the uploaded products already exist.	All the uploaded products already exist.	Change the existing products and try again.
400	RML.0316	Incorrect field in the title of the product CVS file.	Incorrect field in the title of the product CVS file.	Check whether fields in the title of the product CSV file are correct.
400	RML.0317	The product name already exists.	The product name already exists.	Change the product name and try again.
400	RML.0318	The product attribute name already exists.	The product attribute name already exists.	Change the product attribute name and try again.
400	RML.0319	Invalid product name.	Invalid product name.	Check whether the product name is valid.
400	RML.0320	Failed to reset the product password.	Failed to reset the product password.	Check whether the product exists.
400	RML.0321	A product with devices attached cannot be deleted.	A product with devices attached cannot be deleted.	Delete all devices of the product and try again.
400	RML.0322	The number of products to be exported exceeds 500.	The number of products to be exported exceeds 500.	Change the number of products to be exported.
400	RML.0323	The product user name in the CSV file is invalid.	The product user name in the CSV file is invalid.	Check whether the product user name is valid.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0324	The product password in the CSV file is invalid.	The product password in the CSV file is invalid.	Check whether the product password in the CSV file is valid.
400	RML.0400	The model name already exists.	The model name already exists.	Change the model name and try again.
400	RML.0401	Unable to edit the attribute when the model is in disabled state.	Unable to edit the attribute when the model is in disabled state.	Enable the model and try again.
400	RML.0402	The model attribute does not exist.	The model attribute does not exist.	Add the model attribute.
400	RML.0403	The model attribute name already exists.	The model attribute name already exists.	Change the model attribute name and try again.
400	RML.0404	The model attribute identifier already exists.	The model attribute identifier already exists.	Change the model attribute identifier and try again.
400	RML.0405	A model with products attached cannot be deleted.	A model with products attached cannot be deleted.	Delete all products of the model and try again.
400	RML.0406	Invalid model ID.	Invalid model ID.	Check whether the model ID is valid.
400	RML.0407	The model ID does not exist.	The model ID does not exist.	Create the model ID.
400	RML.0408	The model does not exist.	The model does not exist.	Create the model.
400	RML.0409	Invalid model name.	Invalid model name.	Check whether the model name is valid.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0410	The model description is longer than 200 characters.	The model description is longer than 200 characters.	Change the length of the model description.
400	RML.0411	The model already exists.	The model already exists.	Change the model and try again.
400	RML.0412	Invalid attribute identifier.	Invalid attribute identifier.	Check whether attribute identifier is valid.
400	RML.0413	Invalid attribute data unit.	Invalid attribute data unit.	Check whether attribute data unit is valid.
400	RML.0414	Invalid attribute default data type.	Invalid attribute default data type.	Check whether attribute default data type is valid.
400	RML.0415	The attribute description is longer than 200 characters.	The attribute description is longer than 200 characters.	Change the length of attribute description.
400	RML.0416	Invalid attribute name.	Invalid attribute name.	Check whether the attribute name is valid.
400	RML.0417	The model status is null or invalid.	The model status is null or invalid.	Check whether the model status is valid.
400	RML.0500	The data source of the rule engine is invalid.	The data source of the rule engine is invalid.	Check whether the data source of the rule engine is valid.
400	RML.0501	The rule engine does not exist.	The rule engine does not exist.	Add the rule engine.
400	RML.0502	Invalid rule engine ID.	Invalid rule engine ID.	Check whether the rule engine is valid.
400	RML.0503	The level of the rule engine should be 0 or 1.	The level of the rule engine should be 0 or 1.	Change the level of the rule engine.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0504	The rule engine source does not exist.	The rule engine source does not exist.	Add the rule engine source.
400	RML.0505	Invalid rule name.	Invalid rule name.	Check whether the rule name is valid.
400	RML.0506	The topic is already added to the source.	The topic is already added to the source.	Change the topic of the source.
400	RML.0507	Only one topic can be added to the source rule.	Only one topic can be added to the source rule.	Change the number of the source rule's topics.
400	RML.0508	The source rule is not supported.	The source rule is not supported.	Change the source rule.
400	RML.0509	Only one topic can be added to the destination rule.	Only one topic can be added to the destination rule.	Change the number of the destination rule's topics.
400	RML.0510	The topic quota is not enough.	The topic quota is not enough.	Contact the administrator to increase the quota.
400	RML.0511	Invalid destination address.	Invalid destination address.	Check whether the destination address is valid.
400	RML.0512	The topic of the MQS destination is invalid.	The topic of the MQS destination is invalid.	Change MQS Topic.
400	RML.0513	The destination MQS user name or password is null.	The destination MQS user name or password is null.	Check whether the user name or password is null.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0514	The level of the rule engine should be device or product.	The level of the rule engine should be device or product.	Change the level of the rule engine.
400	RML.0515	The rule engine already exists.	The rule engine already exists.	Change the rule engine and try again.
400	RML.0516	The rule engine status is invalid.	The rule engine status is invalid.	Change the rule engine status.
400	RML.0517	The rule engine description is too long.	The rule engine description is too long.	Change the length of rule engine description.
400	RML.0518	The rule name already exists.	The rule name already exists.	Change the rule name.
400	RML.0519	Invalid rule source ID.	Invalid rule source ID.	Change the rule source ID.
400	RML.0520	Invalid rule destination ID.	Invalid rule destination ID.	Change the rule destination ID.
400	RML.0521	Invalid rule destination type.	Invalid rule destination type.	Change the type of rule destination.
400	RML.0522	Rule destination device topic exists.	Rule destination device topic exists.	Change the topic of rule destination device.
400	RML.0523	Rule destination connection failed.	Rule destination connection failed.	Check whether the rule destination connection is normal. If the fault persists, contact technical support for assistance.
400	RML.0524	Rule already has javascript express.	Rule already has javascript express.	Delete the javascript express and try again.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.0525	The sql field is invalid.	The sql field is invalid.	Modify the SQL field.
400	RML.0526	Rule already has sql express.	Rule already has sql express.	Delete SQL and try again.
400	RML.0527	Product does not belong to the app.	Product does not belong to the app.	Choose the product under this app.
400	RML.0528	The rule and product belong to different apps.	The rule and product belong to different apps.	Choose the rule engine and product under the same app.
400	RML.4038	The input parameters of the interface used for query are incorrect. judge the error information according to the prompt. Fill in the correct parameters again.	Invalid {x} parameter in the request.	Check whether the input parameters comply with the rules as prompted.
400	RML.4039	The input parameters of the interface used for requesting are incorrect, and the error information is judged according to the prompt. Enter the correct parameters again	Invalid {x} parameter in the request.	Check whether the input parameters comply with the rules as prompted.

Status Code	Error Codes	Error Message	Description	Solution
400	RML.4040	The input parameter format of the interface used for requesting is incorrect. judge the error information according to the prompt and fill in the parameter that complies with the rule again.	parameter {x} format error. It must be {1}.	Check whether the input parameters comply with the rules as prompted.
400	ROMA.00110001	The parameter does not meet verification rules: {0}	The parameter does not meet verification rules: {0}	Check whether the parameter complies with the rules as prompted.
401	RML.4101	The token carried in the request interface is invalid. The login page may time out. You need to refresh the page for login.	Invalid token.	The login page may have timed out and needs to be refreshed. Login again before operation.
403	RML.4303	The currently logged in user or role does not have permission to perform the operation.	This role does not have the permission to perform this operation.	You need to replace the user or role that has the permission to perform this operation.

Status Code	Error Codes	Error Message	Description	Solution
403	ROMA.00110005	You do not have the {0} permission on the application to which the resource belongs.	You do not have the {0} permission on the application to which the resource belongs.	Grant the required permission by clicking Authorize User on the Integration Applications page of the ROMA Connect console.
403	ROMA.00110007	You do not have the permission to view any application resources. Choose Integration Applications > Authorize User, and check whether you have been granted the corresponding permission.	You do not have the permission to view any application resources. Choose Integration Applications > Authorize User, and check whether you have been granted the corresponding permission.	Grant the required permission by clicking Authorize User on the Integration Applications page of the ROMA Connect console.
403	ROMA.00110008	You do not have the {0} permission on the resource. Check whether you have been granted the corresponding permission in the related service.	You do not have the {0} permission on the resource. Check whether you have been granted the corresponding permission in the related service.	Grant the required permission by clicking Authorize User on the Integration Applications page of the ROMA Connect console.
403	ROMA.00110014	The current login account has limited rights and no op _ service rights.	The account is not an op_service account and does not have permission to perform the current operation	Change the account with op _ service permission to log in again.

Status Code	Error Codes	Error Message	Description	Solution
403	ROMA.00110015	The current account has limited rights and does not have the right to operate the current instance.	The current account does not have permission to operate the current instance: {0}	Change the account with permission to operate the instance to log in and then operate.
404	RML.4041	The interface input parameter for the request is missing a field, and an error message is judged according to the prompt. Fill in the correct parameters again.	missing param {x}.	Add this field parameter according to the page prompt.
404	RML.4402	Failed to create the instance. failed to query the instance. Database error. querying database failed.	This ROMALINK instance does not exist.	Contact technical support for assistance.
404	ROMA.00110006	The resource does not exist. Check whether the resource ID {0} is correct.	The resource does not exist. Check whether the resource ID {0} is correct.	Check whether the resource ID exists.
500	ROMA.00110000	Internal Error.	Internal Error.	Contact technical support for assistance.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110002	The instance does not exist. project_id: {0}, instance_id: {1}	The instance does not exist. project_id: {0}, instance_id: {1}	Create an instance or use another instance.
500	ROMA.00110003	An error occurs when reading data from or writing data to Redis on the data plane.	An error occurs when reading data from or writing data to Redis on the data plane.	Check whether the network and instance status are normal. If the fault persists, contact technical support for assistance.
500	ROMA.00110004	The quota exceeds the upper limit, {0}. Increase the quota.	The quota exceeds the upper limit, {0}. Increase the quota.	Contact the administrator to increase the quota.
500	ROMA.00110009	The request body is empty.	The request body is empty.	Transfer the correct request body.
500	ROMA.00110010	Failed to call the MQS interface.	Failed to call the MQS interface.	Check whether the MQS service is normal. If the fault persists, contact technical support for assistance.
500	ROMA.00110011	Invalid encoding format. Check whether the encoding format of the file is UTF8.	Invalid encoding format. Check whether the encoding format of the file is UTF8.	Check the file encoding format. If the file encoding format is not UTF8, change it to UTF8.
500	ROMA.00110012	The maximum number of products to be deleted at a time cannot exceed {0}.	The maximum number of products to be deleted at a time cannot exceed {0}.	Reduce the number of products to batch delete each time.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110013	The maximum number of devices to be deleted at a time cannot exceed {0}.	The maximum number of devices to be deleted at a time cannot exceed {0}.	Reduce the number of devices to batch delete each time.
500	ROMA.00110201	The product template name {0} already exists. Change the name and try again.	The product template name {0} already exists. Change the name and try again.	Use another product template name and try again.
500	ROMA.00110202	The product template corresponding to the ID {0} does not exist. Select an existing product template and try again.	The product template corresponding to the ID {0} does not exist. Select an existing product template and try again.	Select an existing product template and try again.
500	ROMA.00110203	The product template is being disabled. Enable the template first.	The product template is being disabled. Enable the template first.	Enable the product template and try again.
500	ROMA.00110401	The command name {0} already exists. Change the name and try again.	The command name {0} already exists. Change the name and try again.	Use another command name and try again.
500	ROMA.00110402	The command name {0} does not exist. Select an existing command and try again.	The command name {0} does not exist. Select an existing command and try again.	Select an existing command and try again.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110403	The command delivery field name {0} already exists. Change the name and try again.	The command delivery field name {0} already exists. Change the name and try again.	Use another name and try again.
500	ROMA.00110404	The command delivery field name {0} does not exist. Select an existing command delivery field and try again.	The command delivery field name {0} does not exist. Select an existing command delivery field and try again.	Select an existing command delivery field and try again.
500	ROMA.00110405	The command response field name {0} already exists. Change the name and try again.	The command response field name {0} already exists. Change the name and try again.	Use another command response field name and try again.
500	ROMA.00110406	The service name {0} already exists. Change the name and try again.	The service name {0} already exists. Change the name and try again.	Use another name and try again.
500	ROMA.00110407	The attribute name {0} already exists. Change the name and try again.	The attribute name {0} already exists. Change the name and try again.	Use another attribute name and try again.
500	ROMA.00110701	The product name {0} already exists.	The product name {0} already exists.	Use another product name.
500	ROMA.00110702	The product with ID {0} does not exist.	The product with ID {0} does not exist.	Check whether the corresponding product exists.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110703	The product named {0} contains devices. Delete all devices under the product and try again.	The product named {0} contains devices. Delete all devices under the product and try again.	Delete all devices under the product and then delete the product.
500	ROMA.00110704	The product has been used in a rule.	The product has been used in a rule.	Delete the product used in the rule engine.
500	ROMA.00110705	The topic name {0} of the product already exists.	The topic name {0} of the product already exists.	Use another topic name and try again.
500	ROMA.00110706	The manufacturer ID and product model already exist.	The manufacturer ID and product model already exist.	Use another manufacturer ID and product model and try again.
500	ROMA.00110707	The product topic has been used in the rule {0} and cannot be modified. Delete the product topic used in the rule and then modify the product topic.	The product topic has been used in the rule {0} and cannot be modified. Delete the product topic used in the rule and then modify the product topic.	Delete the product topic used in the rule engine.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110708	Failed to create an MQS topic for product {0}. Check whether the number of MQS topic partitions exceeds the partition limit or whether the MQS service is normal, and try again.	Failed to create an MQS topic for product {0}. Check whether the number of MQS topic partitions exceeds the partition limit or whether the MQS service is normal, and try again.	Check whether the MQS service is normal. If the fault persists, contact technical support for assistance.
500	ROMA.00110709	Failed to delete the MQS topic when deleting product {0}. Check whether the MQS service is available.	Failed to delete the MQS topic when deleting product {0}. Check whether the MQS service is available.	Check whether the MQS service is normal. If the fault persists, contact technical support for assistance.
500	ROMA.00110710	The product protocol {0} is not supported.	The product protocol {0} is not supported.	Select a correct product protocol.
500	ROMA.00110711	The topic has been bound to a connection point on the OPC UA device {0} and cannot be modified. Delete the connection point from the OPC UA device first.	The topic has been bound to a connection point on the OPC UA device {0} and cannot be modified. Delete the connection point from the OPC UA device first.	Delete the connection of the OPC UA device, and then modify the product topic.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110712	The app ID does not exist. Enter a correct app ID.	The app ID does not exist. Enter a correct app ID.	Use a correct application ID.
500	ROMA.00110713	Gateway products cannot be created on old instances. Create a common product.	Gateway products cannot be created on old instances. Create a common product.	Create a common product.
500	ROMA.00110714	All products to be imported already exist.	All products to be imported already exist.	Select the product to import again.
500	ROMA.00110715	The title row contains incorrect fields. See the title: {0}.	The title row contains incorrect fields. See the title: {0}.	Check and modify the fields in the title row of the file as prompted.
500	ROMA.00110716	The product does not exist. Select at least one product to export.	The product does not exist. Select at least one product to export.	Check whether the subscriber has products. If yes, select at least one product and export it again.
500	ROMA.00110717	The number of products to be exported cannot exceed 500.	The number of products to be exported cannot exceed 500.	Check that the number of products to export does not exceed 500.
500	ROMA.00110718	Failed to read the file stream. Check whether the file is normal or whether the network connection is normal.	Failed to read the file stream. Check whether the file is normal or whether the network connection is normal.	Check whether the network connection is normal. Check whether the file is damaged. Check whether the file contains a large number of empty rows.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110719	The app name does not exist. Check the app name {0}.	The app name does not exist. Check the app name {0}.	Based on the error information, change the application name in the file or create an application with the same name.
500	ROMA.00110720	The file does not exist or the file format is incorrect. Import a CSV file.	The file does not exist or the file format is incorrect. Import a CSV file.	Check whether the imported CSV file is correct.
500	ROMA.00110721	Failed to read the CSV file. Check the file content.	Failed to read the CSV file. Check the file content.	Check whether the CSV file content is valid.
500	ROMA.00110722	Failed to query the product. Check whether product data in the request exists.	Failed to query the product. Check whether product data in the request exists.	Check whether the product data exists in the request.
500	ROMA.00110723	Incorrect DeviceType field in the file: {0}.	Incorrect DeviceType field in the file: {0}.	Check whether the value of the DeviceType field is correct.
500	ROMA.00110724	Incorrect ProductType field in the file: {0}.	Incorrect ProductType field in the file: {0}.	Check whether the value of the ProductType field is correct.
500	ROMA.00110725	Incorrect DataFormat field in the file: {0}.	Incorrect DataFormat field in the file: {0}.	Check whether the value of the DataFormat field is correct.
500	ROMA.00110726	The file is abnormal. Check the file content {0}.	The file is abnormal. Check the file content {0}.	Check whether the file content is correct.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00110727	Failed to obtain the service address of ROMA Server. Check whether this service address is configured in the environment.	Failed to obtain the service address of ROMA Server. Check whether this service address is configured in the environment.	Contact technical support for assistance.
500	ROMA.00110728	Incorrect device type: {0}. Enter a correct device type or define a new device type in the data dictionary.	Incorrect device type: {0}. Enter a correct device type or define a new device type in the data dictionary.	Enter the correct device type when calling the API of creating a product.
500	ROMA.00110729	Failed to request ROMA Server. Check whether ROMA Server is available.	Failed to request ROMA Server. Check whether ROMA Server is available.	Contact technical support for assistance.
500	ROMA.00110730	Illegal product ID during export: {0}.	Illegal product ID during export: {0}.	Check whether the entered product ID list is a numeric value. If yes, import the product ID list again.
500	ROMA.00111001	The product associated with the device does not belong to the specified application {0}. Check whether the app ID is correct.	The product associated with the device does not belong to the specified application {0}. Check whether the app ID is correct.	Check whether the application ID is correct.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111002	Invalid tag name: {0}. Enter a maximum of 64 characters, consisting of letters, digits, hyphens (-), and underscores (_).	Invalid tag name: {0}. Enter a maximum of 64 characters, consisting of letters, digits, hyphens (-), and underscores (_).	Check whether the tag key is valid.
500	ROMA.00111003	The device ID {0} already exists. Change the device ID.	The device ID {0} already exists. Change the device ID.	Change the device ID.
500	ROMA.00111004	Failed to forcibly bring device {0} offline. Possible cause: The data plane service is abnormal.	Failed to forcibly bring device {0} offline. Possible cause: The data plane service is abnormal.	Check whether the network between the management plane and the data plane is normal and whether the instance is running properly. If the fault persists, contact technical support for assistance.
500	ROMA.00111005	Commands cannot be delivered to a device in disconnected state. Bring the device online first.	Commands cannot be delivered to a device in disconnected state. Bring the device online first.	Bring the device online and try again.
500	ROMA.00111006	Commands cannot be delivered to a device in disabled state. Enable the device first.	Commands cannot be delivered to a device in disabled state. Enable the device first.	Enable the device.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111007	Commands cannot be delivered to an offline device if the device shadow is disabled. Enable the device shadow first.	Commands cannot be delivered to an offline device if the device shadow is disabled. Enable the device shadow first.	Enable the device shadow.
500	ROMA.00111008	Failed to deliver the command. Check whether the server status is normal.	Failed to deliver the command. Check whether the server status is normal.	Check whether the device is connected. Check whether the network connection of the data plane is normal. Check whether the instance status is normal. If the fault persists, contact technical support for assistance.
500	ROMA.00111009	An online device cannot be deleted. Bring the device offline first.	An online device cannot be deleted. Bring the device offline first.	Check whether the device is online. If the device is online, bring the device offline and delete the device.
500	ROMA.00111010	Failed to query the device. Check whether the device data in the request exists.	Failed to query the device. Check whether the device data in the request exists.	Check whether the device data exists in the request.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111011	The device contains subdevices and cannot be deleted. Delete the subdevices under the device first.	The device contains subdevices and cannot be deleted. Delete the subdevices under the device first.	Delete the subdevices under the device and then delete the device.
500	ROMA.00111012	Failed to deliver the command for deleting the subdevice. Check whether the gateway managing the subdevice exists.	Failed to deliver the command for deleting the subdevice. Check whether the gateway managing the subdevice exists.	Check whether the gateway of the subdevice exists.
500	ROMA.00111013	Failed to deliver the command for deleting the subdevice. Check whether the product to which the subdevice belongs exists.	Failed to deliver the command for deleting the subdevice. Check whether the product to which the subdevice belongs exists.	Check whether the product associated with the subdevice exists.
500	ROMA.00111014	Failed to register the subdevice because the specified gateway does not exist.	Failed to register the subdevice because the specified gateway does not exist.	Check whether the specified gateway device ID is correct.
500	ROMA.00111015	Failed to register the subdevice because the specified gateway is invalid.	Failed to register the subdevice because the specified gateway is invalid.	Use a correct gateway device ID.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111016	Failed to register the subdevice because the product associated with the subdevice must be of the common type.	Failed to register the subdevice because the product associated with the subdevice must be of the common type.	Check whether the associated product is a common product.
500	ROMA.00111017	Failed to obtain the username and password of the device. Check whether the device data is correct.	Failed to obtain the username and password of the device. Check whether the device data is correct.	Check whether the token_oid associated with the device exists.
500	ROMA.00111018	Only a directly connected device can be added as a gateway subdevice. Check whether the type of the added device is correct.	Only a directly connected device can be added as a gateway subdevice. Check whether the type of the added device is correct.	Check the device type and select a directly connected device as the subdevice of the gateway.
500	ROMA.00111019	An online device cannot be added as a gateway subdevice. Bring the device offline first.	An online device cannot be added as a gateway subdevice. Bring the device offline first.	Check the device status and bring the device offline.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111020	The Modbus connection point does not exist. Device ID: {0}; connection point ID: {1}.	The Modbus connection point does not exist. Device ID: {0}; connection point ID: {1}.	Check whether the Modbus connection point exists. If the connection point does not exist, create it. If yes, contact technical support for assistance.
500	ROMA.00111021	The Modbus policy does not exist. Device ID: {0}; connection point ID: {1}; policy ID: {2}.	The Modbus policy does not exist. Device ID: {0}; connection point ID: {1}; policy ID: {2}.	Check whether the Modbus policy exists. If the Modbus policy does not exist, create it. If the Modbus policy already exists, contact technical support for assistance.
500	ROMA.00111022	The Modbus policy name {2} (device ID: {0}; connection point ID: {1}) already exists. Change the Modbus policy name.	The Modbus policy name {2} (device ID: {0}; connection point ID: {1}) already exists. Change the Modbus policy name.	Use another Modbus policy name.
500	ROMA.00111023	All node paths in the imported file already exist.	All node paths in the imported file already exist.	Change the node path in the imported file.
500	ROMA.00111024	The OPC UA connection point does not exist. Device ID: {0}; connection point ID: {1}.	The OPC UA connection point does not exist. Device ID: {0}; connection point ID: {1}.	Check whether the OPC UA connection point exists. If the connection point does not exist, create it. If the connection point already exists, contact technical support for assistance.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111025	The OPC UA connection point name {1} (device ID: {0}) already exists. Change the OPC UA connection point name.	The OPC UA connection point name {1} (device ID: {0}) already exists. Change the OPC UA connection point name.	Use another connection point name.
500	ROMA.00111026	The OPC UA node does not exist. Device ID: {0}; connection point ID: {1}; node ID: {2}.	The OPC UA node does not exist. Device ID: {0}; connection point ID: {1}; node ID: {2}.	Check whether the OPC UA node exists. If the OPC UA node does not exist, create it. If the OPC UA node already exists, contact technical support for assistance.
500	ROMA.00111027	The OPC UA node does not belong to the current device. Node ID: {0}; device ID: {1}.	The OPC UA node does not belong to the current device. Node ID: {0}; device ID: {1}.	Check whether the OPC UA node exists. If the OPC UA node does not exist, create it. If the OPC UA node already exists, contact technical support for assistance.
500	ROMA.00111028	The node_path {2} (device ID: {0}; connection point ID: {1}) already exists. Change the node path of the OPC UA node.	The node_path {2} (device ID: {0}; connection point ID: {1}) already exists. Change the node path of the OPC UA node.	Modify the corresponding connection point in the OPC UA configuration of the device.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111029	The Modbus connection point (device ID: {0}; connection point name: {1}) already exists. Change the Modbus connection point name.	The Modbus connection point (device ID: {0}; connection point name: {1}) already exists. Change the Modbus connection point name.	Use another Modbus connection point name.
500	ROMA.00111030	The Modbus connection point name {1} (device ID: {0}) already exists. Change the Modbus connection point name.	The Modbus connection point name {1} (device ID: {0}) already exists. Change the Modbus connection point name.	Modify the name of the Modbus connection point as prompted.
500	ROMA.00111031	Failed to deliver the command to Edgeshell.	Failed to deliver the command to Edgeshell.	Check whether the LINK instance is normal. If the fault persists, contact technical support for assistance.
500	ROMA.00111032	Failed to deliver commands to the offline Edgeshell. Bring Edgeshell online and try again.	Failed to deliver commands to the offline Edgeshell. Bring Edgeshell online and try again.	Check whether the device is online. If not, bring the device online.
500	ROMA.00111033	The specified service ID or command ID does not exist. Check whether the entered service ID or command ID is correct.	The specified service ID or command ID does not exist. Check whether the entered service ID or command ID is correct.	Check whether the service ID and command ID exist under the product to which the device belongs.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111034	{0} OPC UA nodes to be exported, which exceeds the upper limit {1}.	{0} OPC UA nodes to be exported, which exceeds the upper limit {1}.	Reduce the number of OPC UA nodes to ensure that the number of OPC UA nodes to export is less than the maximum limit allowed.
500	ROMA.00111035	{0} OPC UA nodes to be imported, which exceeds the upper limit {1}.	{0} OPC UA nodes to be imported, which exceeds the upper limit {1}.	Reduce the number of OPC UA nodes to ensure that the number of OPC UA nodes to import is less than the maximum limit allowed.
500	ROMA.00111036	The imported OPC UA node file is empty. Select a valid file.	The imported OPC UA node file is empty. Select a valid file.	Select a valid file.
500	ROMA.00111038	The total number of node paths exceeds the quota. Ensure that the total number of imported nodes and existing nodes under the same OPC UA connection point is less than the quota.	The total number of node paths exceeds the quota. Ensure that the total number of imported nodes and existing nodes under the same OPC UA connection point is less than the quota.	Reduce the number of nodes to import or contact the administrator to increase the quota.
500	ROMA.00111039	The topic {0} used for command delivery does not meet the "%s/in/%s" rule.	The topic {0} used for command delivery does not meet the "%s/in/%s" rule.	Check whether the topic used for command delivery meets the rules.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111040	The attribute value of the device shadow is invalid. Check the parameter and try again.	The attribute value of the device shadow is invalid. Check the parameter and try again.	Check whether the entered attribute value of the device shadow is valid.
500	ROMA.00111041	The exported device data is empty. Export at least one device data record.	The exported device data is empty. Export at least one device data record.	Select at least one device to export.
500	ROMA.00111042	The number of exported devices cannot exceed the upper limit {0}.	The number of exported devices cannot exceed the upper limit {0}.	Reduce the number of devices to export and try again.
500	ROMA.00111043	The customized topic {0} already exists. Change the topic name and try again.	The customized topic {0} already exists. Change the topic name and try again.	Use another topic name and try again.
500	ROMA.00111044	Devices using the Modbus or OPC UA protocol cannot be added as subdevices.	Devices using the Modbus or OPC UA protocol cannot be added as subdevices.	Select a device that uses another protocol.
500	ROMA.00111045	Subdevice registration does not support products using the Modbus or OPC UA protocol.	Subdevice registration does not support products using the Modbus or OPC UA protocol.	Use another protocol when registering a subdevice.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111046	Connection point {0} can be created only for common devices. Check the device type.	Connection point {0} can be created only for common devices. Check the device type.	Check whether the device is a common device. If not, change the device type.
500	ROMA.00111047	All the devices to be imported already exist or the devices do not have corresponding products.	All the devices to be imported already exist or the devices do not have corresponding products.	Check whether all devices exist. Check whether the corresponding product exists for the devices.
500	ROMA.00111048	The number of imported devices exceeds the upper limit {0}.	The number of imported devices exceeds the upper limit {0}.	Reduce the number of devices in the file based on the maximum number of devices that can be imported.
500	ROMA.00111049	The imported field does not match the title. Import correct data based on the title {0}.	The imported field does not match the title. Import correct data based on the title {0}.	Import correct data based on the title fields.
500	ROMA.00111050	The device name {0} already exists in the product {1}.	The device name {0} already exists in the product {1}.	Use another device name.
500	ROMA.00111051	The device {0} does not exist. Check the parameters and try again.	The device {0} does not exist. Check the parameters and try again.	Register a new device or replace the device with another one.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111052	Invalid topic permission. Change the permission to pub or sub and try again.	Invalid topic permission. Change the permission to pub or sub and try again.	Change the topic permission and try again.
500	ROMA.00111053	The device topic {0} does not exist. Check the parameters and try again.	The device topic {0} does not exist. Check the parameters and try again.	Check whether the topic exists.
500	ROMA.00111054	The device password cannot be empty. Check information of the device ID {0}.	The device password cannot be empty. Check information of the device ID {0}.	Check whether the device password in the file is empty.
500	ROMA.00111055	Incorrect Enable field. Enter 0 (indicating that the device is enabled) or 1 (indicating that the device is disabled).	Incorrect Enable field. Enter 0 (indicating that the device is enabled) or 1 (indicating that the device is disabled).	Check whether the Enable field of the device in the file is correct.
500	ROMA.00111056	The topic_perm field cannot be empty when devices with customized topics are exported. Log in to the database and check the device whose client ID is {0}.	The topic_perm field cannot be empty when devices with customized topics are exported. Log in to the database and check the device whose client ID is {0}.	Based on the clientId field, check whether the topic_perm field of the custom topic corresponding to the device is empty. If the field is empty, change the value to pub or sub and export the topic again.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111301	The group name {0} already exists. Change the name and try again.	The group name {0} already exists. Change the name and try again.	Use another name and try again.
500	ROMA.00111302	The current group is associated with devices and cannot be deleted. Delete the devices first.	The current group is associated with devices and cannot be deleted. Delete the devices first.	Delete the devices associated with the group and try again.
500	ROMA.00111303	The parent group {0} does not exist. Change the parent group and try again.	The parent group {0} does not exist. Change the parent group and try again.	Change the parent group and try again.
500	ROMA.00111304	The group supports a maximum of five levels. Create subgroups under other groups.	The group supports a maximum of five levels. Create subgroups under other groups.	Change the parent group and try again.
500	ROMA.00111601	The rule name {0} already exists. Change the rule name and try again.	The rule name {0} already exists. Change the rule name and try again.	Use another rule name and try again.
500	ROMA.00111602	The product at the source does not exist. Select an existing product and try again.	The product at the source does not exist. Select an existing product and try again.	Select an existing product and try again.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111 603	The device at the source does not exist. Select an existing device and try again.	The device at the source does not exist. Select an existing device and try again.	Select an existing device and try again.
500	ROMA.00111 605	Invalid data parsing parameter. If data parsing is enabled, the query field cannot be left blank. If data parsing is disabled, the query field and search criteria must be left blank.	Invalid data parsing parameter. If data parsing is enabled, the query field cannot be left blank. If data parsing is disabled, the query field and search criteria must be left blank.	Check whether the rule data parsing parameter is valid.
500	ROMA.00111 606	If the destination type is KAFKA or ROMA_MQS and supports SSL connections, the value of mqs_sasl_ssl must be true and the username and password cannot be left empty.	If the destination type is KAFKA or ROMA_MQS and supports SSL connections, the value of mqs_sasl_ssl must be true and the username and password cannot be left empty.	Ensure that the username and password are not empty when the value of mqs_sasl_ssl is true.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111 607	The topic {0} of the destination KAFKA or ROMA_MQS does not meet the rule. Enter 3 to 200 characters, including only digits, letters, underscores (_), and hyphens (-).	The topic {0} of the destination KAFKA or ROMA_MQS does not meet the rule. Enter 3 to 200 characters, including only digits, letters, underscores (_), and hyphens (-).	Check whether the topic meets the rules and modify it if necessary.
500	ROMA.00111 608	The connection address {0} of the destination does not meet the rule. Enter 10 to 200 characters, including digits, colons (:), periods (.), and commas (,).	The connection address {0} of the destination does not meet the rule. Enter 10 to 200 characters, including digits, colons (:), periods (.), and commas (,).	Check whether the connection address meets the rules.
500	ROMA.00111 609	The application ID of the device is inconsistent with that of the rule. Enter a correct application ID.	The application ID of the device is inconsistent with that of the rule. Enter a correct application ID.	Enter the correct application ID of the device.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111610	If the destination type is KAFKA or ROMA_MQS, the destination_type, app_id, server and topic fields must be specified.	If the destination type is KAFKA or ROMA_MQS, the destination_type, app_id, server and topic fields must be specified.	Check the parameters and try again.
500	ROMA.00111611	Failed to connect to the destination {0}. Check whether the connection information is correct or whether the destination address is reachable.	Failed to connect to the destination {0}. Check whether the connection information is correct or whether the destination address is reachable.	Check whether the connection information is correct or whether the destination address is reachable. The username and password correspond to the appKey and appSecret of the application to which the topic belongs, respectively.
500	ROMA.00111612	The device-level topic {0} at the source does not meet the "/v1/devices/device ID/datas" or "product serial number/out/device ID" rule.	The device-level topic {0} at the source does not meet the "/v1/devices/device ID/datas" or "product serial number/out/device ID" rule.	Check whether the topic meets the rules and try again.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111613	The product-level topic {0} at the source does not meet the "/v1/products/product serial number/datas" or "product serial number/out/+" rule.	The product-level topic {0} at the source does not meet the "/v1/products/product serial number/datas" or "product serial number/out/+" rule.	Check whether the topic meets the rules and try again.
500	ROMA.00111614	The topic {0} at the source already exists. Check the topic and try again.	The topic {0} at the source already exists. Check the topic and try again.	Change the name and try again.
500	ROMA.00111615	If the destination type is DEVICE, multiple destinations can be added. If not, only one destination can be added. Check the destination type and try again.	If the destination type is DEVICE, multiple destinations can be added. If not, only one destination can be added. Check the destination type and try again.	Check the destination type and modify the number of records added to the destination.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111616	Failed to obtain the data source from FDI. Check whether the data source name and application name are correct and whether FDI is normal.	Failed to obtain the data source from FDI. Check whether the data source name and application name are correct and whether FDI is normal.	Check whether the data source name and application name are correct. Check whether the FDI service is normal.
500	ROMA.00111617	Failed to parse the application SQL. Enter the correct SQL field and try again.	Failed to parse the application SQL. Enter the correct SQL field and try again.	Enter the correct SQL field or SQL condition and try again.
500	ROMA.00111618	If the destination KAFKA or ROMA_MQS does not support SSL connections, the value of mqs_sasl_ssl must be false (default value), and the username and password must be left blank.	If the destination KAFKA or ROMA_MQS does not support SSL connections, the value of mqs_sasl_ssl must be false (default value), and the username and password must be left blank.	Check the parameters when the destination is Kafka or ROMA_MQS and try again.
500	ROMA.00111619	If the destination type is MQS, the destination_type, app_id, server, token, and topic fields must be specified.	If the destination type is MQS, the destination_type, app_id, server, token, and topic fields must be specified.	Check whether the parameters meet the requirements as prompted.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111620	If the destination type is DEVICE, the destination_type, server, token, topic, and tag fields must be specified.	If the destination type is DEVICE, the destination_type, server, token, topic, and tag fields must be specified.	Check whether the parameters meet the requirements as prompted.
500	ROMA.00111621	If the destination type is DIS, the destination_type, tag, and topic fields must be specified.	If the destination type is DIS, the destination_type, tag, and topic fields must be specified.	Check whether the parameters meet the requirements as prompted.
500	ROMA.00111622	The connection address {0} of the destination does not meet the rule. Enter 10 to 200 characters, consisting only digits, colons (:), periods (.), and semicolons (;).	The connection address {0} of the destination does not meet the rule. Enter 10 to 200 characters, consisting only digits, colons (:), periods (.), and semicolons (;).	Check and correct the connection address of the destination.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111623	The Topic Level parameter at the source of the rule is invalid. If the device name is specified, Topic Level must be Device-level. If the device name is not specified, Topic Level must be Product-level.	The Topic Level parameter at the source of the rule is invalid. If the device name is specified, Topic Level must be Device-level. If the device name is not specified, Topic Level must be Product-level.	Check the rule level parameter and try again.
500	ROMA.00111624	The Topic Name parameter at the source of the rule is invalid. If the device name is specified, Topic Name must be specified. If the device name is left blank, Topic Name can be left blank.	The Topic Name parameter at the source of the rule is invalid. If the device name is specified, Topic Name must be specified. If the device name is left blank, Topic Name can be left blank.	Check whether the topic parameter is valid and try again.
500	ROMA.00111625	The application ID {0} is inconsistent with the ID of the application to which the rule {1} belongs. Check the rule name and application ID and try again.	The application ID {0} is inconsistent with the ID of the application to which the rule {1} belongs. Check the rule name and application ID and try again.	Check whether the application ID to which the rule name belongs is the same as the application ID in the request. If they are different, change the application ID or rule name in the request.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111 626	The application ID is empty. When the rule does not exist, the application ID must be specified.	The application ID is empty. When the rule does not exist, the application ID must be specified.	Check whether the rule exists in the system. If the rule does not exist, enter the correct application ID in the request.
500	ROMA.00111 627	The application ID of the product is inconsistent with that of the rule. Enter a correct application ID.	The application ID of the product is inconsistent with that of the rule. Enter a correct application ID.	Enter the correct application ID of the product.
500	ROMA.00111 637	The current data plane instance version: {0} does not support this destination data source type: {1}, if you need to use this function, please upgrade the data plane to version 1.8.0 or higher.	The data source type cannot be set to the destination in the current version.	If this function is required, upgrade the data plane instance to a later version to support this function.

Status Code	Error Codes	Error Message	Description	Solution
500	ROMA.00111901	The destination configuration of the subscription type already exists in the current application. Cancel the enabled destination configuration and try again.	The destination configuration of the subscription type already exists in the current application. Cancel the enabled destination configuration and try again.	Cancel the enabled configuration of the destination and try again.

7.5 APIC Features Supported by ROMA Connect Instances

 NOTE

If the instance you are using does not have related features, [submit a service ticket](#) to upgrade your instance.

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
lts	Reporting of Shubao access logs	Yes	{ "name": "lts", "enable": true, "config": { "group_id": " ", "topic_id": " ", "log_group": " ", "log_stream": " ", "log_stream": " " } }	group_id	Log group ID.	-	-
				topic_id	Log stream ID.	-	-
				log_group	Name of a log group.	-	-
				log_stream	Name of a log stream.	-	-

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
gateway_responses	Custom gateway responses	No	-	-	-	-	-
ratelimit	Request throttling limit configuration	Yes	{"name": "ratelimit", "enable": true, "config": {"api_limits": 500}}	api_limits	Default request throttling value applied to all APIs. Set this parameter properly to meet service requirements. A small value may constantly throttle your services.	200 calls per second	1–1,000,000 calls per second
request_body_size	Configuration of the maximum request body size	Yes	{"name": "request_body_size", "enable": true, "config": "104857600"}	request_body_size	Maximum size of the body allowed in an API request.	12 M	1-9536 M

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
backend_timeout	Backend timeout configuration	Yes	{"name": "backend_timeout", "enable": true, "config": {"max_timeout": 500}}	max_timeout	Maximum timeout duration for APIC to access a backend service.	60000 ms	1-600000 ms
app_token	app_token authentication	Yes	{"name": "app_token", "enable": true, "config": {"enable": {"on": "\app_token_expire_time": 3600, "\app_token_uri": "/v1/apigw/oauth2/token", "\refresh_token_expire_time": 7200}}}	enable	Whether to enable app_token authentication.	off	on/off
				app_token_expire_time	Validity period of the access token.	3600 s	1-72000 s
				refresh_token_expire_time	Validity period of the refresh token.	7200 s	1-72000 s
				app_token_uri	URI used for obtaining the token.	/v1/apigw/oauth2/token	-
				app_token_key	Token encryption key.	-	-
app_basic	app_basic authentication	Yes	{"name": "app_basic", "enable": true, "config": {"on": "on"}}	-	-	off	on/off

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
app_secret	app_secret authentication	Yes	{"name": "app_secret", "enable": true, "config": "on"}	-	-	off	on/off
backend_token_allow	Allowing tenants to transparently transmit tokens to the backend	Yes	{"name": "backend_token_allow", "enable": true, "config": "{\"backend_token_allow_users\": [\"paas_apig_wx548366_01\"]}"}	backend_token_allow_users	Regular expression for transparently transmitting the token to the common tenant whitelist of the tenant to match the domain name of the common tenant.	-	-
sign_basic	Basic signature keys	No	-	-	-	-	-
multi_auth	Two-factor authentication	No	-	-	-	-	-

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
backend_client_certificate	Backend two-way authentication	Yes	{ "name": "backend_client_certificate", "enable": true, "config": { "enable": "on", "ca": "\", "content": "\", \"key": \"\" } }	enable	Whether to enable this function.	off	on/off
				ca	CA file of two-way authentication.	-	-
				content	Two-way authentication file.	-	-
				key	Private key of two-way authentication.	-	-

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
ssl_ciphers	HTTP S cipher suites	Yes	<pre>{"name": "ssl_ciphers", "enable": true, "config": "config": [{"ssl_ciphers\\": [{"ECDHE-ECDSA-AES256-GCM-SHA384\\"}]}</pre>	ssl_ciphers	Encryption and decryption suites supported. The ssl_ciphers parameter cannot be left blank and can contain only the options in the default value.	-	ECDHE-ECDSA-AES256-GCM-SHA384, ECDHE-RSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES128-GCM-SHA256, ECDHE-RSA-AES128-GCM-SHA256, ECDHE-ECDSA-AES256-SHA384, ECDHE-RSA-AES256-SHA384, ECDHE-ECDSA-AES128-SHA256, ECDHE-RSA-AES128-SHA256
app_config	Extended configuration	No	-	-	-	-	-
green_tunnel	Green channels	No	-	-	-	-	-

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
app_route	IP access	Yes	{"name": "app_route", "enable": true, "config": "on"}	-	-	off	on/off
default_group_hide	Hiding the default group. Note: After the default group is hidden, IP access is not supported. If you want to use the IP access function, you are advised to enable the app_route configuration.	Yes	{"name": "default_group_hide", "enable": true, "config": "on"}	-	-	off	on/off

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
cascade	Cascading function	Yes	{ "name": "app_route", "enable": true, "config": { "enable": { "on": { "cascade_auth_key": "abcdefabcdefabcdefabcdef11", "cascade_instance_ids": "104e4816-1e9c-4345-be3a-14528727d0e3" } } }	enable	Whether to enable the cascading function.	off	on/off
				cascade_auth_key	Encryption key used to generate the cascading authentication token.	-	-
				cascade_instance_ids	ID of the instance that can be used as the upper-level instance during cascading.	-	-
sandbox	IDA function sandbox configuration	Yes	{ "name": "sandbox", "enable": true, "config": { "max_cpu_time": 30000, "max_memory": 1073741824 }	max_cpu_time	Maximum CPU time that can be used by a function API. Unit: s.	60000 ms	1-100000 ms
				max_memory	Memory size allowed to be executed in a function API. Unit: byte.	256 M	1-9536 M

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
livedata_config	Whether custom backend configurations are supported. If both sandbox and livedata_config exist, livedata_config is used preferentially.	Yes	{ "name": "sandbox", "enable": true, "config": { "max_cpu_time": 30000, "max_memory": 1073741824, "max_memory": 1073741824, "dataapi_return_type": "no_string", "gw_address_protocol": "http", "livedata_env": "offline", "procedure_async": "off" } }	max_cpu_time	Maximum CPU time that can be used by a function API. Unit: s.	60000 ms	1-100000 ms
				max_memory	Memory size allowed to be executed in a function API. Unit: byte.	256 M	1-9536 M
				livedata_env	Running mode of a custom backend. If this parameter is set to online , the custom backend API will be returned in the online format.	online	online/offline
				gw_address_protocol	Default request protocol used in the DICT:gw_rest_float_addr variable.	none	http/https/none

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
				procedure_async	Whether asynchronous execution is used during the stored procedure.	off	on/off
				dataapi_return_type	Response format of a data API.	no_string	string/no_string
real_ip_from_xff	Whether to use the IP addresses in the X-Forwarded-For header for access control and request throttling	Yes	{"name": "real_ip_from_xff", "enable": true, "config": {"enable": "on", "xff_index": -1}}	enable	Whether to enable this function.	off	on/off

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
				xff_index	Sequence number of the IP address in the X-Forwarded-For header. The value can be positive, negative, or 0. • If the value is 0 or positive, obtain the IP address of the corresponding index in the X-Forwarded-For header. • If the value is negative, obtain the IP address in the	-1	Valid Int32 value

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
					indicated reverse order in the X-Forwarded-For header. For example, assume that the X-Forwarded-For header of a request received by API gateway contains three IP addresses: IP1, IP2, and IP3. If the value of <code>xff_index</code> is 0, IP1 is obtained. If the value is 1, IP2 is obtained. If the value is -1, IP3 is obtained. If the		

Feature Name	Feature Description	Configurable	Feature Configuration Example	Configuration Parameter	Parameter Description	Default Value	Value Range
					value is -2, IP2 is obtained.		