

FunctionGraph

API Reference

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1 Before You Start

1.1 Overview

Welcome to FunctionGraph. FunctionGraph hosts and computes event-driven functions in a serverless context while ensuring high availability, high scalability, and zero maintenance. All you need to do is write your code and set conditions. You pay only for what you use and you are not charged when your code is not running.

This document describes how to use application programming interfaces (APIs) to perform operations on FunctionGraph resources, such as creating, deleting, query, and executing functions. For details about all supported operations, see [API Overview](#).

1.2 API Calling

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

1.3 Constraints

- The number of functions that you can create is determined by your quota. For details, see [Quotas](#).
- For more constraints, see API description.

1.4 Concepts

- Account
An account is created upon successful registration with the cloud system. 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 and should not be used directly to perform routine management. For security purposes, create users and grant them permissions for routine management.

- IAM user

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

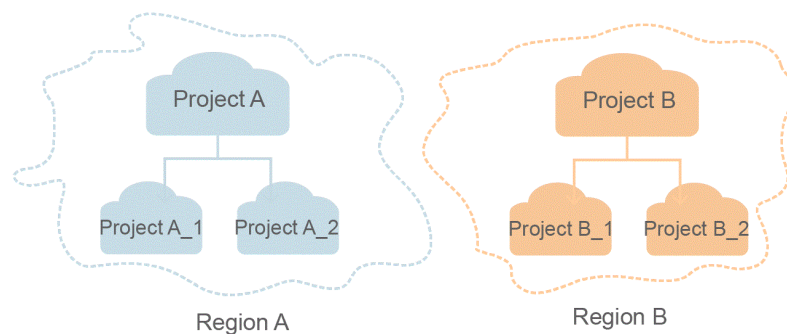
An IAM user can view the account ID and user ID on the [My Credentials](#) page of the console. The account name, username, and password will be required for API authentication.
- Region

Regions are geographic areas isolated from each other. Resources are region-specific and cannot be used across regions through internal network connections. For low network latency and quick resource access, select the nearest region.
- AZ

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

Projects group and isolate resources (including compute, storage, and network resources) across physical regions. A default project is provided for each region, and subprojects can be created under each default project. Users can be granted permissions to access all resources in a specific 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 isolating model



1.5 FunctionGraph Models

This section describes the returned fields of the FunctionGraph function model and trigger management models. The description of returned fields helps you understand FunctionGraph APIs. For details, see [APIs](#).

1.5.1 Function Model

This section describes the returned fields of the FunctionGraph function model.

Function Model

The function model of FunctionGraph is as follows:

```
{
  "functions": [
    {
      "func_urn":
"urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
      "func_name": "test",
      "domain_id": "cff01_hk",
      "namespace": "7aad83af3e8d42e99ac194e8419e2c9b",
      "project_name": "xxxxxxx",
      "package": "default",
      "runtime": "Node.js6.10",
      "timeout": 3,
      "handler": "test.handler",
      "memory_size": 128,
      "cpu": 300,
      "code_type": "inline",
      "code_url": "",
      "code_filename": "index.js",
      "code_size": 272,
      "user_data": "",
      "digest":
"decbce6939297b0b5ec6d1a23bf9c725870f5e69fc338a89a6a4029264688dc26338f56d08b6535d
e47f15ad538e22ca66613b9a46f807d50b687bb53fded1c6",
      "version": "latest",
      "image_name": "latest-5qe8e",
      "xrole": "cff",
      "app_xrole": null,
      "description": "111",
      "version_description": "",
      "last_modified": "2018-03-28T11:30:32+08:00",
      "func_code": {
        "file": "",
        "link": ""
      },
      "func_vpc": null,
      "mount_config": null,
      "depend_list": null,
      "strategy_config": {
        "concurrency": -1
      },
      "extend_config": "",
      "dependencies": null,
      "initializer_handler": "index.initializer",
      "initializer_timeout": 3
    }
  ],
  "next_marker": 45
}
```

Description

Table 1-1 describes the parameters in the function model.

Table 1-1 Parameters in the function model

Parameter	Description
func_urn	Function URN.
func_name	Function name.
domain_id	Tenant name.
namespace	Tenant's project ID.
project_name	Tenant's project name.
package	Group to which the function belongs. This field is defined to group functions.
runtime	Environment where a function is executed. Options: Node.js 6.10, Node.js 8.10, Node.js 10.16, Node.js 12.13, Node.js 14.18, Node.js 16.17, Node.js 18.15, Python 2.7, Python 3.6, Python 3.9, Python 3.10, Java 8, Java 11, Go 1.x, C# (.NET Core 2.1), C# (.NET Core 3.1), Cangjie 1.0, and PHP 7.3.
timeout	Maximum duration the function can be executed. Value range: 3s–900s.
handler	Handler of the function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.handler , the file name is myfunction.js , and the entry point function is handler .
memory_size	Memory (MB) consumed by the function. Options: 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584, and 4096.
cpu	CPU usage of a function.
code_type	Function code type. Options: <ul style="list-style-type: none">• inline: inline code• zip: ZIP file• jar: JAR file (mainly for Java functions)• obs: function code stored in an Object Storage Service (OBS) bucket
code_url	<ul style="list-style-type: none">• When code_type is set to obs, this parameter indicates the address of a function code package in OBS.• When code_type is set to inline, zip, or jar, this parameter is left blank.

Parameter	Description
code_filename	Function file name. <ul style="list-style-type: none">• When code_type is set to zip or jar, this parameter is required.• When code_type is set to obs or inline, this parameter is not required.
code_size	Code size in bytes.
user_data	Name/Value information defined for the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
digest	SHA512 hash value of function code, which is used to determine whether the function is changed.
version	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v+year/month/day-hour/minute/second).
image_name	Internal identifier of a function version.
xrole	Agency used by the function. You need to create an agency on the Identity and Access Management (IAM) console. This field is mandatory when a function needs to access other services.
app_xrole	Agency used by the function app. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
description	Description of the function.
version_description	Description of the function version.
last_modified	Time when the function was last updated.
func_code	Function code. See Table 1-2 .
depend_list	Dependency list.
strategy_config	Function policy configuration. See Table 1-3 .
extend_config	Function extension configuration.
dependencies	Dependency list. See Table 1-5 .
initializer_handler	Initializer of the function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.initializer , the file name is myfunction.js , and the initialization function is initializer .

Parameter	Description
initializer_timeout	Maximum duration the function can be initialized. Value range: 1s-300s.
func_vpc	Virtual Private Cloud (VPC) configuration. See Table 1-4 .
mount_config	File system configuration. See Table 1-6 .

Table 1-2 func_code parameters

Parameter	Description
file	Function code. Nothing will be returned.
link	Function code link. Nothing will be returned.

Table 1-3 strategy_config parameters

Parameter	Description
concurrency	<ul style="list-style-type: none">• 0: The function is disabled.• -1: The function is enabled.

Table 1-4 func_vpc parameters

Parameter	Type	Mandatory	Description
vpc_name	String	No	VPC name.
vpc_id	String	Yes when func_vpc is not empty.	VPC ID.
subnet_name	String	No	Subnet name.
subnet_id	String	Yes when func_vpc is not empty.	Subnet ID.
cidr	String	No	Subnet mask.
gateway	String	No	Gateway.

Table 1-5 dependency parameters

Parameter	Type	Mandatory	Description
owner	String	No	Domain ID of the dependency owner.
link	String	No	URL of the dependency package on OBS.
runtime	String	No	Language of the dependency package (only used for classification purposes).
etag	String	No	MD5 value of the dependency package.
size	Int	No	Size of the dependency package.
name	String	No	Name of the dependency package.
description	String	No	Description of the dependency package.
file_name	String	No	File name of the dependency package (ZIP).

Table 1-6 mount_config parameters

Parameter	Type	Mandatory	Description
mount_user	mount_user	No	File system user configuration.
func_mounts	func_mounts	No	File system list.

Table 1-7 mount_user parameters

Parameter	Type	Mandatory	Description
user_id	Int	Yes when mount_user is not empty.	User ID, which is an integer from -1 to 65,534, excluding 0, 1000, and 1002.
user_group_id	Int	Yes when mount_user is not empty.	User group ID, which is an integer from -1 to 65,534, excluding 0, 1000, and 1002.

Table 1-8 func_mounts parameters

Parameter	Type	Mandatory	Description
mount_type	String	Yes when func_mounts is not empty.	Mount type. Options: sfsTurbo and ecs .
mount_resource	String	Yes when func_mounts is not empty.	ID of the mounted resource (corresponding cloud service).
mount_share_path	String	Yes when mount_type is set to ecs .	Remote mount path. Example: 192.168.0.12:/data .
local_mount_path	String	Yes when func_mounts is not empty.	Function access path.

Function URN Format

```
urn:fss:<region_id>:<project_id>:function:<package>:<function_name>[:<version>]:!<alias>]
```

NOTE

A function URN is divided into eight fields by colons. The value of **region_id** is included in the system configuration. You can set this parameter to the same as that in the backend. The content in the brackets ([]) is a function version or alias. If you enter an alias, add an exclamation mark (!) in front of it for easy identification.

When a function URN is used as an API parameter, you can provide it in a simplified format as follows:

- 1 field: **<function_name>**. **project_id** is obtained from a token, **package** is **default**, and **version** is **latest**.

- 2 fields: **<package>:<function_name>**. **project_id** is obtained from a token, and **version** is **latest**.
- 3 fields: **<project_id>:<package>:<function_name>**. **version** is **latest**.
- 4 fields: **<project_id>:<package>:<function_name>:<Version or Alias>**.
- 7 fields:
urn:fss:<region_id>:<project_id>:function:<package>:<function_name>.
version is **latest**.
- 8 fields:
urn:fss:<region_id>:<project_id>:function:<package>:<function_name>:<Version or Alias>.

Function Instance Data

```
{
  "func_urn": "urn:fss:xxxxxxxx:73d69ae0cfcf460190522d060f05ad:function:default:auto_testfunc93749",
  "func_name": "auto_testfunc93749",
  "domain_id": "b8aca445e0d04d81a34bb59de5280c72",
  "namespace": "73d69ae0cfcf460190522d060f05ad",
  "project_name": "xxxxxxxx",
  "package": "default",
  "runtime": "Python2.7",
  "timeout": 5,
  "handler": "index.handler",
  "memory_size": 128,
  "cpu": 300,
  "code_type": "inline",
  "code_filename": "index.py",
  "code_size": 1992,
  "version": "latest",
  "image_name": "latest-200731100126@obffv",
  "description": "Runs in response to API requests, and demonstrates how to display different types of content, such as HTML pages and JSON structures.",
  "last_modified": "2020-07-31T10:01:26+08:00",
  "func_code": {},
  "FuncCode": {},
  "concurrency": -1,
  "strategy_config": {
```

```
"concurrency": -1
},
"enterprise_project_id": "0"
}
```

1.5.2 Trigger Management Models

This section describes the returned fields of the trigger management models.

Trigger Type Model

```
{
  "trigger_type_code":"string",
  "display_name":"string",
  "status":"string",
  "event_codes":"array of string",
  "description":"string"
}
```

[Table 1-9](#) describes the parameters in the trigger type model.

Table 1-9 Parameters in the trigger type model

Parameter	Description
trigger_type_code	Trigger type code. Options: SMN, APIG, OBS, timer, DMS, DIS, LTS, DDS, CTS, APIG (dedicated), APIC, and Kafka.
display_name	Trigger type name.
status	Trigger type status. Options: <ul style="list-style-type: none">● DISABLED: The trigger is disabled.● TEST: The trigger is under test and invisible to clients.● ACTIVE: The trigger is available.
event_codes	Event attribute field.
description	Trigger description.

Trigger Instance Model

```
{
  "trigger_id":"string",
  "trigger_type_code":"string",
  "event_type_code":"string",
  "status":"string",
  "event_data":"json struct",
  "last_updated_time":"string",
  "created_time":"string"
}
```

[Table 1-10](#) describes the parameters in the trigger instance model.

Table 1-10 Parameters in the trigger instance model

Parameter	Description
trigger_id	Trigger ID.
trigger_type_code	Trigger type code. Options: SMN, APIG, OBS, TIMER, DMS, DIS, LTS, DDS, CTS, and kafka.
event_type_code	Event type code. This parameter is mandatory. It can be a non-null character string. This parameter is not used currently.
status	Trigger status. Options: ACTIVE and DISABLED .
event_data	Trigger data defined in JSON format.
last_updated_time	Time when the trigger was last updated.
created_time	Time when the trigger was created.

Trigger Instance Data

- The data of a Simple Message Notification (SMN) trigger is as follows:

```
{
  "topic_urn": "string",
  "subscription_status": "string"
}
```

Table 1-11 describes the parameters of an SMN trigger.

Table 1-11 Parameters of an SMN trigger

Parameter	Description
topic_urn	URN of an SMN topic. This parameter is mandatory when you create an SMN trigger.
subscription_status	Subscription status of a topic. Options: Unconfirmed and Confirmed .

- The data of a Distributed Message Service (DMS) trigger is as follows:

```
{
  "queue_id": "string",
  "consumer_group_id": "string",
  "polling_interval": "int"
}
```

Table 1-12 describes the parameters of a DMS trigger.

Table 1-12 Parameters of a DMS trigger

Parameter	Description
queue_id	Name of a DMS queue. This parameter is mandatory when you create a DMS trigger.
consumer_group_id	Name of a DMS consumer group. This parameter is mandatory when you create a DMS trigger.
polling_interval	Interval at which messages are polled. This parameter is mandatory when you create a DMS trigger. Default value: 30s.

- The data of an Object Storage Service (OBS) trigger is as follows:

```
{
  "bucket": "yourBucketName",
  "events": ["s3:ObjectCreated:Put"],
  "prefix": "yourPrefix",
  "suffix": "yourSuffix"
}
```

Table 1-13 Parameters of an OBS trigger

Parameter	Description
bucket	Bucket name. This parameter is mandatory.
events	Collection of OBS trigger events. Options: s3:ObjectCreated:* , s3:ObjectCreated:Put , s3:ObjectCreated:Post , s3:ObjectCreated:Copy , s3:ObjectCreated:CompleteMultipartUpload , s3:ObjectRemoved:* , s3:ObjectRemoved>DeleteMarkerCreated , and s3:ObjectRemoved>Delete . This parameter is mandatory. Note that s3:objectcreated:* includes all events that start with s3:objectcreated , and s3:objectremoved:* includes all events that start with s3:objectremoved .
prefix	Prefix of an OBS object. This parameter is optional.
suffix	Suffix of an OBS object. This parameter is optional.

- The data of a Data Ingestion Service (DIS) trigger is as follows:

```
{
  "stream_name": "dis-qYPJ",
  "polling_interval": 30,
  "batch_size": 100,
  "sharditerator_type": "TRIM_HORIZON"
}
```

Table 1-14 describes the parameters of a DIS trigger.

Table 1-14 Parameters of a DIS trigger

Parameter	Description
stream_name	Name of a stream. This parameter is mandatory.
polling_interval	Pull period. This parameter is optional. Value range: 1–60. Default value: 30.
batch_size	Number of data records that can be pulled from a specified stream. This parameter is optional. Value range: 1–10000. Default value: 100.
sharditerator_type	Options: TRIM_HORIZON (pulling data from the beginning of a stream) and LATEST (pulling data from the current position). This parameter is mandatory.

- The data of an APIG trigger is as follows:

```
{
  "group_id":"string",
  "env_id":"string",
  "auth":"string",
  "protocol":"string",
  "name":"string",
  "path":"string",
  "match_mode":"string",
  "req_method":"string",
  "backend_type":"string",
  "type": int,
  "sl_domain":"string",
  "instance_id":"string"
}
```

Table 1-15 describes the parameters of an APIG trigger.

Table 1-15 Parameters of an APIG trigger

Parameter	Description
group_id	API group. This parameter is mandatory.
env_id	API publishing environment. This parameter is mandatory.
auth	API authentication mode. Options: NONE , IAM , and APP . This parameter is mandatory.
protocol	Access protocol. Options: HTTP and HTTPS . This parameter is mandatory.
name	API name. This parameter is mandatory.
path	API access address, which must meet the URL rules, for example, /a/b . This parameter is mandatory.
match_mode	Match mode. Currently, only the prefix match mode (corresponding to SWA) is supported. This parameter is mandatory.

Parameter	Description
req_method	API request method, which is of enumerated type. Options: GET , POST , and PUT . This parameter is mandatory.
backend_type	Backend type, which must be set to FUNCTION . This parameter is mandatory.
type	API type. Currently, only 1 is supported, indicating open API. This parameter is mandatory.
sl_domain	Subdomain name. This parameter is mandatory.
instance_id	Instance ID. This parameter is mandatory when trigger_type_code is set to DEDICATEDGATEWAY or APIC .

- The data of a timer trigger is as follows:

```
{
  "name": "string",
  "schedule_type": "string",
  "schedule": "string",
  "user_event": "string"
}
```

Table 1-16 describes the parameters of a timer trigger.

Table 1-16 Parameters of a timer trigger

Parameter	Description
name	Trigger name. This parameter is mandatory.
schedule_type	Schedule type. Options: Rate or Cron . This parameter is mandatory.
schedule	Schedule setting, which varies depending on the schedule type you choose. This parameter is mandatory. When schedule_type is set to Rate , add unit m, h, or d behind a rate, for example, 3m for 3 minutes.
user_event	Additional information for calling a function. This parameter is optional.

- The data of a DDS trigger is as follows:

```
{
  "instance_id": "string",
  "collection_name": "string",
  "db_name": "string",
  "db_password": string,
  "batch_size": int,
}
```

Table 1-17 Parameters of a DDS trigger

Parameter	Description
instance_id	DB instance ID.
collection_name	Collection name.
db_name	Database name.
db_password	Password for logging in to the database.
batch_size	Batch size.

- The data of a Kafka trigger is as follows:

```
{
  "instance_id": "string",
  "topic_id": "[]string",
  "kafka_user": "string",
  "kafka_password": "string",
  "kafka_ssl_enable": string,
  "batch_size": int,
}
```

Table 1-18 Parameters of a Kafka trigger

Parameter	Description
instance_id	Kafka instance ID.
topic_id	Topic ID.
kafka_user	Username.
kafka_password	User password.
kafka_ssl_enable	Whether to enable SSL authentication. If SSL authentication is enabled, the kafka_user and kafka_password fields are mandatory.
batch_size	Batch size.

2 API Overview

FunctionGraph provides developers and partners with open APIs for development, deployment, hosting, and O&M, helping users quickly implement service innovations at low costs and shorten the rollout period of applications.

FunctionGraph provides the following types of APIs:

Table 2-1 API overview

Type	Description
Function Invocation	Execute functions synchronously or asynchronously and return reserved instance IDs.
Function Quotas	Query quotas.
Dependencies	Create, delete, query, and update dependencies.
Test Events	Create, delete, query, and update test events.
Function Tracing	Query and modify tracing configuration.
Function Lifecycle Management	Create and delete functions.
Versions and Aliases	Create and delete function versions and aliases.
Function Metrics	Query function statistics, top functions for a specified metric, and metrics in a specified period.
Function Logs	Query a function's log group and log stream, and enable log reporting to LTS.
Reserved Instances	Query reserved instances and change their number.
Function Import and Export	Import and export functions.

Type	Description
Function Triggers	Create, delete, and update triggers.
Function Flows	Query, delete, create, and stop function flows.
Asynchronous Execution Notification	Query, delete, and configure asynchronous invocation notification settings.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the Identity and Access Management (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:

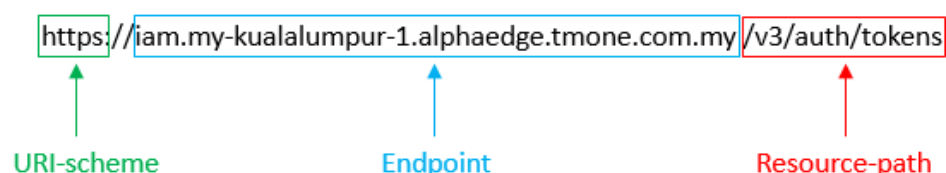
{URI-scheme} :// {Endpoint} / {resource-path} ? {query-string}

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

- **URI-scheme:** Protocol used to transmit requests. All APIs use HTTPS.
- **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.

For example, to obtain an IAM token in the region, obtain the endpoint of IAM () for this region and the resource-path (**/v3/auth/tokens**) in the URI of the API used to . Then, construct the URI as follows:

Figure 3-1 Example URI



 NOTE

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

Request Methods

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

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

For example, in the case of the API used to , the request method is POST. The request is as follows:

Request Header

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

Common request header fields are as follows:

- **Content-Type**: specifies the request body type or format. This field is mandatory and its default value is **application/json**. Other values of this field will be provided for specific APIs if any.
- **X-Auth-Token**: specifies a user token only for token-based API authentication. The user token is a response to the API used to . This API is the only one that does not require authentication.

 NOTE

In addition to supporting token-based authentication, FunctionGraph 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 details, see [AK/SK-based Authentication](#).

- **X-Project-ID**: specifies a subproject ID. This parameter is mandatory only in multi-project scenarios.
- **X-Domain-ID**: specifies an account ID.

The API used to 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:

Request Body

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

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

In the case of the API used to **obtain a user token**, the request parameters and parameter description can be obtained from the API request. The following provides an example request with the body included. Replace *username*, *domainname*, ******* (login password), and *xxxxxxxxxxxxxxxxxxxx* (project name) with the actual values.

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](#).

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

3.2 Authentication

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

- Token-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK.

Token-based Authentication

NOTE

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

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

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": "xxxxxxxx"
      }
    }
  }
}
```

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

AK/SK-based Authentication

NOTE

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

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

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

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

NOTICE

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

3.3 Response

Status Code

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

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

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

Response Header

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

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

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

```

connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5

x-subject-token
→ MIIYXQYJKoZihrvNAQcCoIIYTCCEGoCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOnsiZXhwaXlcl9hdCl6j6jwMTktMDItMTNUMC
fj3KJsb6YgKnpVNRbW2eZ5eb78SZOkjACgkqj0i==+k9-
xHRCE9I87o+k9-
j+CMZSEB7bUgd5Uj6eRASX11jipPEGA270g1Fruool6jggfFKNPQuFSOU8+uSttVwRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CM8nOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-qPNFYjECKnoH3HRozv0vN--n5d6Nbxg==

x-xss-protection → 1; mode=block;

```

Response Body

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

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

```

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

```

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

```
{  
  "error_code": "FGS.0111",  
  "error_msg": "xxxxxxxx"  
}
```

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

4 Examples

4.1 Example 1: Using a Timer Trigger to Periodically Download Files from an OBS Bucket

Scenario

This example guides you through the procedure for creating a Python 2.7 function and associating a timer trigger with it to periodically download files from an OBS bucket.

For details about how to call APIs, see [Calling APIs](#).

Prerequisites

- You have uploaded files to OBS and have recorded the file names, the bucket in which the files are stored, and the address of the bucket.
- You have created an agency in IAM to allow FunctionGraph to access OBS and have recorded the name of the agency.

Overall Procedure

Create a FunctionGraph function and associate a timer trigger with it to periodically download files from an OBS bucket. The procedure is as follows:

1. **Creating a Function:** Create a function for downloading files from OBS.
2. **Modifying the Metadata of a Function:** Modify the OBS address, bucket name, and file name in the function configurations.
3. **Executing a Function Synchronously:** Verify whether the function can successfully download files from the OBS bucket.
4. **Creating a Trigger:** Create a timer trigger for the function to periodically download files from OBS.

Step 1: Create a Function for Downloading Files from OBS

URI: POST /v2/{project_id}/fgs/functions

For details about the API, see [Creating a Function](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions
{
  "code_filename": "index.zip",
  "code_type": "inline",
  "func_code": {
    "file":
      "UESDBAoAAAAIABESwIDHSM8cOQYAAJYRAAAIAAAAaW5kZXgucHm9V91v2zYQf9dfcXAeLKeKkrYZNg
      TQQ9JvpG2CJsOwJ4GWajuLRGok5VT963dHUUpZsJ82GofVDQh2Pd8e7333wAl4Oj6BQpZDLM2jt4ug3ok
      QH8MeKS9CtlLgDdiUMGFY3FSdmDIYBKwpuDFxd3CTQqRbq1lgwDS/
      EogMmgS25LDq4F3YfY0rNWQWGG67UoeH+04boWxgglDcRKA7NQcYZS3BkU/
      ADjLI0WwVtVoRZ2quUmLSnBpaZn7JYi6UdrC1dy8coRt/hqtr0y65DZX8794YfMVzYXX/
      bF33F45+ntHfuqw5n+33Ni90188Pq005l+qUwUfa3WaFm+EBXPG4aXzZCe0iothZas5nH/
      rTmraBHnnj2fzTA652VpMCoYDS8KnBSMiuFMFyv3aeg7aMUA6vKoYdp2UIm5Zlpwk0Zol9fCmobLMt4zb
      BZFt28+Xedfrq5u8+vz2/do6eTY1s3xBPzvAF6re1kphgYxolPgFehhQ/
      0OOXgn9InSXRppvsQwopRpsRKSTWH7dwC3dAANRR9YDEupuAGpLEjOSxI4xzuvmfZi5FMlQqWqINyAj
      NwTZt+2srCo451mzSogiDuc4n053pCj9lvdctj7/WjtYimZ9QZM16c/+e40Bxmcrn6Eh34/
      WjuCKTe2qx72/g/
      WfkD1gZWlpmqCzneVQx5JdMnq6Ne07lb3RaXaEqmqng7ArpmQQOklauHSjVAdqLgKvxxvuiCVfsLaysGZV
      y9MI0/M9mljhLcKpRtAtQk5Yhb2YrzHVEiwu0vKvndYwkdZKLZe4mfVkJYfH52ewaO/
      Ayx3Fm2lFEQJgCvLJNroZlBqO/
      KBI2/7ZKQP76VfM8vi6YhIOnOHjC4u2uKO28eObBims7F9byRFLzwxdufcil8L4ae9KVtgWTVXVlxAe9DNUFw
      0w9CKsIL9PeFCy2n0ncd4wJLbtrHjPle5oTWGB74l9dA0wcT2pRV
      +TsEluRV9DgZ0qiVD22L1B9ilcwp1xrpePJNBU9jsCywOVaaCVrqlrrNjsXiGIB/mE/UfWopltRGqOpUXC/
      5QWeR/9iQ2dYUxYURbGJ2Ab0D7GFzRarQXFZt7tCCeKpM8XZlnGi3QgBpRhEOBcVoptUdCsS6KNQ
      +Mfbqko4xIhVyoGCaHh4eD/
      WT0GUzg2UCa7Z3pj4RLngX28Ik3jnYzyHJqmkx3cH7pjL253B54UjjfzDcYWhoCsMOVI6YP55+89exuG5vn
      bv
      +Sd3Hlp539G15gIP1+iy6SgW134kAV1o9B6S1DcJbb5iKYC0aelmrrbgleLCGhVt1hAV0xg5y4UM4TmGYwg
      tJmonsQc9HbbQ3cEhom1AdtkaPUCEstlsqbpu5LB5VtGRATTJCRIL+xu+7We/
      +uBeTwYuTExeEEeH5bAifqNHw3Ihv1OQKVuUDIR5DrudXrW1aaqSTW8wBP1KOC55pnTMxBVv1m6sID
      pKUNE4R4s8h2up40DZDyqQuLya7KHEZ4dXuRdGTHRwn3EeLVW/fzqy3cAh4CBtPHaCG
      +d0ZknoaenM8Rlj3QoqDsQ6Cf3ER1HthPPMw+cWx3J8G6DTNy+E2GM2v
      +NdLsrM8bs0zleNzNwl0U7XFSb3A2Xm/yVuNOA629izmfyzSqBYRTKhmUCfjLO/L/
      EmCpHUfiWyt4yAYew2Eloz97dtTsKz5ErO7yQrXSzr8kYEXNMZ7Zi5OQNR/V
      +F0yTolAilORwtnfdg3PpvggqETBqAwffxPNNMwpuF/hENYi0DLqaAl2xQbDYvxXBP/
      qV7BixXMSqFUV5PTiS2EaZQqP3tnBKuDeqf9JFfqQ3o0fSneq4Z/821VBv/
      eizWNmNkU7ysWOb73xELwEnMKm10wB+mtfGynZrZYDZ8SFyNa32wL6TcWX3b1B/
      mJ14hotMSF2W1TAhB0r/
      3LcOcB9qxHduSzzDTE41FNHSTkxJAK2U5W4C72l2yTH31+krpsrPjHy93EJrtYyyB4OWsd3fywMWzfVllk
      psF4il1702Q3HXPYJq4RWDsCw2xEzn15XlG3qY6sVOI+xuGuv2Us/
      v90HtesapoK2a5GUowTpChauFr4fli9B7fBfpnPDprSzupm8ExpD95cTq+BTFF/
      wBQSwEChgMKAACAAREsJQx0jPHDKGAACWEQAACAAAAAAAAAAAAAAAAAwIAAAAAaW5kZXgucHl
      QSUwUGAAAAAAEAQA2AAAAAXwYAAAAA"
  },
  "func_name": "download_file_from_obs",
  "handler": "index.handler",
  "memory_size": 256,
  "package": "default",
  "runtime": "Python2.7",
  "timeout": 30
}
```

- Example response

```
{
  "func_urn": "urn:fss:{project_name}:{project_id}:function:default:download_file_from_obs:latest",
  "func_name": "download_file_from_obs",
  "domain_id": "89fexxxd636",
  "namespace": "{project_id}",
  "project_name": "xxx",
  "package": "default",
  "runtime": "Python2.7",
  "timeout": 30,
  "handler": "index.handler",
  "memory_size": 256,
  "cpu": 400,
  "code_type": "inline",
  "code_filename": "index.zip",
}
```

```
"code_size": 1707,
"digest":
"68891a6778848a78bd37a8c0798c91d75a5c87aee6e901303047a52edf05bf2170aac4149d79b3f6a40ef
e78406a83bf6d8683e7b25da4f0c07e7493aa4ccdc",
"version": "latest",
"image_name": "latest-200603162219@zr2ym",
"last_modified": "2020-06-03T16:22:19+08:00",
"strategy_config": {
"concurrency": -1
},
"StrategyConfig": {},
"enterprise_project_id": "0"
}
```

Record the URN of the function, that is, the value of **func_urn** in the response.

Step 2: Modify the OBS Address, Bucket Name, and File Name in the Function Configurations

URI: PUT /v2/{project_id}/fgs/functions/{function_urn}/config

For details about the API, see [Modifying the Metadata of a Function](#).

- Example request

PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/config

```
{
"func_name": "download_file_from_obs",
"handler": "index.handler",
"memory_size": 256,
"runtime": "Python2.7",
"timeout": 30,
"user_data": "{\"obs_address\":\"obs.example.example.com\",\"srcBucket\":\"xxx\",\"srcObjName\": \"xxx\"}",
"xrole": "xxx"
}
```

- **function_urn**: function URN recorded in [Step 1: Create a Function for Downloading Files from OBS](#)
- **obs_address**: OBS address
- **srcBucket**: name of an OBS bucket
- **srcObjName**: file name
- **xrole**: agency name

- Example response

```
{
"func_urn": "urn:fss:{project_name}:{project_id}:function:default:download_file_from_obs:latest",
"func_name": "download_file_from_obs",
"domain_id": "89fexxxd636",
"namespace": "{project_id}",
"project_name": "xxx",
"package": "default",
"runtime": "Python2.7",
"timeout": 30,
"handler": "index.handler",
"memory_size": 256,
"cpu": 400,
"code_type": "inline",
"code_filename": "index.zip",
"code_size": 1707,
"user_data": "{\"obs_address\":\"obs.example.example.com\",\"srcBucket\":\"xxx\",\"srcObjName\": \"xxx\"}",
"digest":
"68891a6778848a78bd37a8c0798c91d75a5c87aee6e901303047a52edf05bf2170aac4149d79b3f6a40ef
e78406a83bf6d8683e7b25da4f0c07e7493aa4ccdc",
}
```



```
"version": "latest",
"image_name": "latest-200603165355@varrp",
"xrole": "xxx",
"app_xrole": "xxx",
"last_modified": "2020-06-03T17:25:03+08:00",
"strategy_config": {
  "concurrency": -1
},
"StrategyConfig": {},
"enterprise_project_id": "0"
}
```

Step 3: Test the Function

URI: POST /v2/{project_id}/fgs/functions/{function_urn}/invocations

For details about the API, see [Executing a Function Synchronously](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/invocations
{
  "message": "download file"
}
```

function_urn indicates the function URN recorded in [Step 1: Create a Function for Downloading Files from OBS](#).

- Example response

```
"The object downloaded successfully from OBS, and the size is 14 KB"
```

Step 4: Create a Timer Trigger to Periodically Download Files from OBS

URI: POST /v2/{project_id}/fgs/triggers/{function_urn}

For details about the API, see [Creating a Trigger](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}
{
  "event_data": {
    "name": "Timer-download",
    "schedule_type": "Rate",
    "schedule": "1d"
  },
  "event_type_code": "MessageCreated",
  "trigger_status": "ACTIVE",
  "trigger_type_code": "TIMER"
}
```

function_urn indicates the function URN recorded in [Step 1: Create a Function for Downloading Files from OBS](#).

The preceding example request is used to download files from the specified OBS bucket every day.

- Example response

```
{
  "trigger_id": "461bbe95-c85b-4dc9-a306-9701e77f1d66",
  "trigger_type_code": "TIMER",
  "trigger_status": "ACTIVE",
  "event_data": {
    "name": "Timer-download",
    "schedule": "1d",
    "schedule_type": "Rate"
  },
  "last_updated_time": "2020-06-04T10:33:30+08:00",
  "created_time": "2020-06-04T10:33:30+08:00"
}
```

4.2 Example 2: Using an APIG Trigger to Obtain a Static Web Page

Scenario

This example guides you through the procedure for creating a Python 2.7 function and associating an APIG trigger with it to obtain a static web page.

For details about how to call APIs, see [Calling APIs](#).

Prerequisites

You have created an API group in API Gateway, and have recorded the ID and subdomain name of the API group.

Overall Procedure

Create a FunctionGraph function and associate an APIG trigger with it to obtain a static web page. The procedure is as follows:

1. **Creating a Function:** Create a function to return a static web page.
2. **Creating a Trigger:** Create an APIG trigger.
3. Call the API of the APIG trigger to obtain a static page.

Step 1: Create a Function to Return a Static Web Page

URI: POST /v2/{project_id}/fgs/functions

For details about the API, see [Creating a Function](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions
{
  "code_filename": "index.zip",
  "code_type": "inline",
  "func_code": {
    "file":
      "UESDBAoAAAAIABY7vFD7lxPkAgMAALoHAAAIAAAAaW5kZXgucHndVdtu00AQfc9XrMKDExQ7zqW50
      VYqFZRKIFUQhFBVobU9iU1tr9mdbRRkqSHwNH8aXMLtxrgoS8ISlosg7c
      +bszNnjzRPmPnVZKKIkn440TtyBCVQcx6mMY2ATkaZiRjmWKMZzdFzfcXgAXJkYsI4UzwrUoLpPMRE5B
      77KDQLCYigkGFMVescCxZMQQ0IDokcl4kruVYeyIGI5TU66VXqTxWGKvGiMUbwFhE1RGrXr0YVxsmXH
      CMTaBpNmVgQK1uEzdc8gwQpCKIYTFxKeYLU7HCUnBp8V80yMU7INTYsbKclqaKfjclMfBoDzR3FfKpxZLz
      bCMUfiXomWlz7GU5tNXw3oM5hBrBpfE9rdwZod22xzP
      +Ver8prxQZOvq9wqkezELTQxHqrkrCb1wjSBN32v5rPZa8zrLp/NPIG22fN8fbJsMRGTH/
      fHtO31X2kigaRveihxhjtV+j3Zfgq+t7IHU7XT6nV479NthP
      +r328Mh9Af9QSuAoBu01kU016qg2wq6J8A7bt8PTtxWC3pu0A8itzcMTjiHgEiGzBNL67gkK4QkZ6n102cl
      8vVzwBX0upVKBBMW8zxKQdasXRpkXztMfWQbKOgckTI02CEoxcoZ2ESKzFiOvCeT6RSKU7FwlItVnmQvI
      XIFyWXBbCzlr1vnaP+cO5unV24c2dZYB5Cgb9kdKh9rIMsN08mBwBCxjilzpbALN
      +WGCJ43CTMx6FjQ60uRQTOiLV9v7GfTRzK9uLnF5xiAgzLhoOQKWXndEBuT1NaxTziU7K3vM6V2jnp6xM
      OZSAZ7Za6O6V7o82MI4kfhXZ+gFvS7YhmrOqaE6P41b5x8gJecDQ8E0TfqqvDauJc/
      i0yYBTu225059y73ckRm1zk1hvEhnhart6IZfqQ3pMb1NzY7eZvkP6c2Llk1CbqRomtb+UufH6j3Yu
      +CBpxqqy99VcVeNjYoKtnKVfv7fHXqTAmXMTaNQ6hDtH5iWKZslGDN7QbBiczfsmezMEDT2QObWP/
      TzgdD1n1BLAQleAwoAAAAIABY7vFD7lxPkAgMAALoHAAAIAAAAAAAAAAAAAAAAADzAgAAAAAbpmRleC5
      weVBLBQYAAAAAAQABADYAAAAoAwAAAA="
  },
  "func_name": "get_html",
  "handler": "index.handler",
}
```

```
"memory_size": 256,  
"package": "default",  
"runtime": "Python2.7",  
"timeout": 5  
}
```

- Example response

```
{  
  "func_urn": "urn:fss:{project_name}:{project_id}:function:default:get_html:latest",  
  "func_name": "get_html",  
  "domain_id": "89fexxxd636",  
  "namespace": "{project_id}",  
  "project_name": "xxx",  
  "package": "default",  
  "runtime": "Python2.7",  
  "timeout": 5,  
  "handler": "index.handler",  
  "memory_size": 256,  
  "cpu": 400,  
  "code_type": "inline",  
  "code_filename": "index.zip",  
  "code_size": 884,  
  "digest":  
  "b08fef5e97dd130037978db07f0e9109aa43a191517cd1196bcab822f17dddcf37f7506a15691177962f98  
  03ba6d170a1c87aafb4fa1b9f0d07f9415642b26d2",  
  "version": "latest",  
  "image_name": "latest-200604105808@we0qo",  
  "last_modified": "2020-06-04T10:58:08+08:00",  
  "strategy_config": {  
    "concurrency": -1  
  },  
  "StrategyConfig": {},  
  "enterprise_project_id": "0"  
}
```

Record the URN of the function, that is, the value of **func_urn** in the response.

Step 2: Create an APIG Trigger

URI: POST /v2/{project_id}/fgs/triggers/{function_urn}

For details about the API, see [Creating a Trigger](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}  
{  
  "event_data": {  
    "group_id": "a9ad0d5df4d7475c9bc35a7c17d89304",  
    "env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",  
    "auth": "NONE",  
    "protocol": "HTTP",  
    "name": "API_GetHtml",  
    "path": "/test",  
    "match_mode": "SWA",  
    "req_method": "ANY",  
    "backend_type": "FUNCTION",  
    "sl_domain": "a9ad0d5df4d7475c9bc35a7c17d89304.apig.xxx.xxxapis.com",  
    "type": 1,  
    "env_name": "RELEASE"  
  },  
  "event_type_code": "APICreated",  
  "trigger_status": "ACTIVE",  
  "trigger_type_code": "APIG"  
}
```

- **function_urn**: function URN recorded in [Step 1: Create a Function to Return a Static Web Page](#)

- **group_id**: API group ID
- **sl_domain**: subdomain name that API Gateway allocates to the API group

- Example response

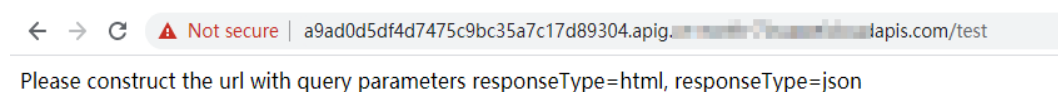
```
{
  "trigger_id": "1b3ec74b86454aa39001a9f89cc70ee2",
  "trigger_type_code": "APIG",
  "trigger_status": "ACTIVE",
  "event_data": {
    "api_id": "cbc698153d1f4265bdd8384b5cf6e581",
    "api_name": "API_GetHtml",
    "auth": "NONE",
    "env_id": "",
    "env_name": "",
    "func_info": {
      "function_urn": "urn:fss:{project_name}:{project_id}:function:default:get_html",
      "invocation_type": "sync",
      "timeout": 5000,
      "version": "latest"
    },
    "group_id": "a9ad0d5df4d7475c9bc35a7c17d89304",
    "group_name": "APIGroup_gethtml",
    "invoke_url": "http://a9ad0d5df4d7475c9bc35a7c17d89304.apig.xxx.xxxapis.com/test",
    "match_mode": "SWA",
    "name": "API_GetHtml",
    "path": "/test",
    "protocol": "HTTP",
    "req_method": "ANY",
    "triggerid": "1b3ec74b86454aa39001a9f89cc70ee2",
    "type": 1
  },
  "last_updated_time": "2020-06-04T17:14:32+08:00",
  "created_time": "2020-06-04T17:14:32+08:00"
}
```

Record the value of **invoke_url**.

Step 3: Call the API of the APIG Trigger to Obtain a Static Web Page

Enter the value of **invoke_url** in the address bar of a browser to obtain a static web page.

Figure 4-1 Calling the API



4.3 Example 3: Creating a Function by Uploading Code to an OBS Bucket

Scenario

This example guides you through the procedure for uploading local code to an Object Storage Service (OBS) bucket and creating a Python 2.7 function using the link URL of the OBS bucket.

For details about how to call APIs, see [Calling APIs](#).

Prerequisites

An OBS bucket has been created.

Overall Procedure

After writing function code in your local environment, upload the code file to an OBS bucket and use the link URL of the OBS bucket to create a function. The procedure is as follows:

1. Write code in your local environment to create a function project.
2. Compress the code file into a ZIP package, upload the package to the OBS bucket, and record the link URL of this bucket.
3. Call the API in [Creating a Function](#) to create a function using the link URL of the OBS bucket.

Step 1: Create a Function Project

1. Write code for printing text **helloworld**.

Open a text editor, compile a HelloWorld function, and save the code file as **helloworld.py**. The code is as follows:

```
def printhello():  
    print 'Hello world!'
```

2. Define a FunctionGraph function.

Open a text editor, define a function, and save the function file as **index.py** under the same directory as the **helloworld.py** file. The function code is as follows:

```
import json  
import helloworld  
  
def handler (event, context):  
    output =json.dumps(event)  
    helloworld.printhello()  
    return output
```

Step 2: Upload the Project to an OBS Bucket

1. In the function project, select the **helloworld.py** and **index.py** files and compress them into **fss_examples_python2.7.zip**.
2. Upload the **fss_examples_python2.7.zip** package to the OBS bucket and record the link URL of the OBS bucket.

Step 3: Call the Function Creation API to Create a Function Using the Link URL of the OBS Bucket

URI: POST /v2/{project_id}/fgs/functions

For details about the API, see [Creating a Function](#).

- Example request

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions  
{  
  "code_type": "obs",  
  "code_url": "https://test.obs.example.example.com/fss_examples_python2.7.zip",  
  "func_name": "create_function_from_obs",
```

```
"handler": "index.handler",
"memory_size": 256,
"package": "default",
"runtime": "Python2.7",
"timeout": 30
}
```

`code_url` indicates the link URL of the OBS bucket recorded in [2](#).

- Example response

```
{
  "func_urn": "urn:fss:{project_name}:{project_id}:function:default:create_function_from_obs:latest",
  "func_name": "create_function_from_obs",
  "domain_id": "0503xxxa960",
  "namespace": "{project_id}",
  "project_name": "xxx",
  "package": "default",
  "runtime": "Python2.7",
  "timeout": 30,
  "handler": "index.handler",
  "memory_size": 256,
  "cpu": 400,
  "code_type": "obs",
  "code_url": "https://test.obs.example.example.com/fss_examples_python2.7.zip",
  "code_filename": "fss_examples_python2.7.zip",
  "code_size": 436,
  "digest":
    "3af770ada27514564b1a20d964cba4b35f432fa40f9fc4f4f7c1f0d2f42eac6cb4db1358c195235966b05f6
    6b4664e7bf31c3f384a9066b3d1fcc3e96b4c3f65",
  "version": "latest",
  "image_name": "latest-200619100734@gjf4p",
  "last_modified": "2020-06-19T10:07:34+08:00",
  "strategy_config": {
    "concurrency": -1
  },
  "StrategyConfig": {},
  "enterprise_project_id": "0"
}
```

4.4 Example 4: Using a Function to Invoke a Subfunction

Scenario

This section uses Python as an example to describe how to invoke a subfunction by using a function.

For details about how to call APIs, see [Calling APIs](#).

Prerequisites

An agency with the **FunctionGraph Administrator** or **Tenant Administrator** permission has been created.

Overall Procedure

1. Create a subfunction.
2. Create a function.
3. Use the function to invoke the subfunction.

Step 1: Create a Subfunction

1. Create a subfunction on the console. Set parameters by referring to [Figure 4-2](#) and retain the default values for other parameters.

Figure 4-2 Setting parameters

Basic Information

* Function Type

Event Function HTTP Function

* Region

Regions are geographic areas isolated from each other. Resources are region-specific and cannot be used across regions through internal network connections. For low network latency and quick resource access, select the nearest region.

* Function Name

subunction

Enter 1 to 60 characters, starting with a letter and ending with a letter or digit. Only letters, digits, hyphens (-), and underscores (_) are allowed.

Agency ?

Use no agency Create Agency

* Enterprise Project ?

default View Enterprise Project

Runtime ?

Python 2.7

Step 2: Create a Function

1. Create a function on the console. Select an agency with the **FunctionGraph Administrator** or **Tenant Administrator** permission. In addition, set parameters as shown in [Figure 4-3](#) and retain the default values for other parameters.

Figure 4-3 Setting parameters

Basic Information

* Function Type

Event Function HTTP Function

* Region

Regions are geographic areas isolated from each other. Resources are region-specific and cannot be used across regions through internal network connections. For low network latency and quick resource access, select the nearest region.

* Function Name

ParentFunction

Enter 1 to 60 characters, starting with a letter and ending with a letter or digit. Only letters, digits, hyphens (-), and underscores (_) are allowed.

Agency ?

function-admin Create Agency

* Enterprise Project ?

default View Enterprise Project

Runtime ?

Python 3.6

2. On the **Code** tab page, edit the code. The sample code is as follows:

```
import json
import requests
def handler(event, context):
    token = context.getToken()
    project_id = context.getProjectID()
    urn = 'urn:fss:xx-xxxx-x:xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx:function:xxx:subfunction:latest' #
Subfunction URN, which can be queried on the right of the topology on the subfunction details page.
    url = 'https://functiongraph.{region_id}.{external_global_domain_name}/v2/%s/fgs/functions/%s/
invocations' % (project_id,urn)
    headers = {
        "x-auth-token": token,
        "content-type": 'application/json'
    }
    body = {"k":"v"}
    resp = requests.post(url, json=body, headers=headers, verify=False)
    print(resp.text)
    return {
        "statusCode": 200,
        "isBase64Encoded": False,
        "body": json.dumps(event),
        "headers": {
            "Content-Type": "application/json"
        }
    }
```


Step 3: Use the Function to Invoke the Subfunction

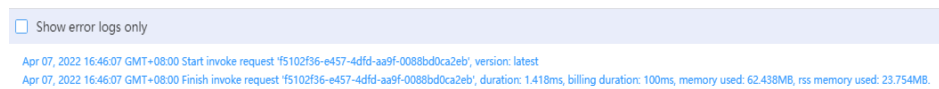
1. On the function details page, click **Test** to invoke the function.
2. View the execution result.
 - The execution result of the function is **Success** and **200** is returned.

Figure 4-4 Function execution record



- The **Logs** tab page shows details about subfunction invocation.

Figure 4-5 Subfunction execution record



5 Extension and OpenTelemetry APIs

5.1 Extension APIs

5.1.1 Introduction

Extension APIs integrate your FunctionGraph functions with monitoring, observability, security, and supervision tools for control in all phases of the function lifecycle. For example, diagnostic information is collected before, during, and after function invocation; your code is automatically checked without changing the code; the configuration is obtained before function invocation; alarms are sent through the security agent; and telemetry data is asynchronously sent to a custom destination.

Extensions run as independent processes in the function execution environment. You can write extensions using languages different from those of your functions. Compiled languages are recommended. In this case, an extension is an independent binary file and compatible with the supported runtimes. You can also use a non-compiled language that is compatible with the runtime of your function.

NOTE

- HTTP and event functions support extensions, while functions using custom images do not.
- Add an extension to a function by making the extension a dependency.

5.1.2 Procedure

- Step 1** Create a function. For details, see the function creation procedure of different languages in the *FunctionGraph Developer Guide*.
- Step 2** Create a dependency with the desired extension and add the dependency to the function.
- Step 3** Check that the extension process is started when the function is invoked.

----End

5.1.3 Creating an Extension Dependency

Prepare a ZIP package to compile and start the extension process.

This package must contain a folder named **extension** that contains an .sh script file prefixed with **extension** for starting the extension process. The following is an example of the package's file structure:

extension -

extensionDemo.sh

test.py

Download [extension.zip](#) to get the code.

The following table lists the paths for different languages in **extensionDemo.sh**.

Table 5-1 Paths for different languages

Language	Path
Java 8	/opt/function/runtime/java8/rtsp/jre/bin/java
Java 11	/opt/function/runtime/java11/rtsp/jre/bin/java
Node.js 6	/opt/function/runtime/nodejs6.10/rtsp/nodejs/bin/node
Node.js 8	/opt/function/runtime/nodejs8.10/rtsp/nodejs/bin/node
Node.js 10	/opt/function/runtime/nodejs10.16/rtsp/nodejs/bin/node
Node.js 12	/opt/function/runtime/nodejs12.13/rtsp/nodejs/bin/node
Node.js 14	/opt/function/runtime/nodejs14.18/rtsp/nodejs/bin/node
Python 2.7	/opt/function/runtime/python2.7/rtsp/python/bin/python
Python 3.6	/opt/function/runtime/python3.6/rtsp/python/bin/python3
Python 3.9	/opt/function/runtime/python3.9/rtsp/python/bin/python3
PHP 7.3	/opt/function/runtime/php7.3/rtsp/php/bin/php

5.1.4 Extension API Reference

Write an extension process with the following actions to start the extension.

1. Start an HttpClient to send a registration request to your FunctionGraph function.
2. Start an HttpServer to receive invocation requests from the function.

5.1.4.1 API Methods

Registration

http://\${EXTENSION_API_ADDR}/extension/register

Extensions deployed by processes can receive events only after the extensions have been registered with FunctionGraph. Use environment variable **EXTENSION_API_ADDR** to obtain the extension API registration address provided by FunctionGraph. For example, for Python, use the **os.getenv("EXTENSION_API_ADDR")** method to obtain the registration address.

Path

- /extension/register

Method

- POST

Request Headers

FunctionGraph-Extension-Name: Complete file name of an extension.
Mandatory: yes. Type: string.

FunctionGraph-Extension-Address: Address of the server that receives invocation events. Mandatory: yes. Type: string. Example: **127.0.0.1:8081**.

NOTE

- FunctionGraph uses the complete file name of an extension to check whether the extension has been imported for booting. The request header for registering the extension must contain the IP address and port number of the HttpServer started by the extension. Example:

```
headers = {  
  'Content-type': 'application/json',  
  'FunctionGraph-Extension-Name': "extensionDemo.sh"  
  'FunctionGraph-Extension-Address': "127.0.0.1:8011"  
}
```
- A maximum of 10 extensions are supported. The HttpServer IP address and port number must be within 127.0.0.1:8081 and 127.0.0.1:8090, and the port number of each extension must be unique.

Body Parameters

Omitted

Response Codes

200 - The response body contains the function name, function version, and handler name.

Other codes indicate errors.

Example response body

```
{  
  "functionName": "helloWorld",
```

```
"functionVersion": "$LATEST",  
"errorInfo": {  
  "errorType": "",  
  "errorMessage": ""  
}  
}
```

Invocation

http://\${FunctionGraph-Extension-Address}/extension/invoke

After registration, the created `HttpServer` listens to this path to receive function invocation events.

Path

- /extension/register

Method

- POST

Body Parameters

traceId - Request ID.

invokedFunctionUrn - Function URN.

Response Codes

200 - The response body contains the function name, function version, and handler name.

Other codes indicate errors.

Example response body

```
{  
  "traceId": "3da1f2dc-3222-475e-9205-e2e6c6318895",  
  "invokedFunctionUrn": "sn:cn:yrk:1111:function:0@test@hello:latest"  
}
```

5.1.5 Connecting to SkyWalking with an Extension

This section uses SkyWalking as an example to describe how to integrate a function with monitoring, observability, security, and supervision tools via extension APIs.

NOTE

Compiling an extension locally with a compiled language will generate a binary file. To use a non-compiled language, package and upload the required dependencies for the function, and ensure that the language is compatible with the function's runtime.

Embed the SkyWalking agent in the extension code to monitor function requests through the extension.

Sample code: [skywalking-go.zip](#)

```
func startSkywalkingAgent() {  
  r, err := reporter.NewGRPCReporter("10.174.242.117:11800", reporter.WithCDS(100))
```

```

if err != nil {
    log.Fatalf("new reporter error %v |n", err)
    return
}
defer r.Close()
tracer, err := go2sky.NewTracer("testservice", go2sky.WithReporter(r))
if err != nil {
    log.Fatalf("create tracer error %v |n", err)
    return
}
go2sky.SetGlobalTracer(tracer)
sm, err := httpPlugin.NewServerMiddleware(go2sky.GetGlobalTracer())
if err != nil {
    log.Fatalf("create server middleware error %v |n", err)
    return
}
http.HandleFunc(invokeURL, sm(RequestHandler{}).ServeHTTP)
http.ListenAndServe(currentExtensionAddr, nil)
}
    
```

Replace **10.174.242.117:11800** with your SkyWalking collector IP address and **testservice** with your service name.

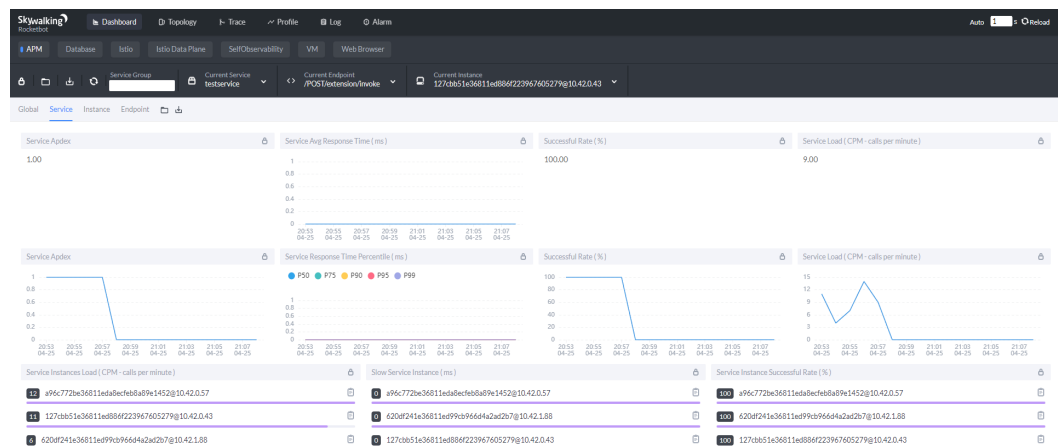
Compile the code locally to generate a binary file. Then package the binary file and the .sh script file prefixed with **extension**, and upload them as a dependency. The file structure of the extension dependency package is as follows:

extension -

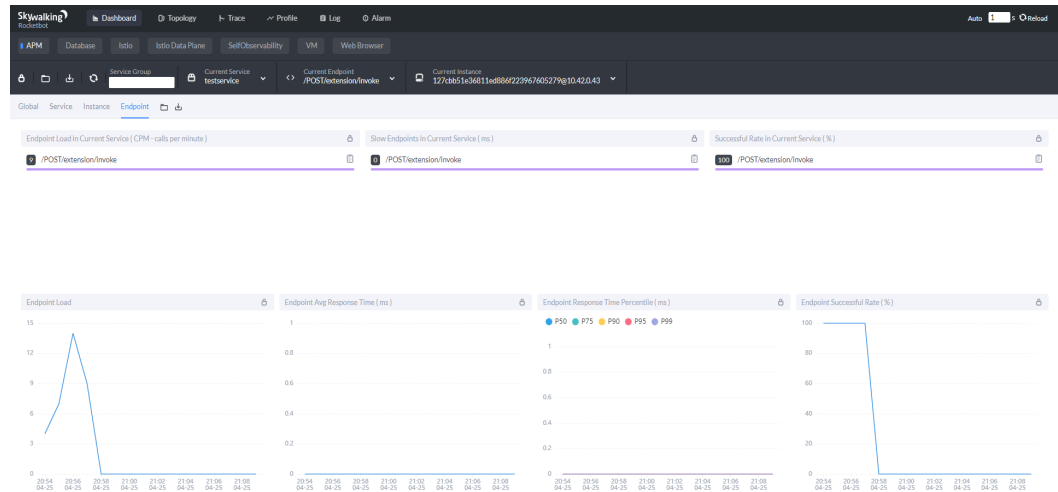
extensionDemo.sh

Extension # Generated binary file

Service page after successful connection



Endpoint page



5.2 Telemetry APIs

5.2.1 Introduction

With the OpenTelemetry APIs of FunctionGraph, extensions can receive telemetry data from FunctionGraph when functions are initialized or invoked, and collect logs generated during function and extension execution.

During execution, send a subscription request from an extension to the specified OpenTelemetry API. FunctionGraph then automatically sends all telemetry data to your extension for processing, for example, storing to OBS, writing to files, or forwarding to other observability tools.

Extensions can subscribe to three different telemetry streams using OpenTelemetry APIs:

1. Platform: Logs, metrics, and traces, which describe events and errors related to the runtime lifecycle, extension lifecycle, and function invocation.
2. Function: Custom logs generated by function code.
3. Extension: Custom logs generated by extension code.

5.2.1.1 Using OpenTelemetry APIs with an Extension

Telemetry is a special extension, and can be enabled only after the following operations are performed in the extension process:

1. Before using OpenTelemetry APIs, register them with your extension by referring to the extension API description.
2. Start an `HttpClient` on the extension to send an OpenTelemetry API registration request to FunctionGraph.
3. Create an `HttpServer` (telemetry listener) to receive telemetry data from FunctionGraph for custom processing.

 NOTE

Only one telemetry extension can be created. Similar to the extension API, the OpenTelemetry API must also be within 127.0.0.1:8081 and 127.0.0.1:8090.

Example telemetry extension: [Telemetry.zip](#)

5.2.1.2 Registering OpenTelemetry APIs

http://\${EXTENSION_API_ADDR}/telemetry

Use environment variable **EXTENSION_API_ADDR** to obtain the API registration address provided by FunctionGraph. For example, for Python, use the **os.getenv("EXTENSION_API_ADDR")** method to obtain the registration address.

Path

- /telemetry

Method

- POST

Body Parameters

```
{
  "subscriber": {
    "protocol": "POST",
    "uri": "http://127.0.0.1:{PORT}"
  },
  "types": ["platform", "function", "extension"],
}
```

 NOTE

- The request body must contain the preceding JSON fields.
- **protocol** indicates the request type. The value must be **POST**.
- **uri** indicates the URI of the telemetry listener in the extension process for receiving telemetry data from FunctionGraph. **PORT** ranges from 8081 to 8090.
- **types** indicates the event types to subscribe to. The options are **platform**, **function**, and **extension**.

Response Codes

200 - Subscription request successful.

400 - Request error with a message returned.

500 - Service error.

5.2.1.3 Processing Telemetry Data

URL: **http://localhost:{PORT}**, where **localhost** indicates the local host IP address **127.0.0.1**.

After event subscription with telemetry APIs, the extension receives telemetry data from FunctionGraph using the telemetry listener. Each POST request contains an Event object array in the body.

There are three event types you can subscribe to: platform, function, and extension.

Category	Event Type	Description
Platform events	platform	Function execution
Function logs	function	Function code logs
Extension logs	extension	Extension code logs

platform events

Category	Subtype	Meaning	Data Structure	Example
Function is being invoked.	platform.initStart	Function is being initialized.	Event: Object - name: String = platform.initStart -- Event type - startTime: String -- Start time - traceId: String -- Request ID	<pre>{ "name": "platform.initStart", "startTime": "2023-02-01T00:03:50.000Z", "traceId": "69be64a7-0233-11e8-82e4-e5d37911193e" }</pre>
	platform.start	Function is being invoked.		
	platform.restoreStart	Environment is being restored.		
Invocation completed	platform.initRuntimeDone,	Function is initialized.	Event: Object - name: String = platform.initRuntimeDone -- Event type - startTime: String -- Start time - traceId: String -- Request ID - status: String -- Request status	<pre>{ "name": "platform.initRuntimeDone", "startTime": "2023-02-01T00:03:50.000Z", "traceId": "69be64a7-0233-11e8-82e4-e5d37911193e", "status": "success", }</pre>
	platform.RuntimeDone	Function is invoked.		
	platform.restoreRuntimeDone	Environment is restored.		

Category	Subtype	Meaning	Data Structure	Example
Invocation report	platform.initReport	Initialization report	Event: Object - name: String = platform.initReport platform.report platform.restoreReport -- Event type - startTime: String -- Start time - traceId: String -- Request ID - endTime: String -- End time - status: String -- Request status - metrics: reportMetrics -- Invocation data reportMetrics: Object - durationMs: float64 -- Invocation duration - billingDurationMS: float64 -- Billed duration - memoryUsed: float64 -- Memory used - memorySize: int -- Memory size - podName: String -- Pod name	<pre>{ "name": "platform.initReport", "startTime": "2023-02-01T00:03:50.000Z", "traceId": "69be64a7-0233-11e8-82e4-e5d37911193e", "endTime": "2023-02-02T00:03:50.000Z", "status": "success", "reportMetrics": { "durationMs": 10.6, "billingDurationMS": 11, "memoryUsed": 23.4, "memorySize": 128, "podName": "pool22-300-128-fusion-64774779-4g77v" } }</pre>
	platform.report	Invocation report		
	platform.restoreReport	Environment restoration report		

function events

Type	Data Structure	Example
Function	Event: Object - name: String -- Event type - startTime: String -- Start time - logs: string -- Logs	Add [Function] to the logs to collect. Example: [Function] This is a simple log. { "name": "function", "startTime": "2023-02-01T00:03:50.000Z", "logs": "[Function]this is a simple log." }

extension events

Type	Data Structure	Example
Extension	Event: Object - name: String -- Event type - startTime: String -- Start time - logs: string -- Logs	Add [Extension] to the logs to collect. Example: [Extension] This is a simple log. { "name": "extension", "startTime": "2023-02-01T00:03:50.000Z", "logs": "[Extension]this is a simple log." }

6 APIs

6.1 Function Invocation

6.1.1 Executing a Function Synchronously

Function

This API is used to execute a function synchronously. Clients must wait for explicit responses to their requests from the function. Responses are returned only after function invocation is complete.

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/invocations

Table 6-1 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).
X-Cff-Log-Type	No	String	Options: tail (4 KB logs will be returned) and null (no logs will be returned).
X-CFF-Request-Version	No	String	Response body format. Options: v0 and v1. <ul style="list-style-type: none">v0: text format.v1: JSON format. Select this format when using an SDK.

Table 6-3 Request body parameters

Parameter	Mandatory	Type	Description
{Customized_key}	Yes	Object	Request body for executing a function.

Response Parameters

Status code: 200**Table 6-4** Response header parameters

Parameter	Type	Description
X-Cff-Invoke-Summary	String	Execution summary of the synchronous invocation.
X-Cff-Request-Id	String	Request ID of the synchronous invocation.

Parameter	Type	Description
X-Cff-Function-Log	String	User log of the synchronous invocation. Set X-Cff-Log-Type:tail in the request header. Intercept and encode the last 2,000 bytes of the log using Base64.
X-CFF-Billing-Duration	String	Billing information of the synchronous invocation.
X-Cff-Response-Version	String	Response format: v0: text format v1: JSON format
X-Func-Err-Code	String	Error code of the synchronous invocation. The value is 0 if the execution is successful.
X-Is-Func-Err	String	Indicates whether the error occurs in a user function.

Table 6-5 Response body parameters

Parameter	Type	Description
request_id	String	Request ID.
result	String	Function execution result.
log	String	Function execution log.
status	Integer	Function execution status.

Status code: 400**Table 6-6** Response body parameters

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

Status code: 401

Table 6-7 Response body parameters

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

Status code: 403**Table 6-8** Response body parameters

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

Status code: 404**Table 6-9** Response body parameters

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

Status code: 500**Table 6-10** Response body parameters

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

Status code: 503**Table 6-11** Response body parameters

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

Example Requests

Execute a function synchronously with the request parameter as a key pair ("k":"v").

```
POST /v2/{project_id}/fgs/functions/{function_urn}/invocations
{
  "k": "v"
}
```

Example Responses

Status code: 200

OK

```
{
  "result": "{\"statusCode\": 200, \"isBase64Encoded\": false, \"body\": \"\\{\\\"key\\\": \\\"value\\\"}\"",
  "headers": {"Content-Type": "application/json"},
  "log": "2022-09-20T11:43:57Z Start invoke request '1cbe80f3-3c65-475e-ad88-76ac518d386a', version: v1\nHello, World!\n\n2022-09-20T11:43:58Z Finish invoke request '1cbe80f3-3c65-475e-ad88-76ac518d386a', duration: 65.828ms, billing duration: 66ms, memory used: 21.473MB, billing memory: 128MB",
  "status": 200,
  "request_id": "1cbe80f3-3c65-475e-ad88-76ac518d386x"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request.
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.
503	Service unavailable.

Error Codes

See [Error Codes](#).

6.1.2 Executing a Function Asynchronously

Function

This API is used to execute a function asynchronously.

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/invocations-async

Table 6-12 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-13 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-14 Request body parameters

Parameter	Mandatory	Type	Description
{User defined key}	Yes	Object	Request body for executing a function asynchronously.

Response Parameters

Status code: 202

Table 6-15 Response body parameters

Parameter	Type	Description
request_id	String	Request ID.

Status code: 400**Table 6-16** Response body parameters

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

Status code: 401**Table 6-17** Response body parameters

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

Status code: 403**Table 6-18** Response body parameters

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

Status code: 404**Table 6-19** Response body parameters

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

Status code: 500**Table 6-20** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 503

Table 6-21 Response body parameters

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

Example Requests

Execute a function asynchronously with the request parameter as a key pair ("k":"v").

```
POST /v2/{project_id}/fgs/functions/{function_urn}/invocations-async
{
  "body": {
    "k": "v"
  }
}
```

Example Responses

Status code: 202

Accepted

```
{
  "request_id": "1167bf8c-87b0-43ab-8f5f-26b16c64f252"
}
```

Status Codes

Status Code	Description
202	Accepted
400	Bad request.
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Status Code	Description
503	Service unavailable.

Error Codes

See [Error Codes](#).

6.2 Function Quotas

6.2.1 Querying Tenant Quotas

Function

This API is used to query tenant quotas.

URI

GET /v2/{project_id}/fgs/quotas

Table 6-22 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-23 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-24 Response body parameters

Parameter	Type	Description
quotas	ListQuotasResult object	Quota information.

Table 6-25 ListQuotasResult

Parameter	Type	Description
resources	Array of Resources objects	Quota list.

Table 6-26 Resources

Parameter	Type	Description
quota	Integer	Function quota.
used	Integer	Used quota.

Parameter	Type	Description
type	String	Resource type. Enumeration values: <ul style="list-style-type: none"> • fgs_func_scale_down_timeout:Release time of idle function instances in FunctionGraph v1. • fgs_func_occurs:Indicates instance quota for functions in FunctionGraph v1 and reserved instance quota for functions in FunctionGraph v2. • fgs_func_pat_idle_time:Release time of idle PAT in VPC function. • fgs_func_num:User function quantity quota. • fgs_func_code_size:Total code size quota of user functions. • fgs_workflow_num:Function flow quantity quota. • fgs_on_demand_instance_limit:Maximum number of instances per function in FunctionGraph v2. • fgs_func_qos_limit:Instance quantity quota of user functions.
unit	String	Resource unit. For fgs_func_code_size, the unit is MB. In other scenarios, there is no unit.

Status code: 400

Table 6-27 Response body parameters

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

Status code: 401

Table 6-28 Response body parameters

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

Status code: 403

Table 6-29 Response body parameters

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

Status code: 500

Table 6-30 Response body parameters

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

Example Requests

Query quotas.

```
GET /v2/{project_id}/fgs/quotas
```

Example Responses

Status code: 200

Query successful.

```
{
  "quotas" : {
    "resources" : [ {
      "quota" : 60,
      "used" : 3,
      "type" : "fgs_func_scale_down_timeout"
    }, {
      "quota" : 100,
      "used" : 22,
      "type" : "fgs_func_occurs"
    }, {
      "quota" : 100,
      "used" : 22,
      "type" : "fgs_func_pat_idle_time"
    }, {
      "quota" : 100,
      "used" : 22,
      "type" : "fgs_func_num"
    }, {
      "quota" : 10240,
      "used" : 22,
      "type" : "fgs_func_code_size",
      "unit" : "MB"
    }
  ]
}
```

```
}, {  
  "quota" : 512,  
  "used" : 22,  
  "type" : "fgs_workflow_num"  
}]  
}  
}
```

Status Codes

Status Code	Description
200	Query successful.
400	Bad request.
401	Unauthorized.
403	Forbidden.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3 Dependencies

6.3.1 Querying Dependencies

Function

This API is used to query all dependencies.

URI

GET /v2/{project_id}/fgs/dependencies

Table 6-31 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-32 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time. Default value: 0.
maxitems	No	String	Maximum number of items to return in a request.
ispublic	No	String	Whether a dependency is public.
dependency_type	No	String	Dependency type. Options: public, private, and all. Default value: all.
runtime	No	String	Environment in which a FunctionGraph function is executed. Options: <ul style="list-style-type: none">• Python 2.7• Python 3.6• Python 3.9• Go 1.8• Go 1.x• Java 8• Java 11• Node.js 6.10• Node.js 8.10• Node.js 10.16• Node.js 12.13• Node.js 14.18• C# (.NET Core 2.0)• C# (.NET Core 2.1)• C# (.NET Core 3.1)• Custom• PHP 7.3• HTTP
name	No	String	Dependence name.
limit	No	String	Maximum number of dependencies that can be obtained in a query. Default value: 400.

Request Parameters

Table 6-33 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-34** Response body parameters

Parameter	Type	Description
dependencies	Array of ListDependenciesResult objects	Dependency list.
next_marker	Long	Next read location.
count	Long	Total number of dependencies.

Table 6-35 ListDependenciesResult

Parameter	Type	Description
id	String	Dependency ID.
owner	String	Dependency owner. public indicates a public dependency.
link	String	URL of the dependency in the OBS console.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● Java8 ● Java11 ● Node.js6.10 ● Node.js8.10 ● Node.js10.16 ● Node.js12.13 ● Node.js14.18 ● Python2.7 ● Python3.6 ● Go1.8 ● Go1.x ● C#(.NET Core 2.0) ● C#(.NET Core 2.1) ● C#(.NET Core 3.1) ● Custom ● PHP7.3 ● Python3.9 ● http ● Custom Image
etag	String	Dependency ID.
size	Long	Dependency size.
name	String	Dependency name.
file_name	String	Dependency file name.
description	String	Dependency description.
version	Long	Dependence version.
last_modified	Long	Time when the dependency was last updated.

Status code: 401

Table 6-36 Response body parameters

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

Status code: 403**Table 6-37** Response body parameters

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

Status code: 404**Table 6-38** Response body parameters

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

Status code: 500**Table 6-39** Response body parameters

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

Example Requests

Dependencies of the current tenant.

```
GET https://{Endpoint}/v2/{project_id}/fgs/ListDependencies?marker=0&maxitems=400
```

Example Responses

Status code: 200

ok

```
{
  "dependencies" : [ {
    "id" : "6578de50-9a18-48fa-b84e-b2d36636e433",
    "owner" : "public",
    "link" : "https://{obs_endpoint}/functionstage-examples/fg_test_pandas_1.1.3.zip",
    "runtime" : "Python3.6",
    "etag" : "35a893d9495b3e22259b2773996bc94d-6",
    "size" : 31009808,
    "name" : "panda1.1.3"
  } ],
  "next_marker" : 43,
  "count" : 43
}
```

Status Codes

Status Code	Description
200	ok
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.2 Creating a Dependency(To Be Discarded)

Function

This API is used to create a dependency.

URI

POST /v2/{project_id}/fgs/dependencies

Table 6-40 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-41 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Table 6-42 Request body parameters

Parameter	Mandatory	Type	Description
depend_file	No	String	This parameter is mandatory when depend_type is set to zip. It is in the file stream format and must be a ZIP file encoded using Base64. The size of the ZIP file cannot exceed 40 MB. For a larger file, upload it through OBS.
depend_link	No	String	URL of the dependency in the OBS console when depend_type is set to obs.
depend_type	Yes	String	Import mode. Options: obs and zip.

Parameter	Mandatory	Type	Description
runtime	Yes	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
name	Yes	String	<p>Dependence name. It can contain a maximum of 96 characters, and must start with a letter and end with a letter or digit. Only letters, digits, underscores (_), periods (.), and hyphens (-) are allowed.</p>
description	No	String	<p>Description of the dependency, which can contain a maximum of 512 characters.</p>

Response Parameters

Status code: 200

Table 6-43 Response body parameters

Parameter	Type	Description
id	String	Dependence version ID.
owner	String	Dependency owner.
link	String	URL of the dependency in the OBS console.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	Dependency ID.
size	Long	Dependency size.

Parameter	Type	Description
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.

Status code: 400**Table 6-44** Response body parameters

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

Status code: 401**Table 6-45** Response body parameters

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

Status code: 403**Table 6-46** Response body parameters

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

Status code: 404**Table 6-47** Response body parameters

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

Status code: 500**Table 6-48** Response body parameters

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

Status code: 503**Table 6-49** Response body parameters

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

Example Requests

- Create a dependency by directly uploading a ZIP file.

```
POST https://{Endpoint}/v2/{project_id}/fgs/dependencies
```

```
{
  "depend_file": "xxx",
  "depend_type": "zip",
  "runtime": "Node.js8.10",
  "name": "xxx"
}
```

- Create a dependency by uploading a ZIP file from OBS.

```
POST https://{Endpoint}/v2/{project_id}/fgs/dependencies
```

```
{
  "depend_link": "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-
bfd-79600bd972b3.zip",
  "depend_type": "obs",
  "runtime": "Node.js8.10",
  "name": "xxx"
}
```

Example Responses**Status code: 200**

ok

```
{
  "id": "4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3",
  "owner": "*****",
  "link": "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3.zip",
  "runtime": "Python3.6",
}
```

```
"etag" : "83863be4b6c3a86aef995dbc83aae68f",
"size" : 577118,
"name" : "python-kafka",
"description" : "Python library for Kafka operations.",
"file_name" : "python-kafka.zip"
}
```

Status Codes

Status Code	Description
200	ok
400	Bad request.
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.
503	Service unavailable.

Error Codes

See [Error Codes](#).

6.3.3 Creating a Dependency Version

Function

This API is used to create a dependency version.

URI

POST /v2/{project_id}/fgs/dependencies/version

Table 6-50 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-51 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-52 Request body parameters

Parameter	Mandatory	Type	Description
depend_file	No	String	This parameter is mandatory when depend_type is set to zip. It is in the file stream format and must be a ZIP file encoded using Base64. The size of the ZIP file cannot exceed 40 MB. For a larger file, upload it through OBS.
depend_link	No	String	URL of the dependency in the OBS console when depend_type is set to obs.
depend_type	Yes	String	Import mode. Options: obs and zip.

Parameter	Mandatory	Type	Description
runtime	Yes	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
name	Yes	String	<p>Dependence name. It can contain a maximum of 96 characters, and must start with a letter and end with a letter or digit. Only letters, digits, underscores (_), periods (.), and hyphens (-) are allowed.</p>
description	No	String	<p>Description of the dependency, which can contain a maximum of 512 characters.</p>

Response Parameters

Status code: 200

Table 6-53 Response body parameters

Parameter	Type	Description
id	String	Dependence version ID.
owner	String	Dependency owner.
link	String	URL of the dependency in OBS.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
etag	String	Unique identifier of the dependency.
size	Long	Dependency size.

Parameter	Type	Description
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.
version	Long	Dependency version.
dep_id	String	Dependency ID.
last_modified	Long	Time when the dependency was last updated.

Status code: 401**Table 6-54** Response body parameters

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

Status code: 403**Table 6-55** Response body parameters

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

Status code: 404**Table 6-56** Response body parameters

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

Status code: 500

Table 6-57 Response body parameters

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

Example Requests

- Create a dependency version by directly uploading a ZIP file.

```
POST https://{Endpoint}/v2/{project_id}/fgs/dependencies/version
```

```
{
  "depend_file": "xxx",
  "depend_type": "zip",
  "runtime": "Node.js8.10",
  "name": "xxx"
}
```

- Create a dependency by uploading a ZIP file from OBS.

```
POST https://{Endpoint}/v2/{project_id}/fgs/dependencies/version
```

```
{
  "depend_link": "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-
bffd-79600bd972b3.zip",
  "depend_type": "obs",
  "runtime": "Node.js8.10",
  "name": "xxx"
}
```

Example Responses

Status code: 200

ok

```
{
  "id": "4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3",
  "owner": "*****",
  "link": "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3.zip",
  "runtime": "Python3.6",
  "etag": "83863be4b6c3a86aef995dbc83aae68f",
  "size": 577118,
  "name": "python-kafka",
  "description": "Python library for Kafka operations.",
  "file_name": "python-kafka.zip",
  "version": 0,
  "dep_id": "edbd67fa-f107-40b3-af75-a85f0577ad61",
  "last_modified": 1660029887
}
```

Status Codes

Status Code	Description
200	ok
401	Unauthorized.

Status Code	Description
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.4 Querying Dependency Versions

Function

This API is used to query dependency versions.

URI

GET /v2/{project_id}/fgs/dependencies/{depend_id}/version

Table 6-58 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
depend_id	Yes	String	Dependency ID.

Table 6-59 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time. Default value: 0.
maxitems	No	String	Maximum number of items to return in a request.

Request Parameters

Table 6-60 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-61 Response body parameters

Parameter	Type	Description
dependencies	Array of ListDependencyVersionsResult objects	Dependency list.
next_marker	Long	Next read position.
count	Long	Total number of dependencies.

Table 6-62 ListDependencyVersionsResult

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Dependency owner. public indicates that the dependency is public.
link	String	URL of the dependency in OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	Unique identifier of the dependency (MD5 verification value).
size	Long	Size of the dependency.
name	String	Dependency name.
file_name	String	Dependency file name.
description	String	Dependency description.
version	Long	Dependency version.
last_modified	Long	Time when the dependency was last updated.
dep_id	String	Dependency ID.
is_shared	Boolean	Whether to share the dependency version. (discarded)

Status code: 401**Table 6-63** Response body parameters

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

Status code: 403**Table 6-64** Response body parameters

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

Status code: 404**Table 6-65** Response body parameters

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

Status code: 500**Table 6-66** Response body parameters

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

Example Requests

Query dependencies of the current tenant.

```
GET https://{Endpoint}/v2/{project_id}/fgs/ListDependencies?marker=0&maxitems=400
```

Example Responses

Status code: 200

ok

```
{
  "dependencies": [ {
    "id": "6578de50-9a18-48fa-b84e-b2d36636e433",
    "owner": "public",
    "link": "https://{obs_endpoint}/functionstage-examples/fg_test_pandas_1.1.3.zip",
    "runtime": "Python3.6",
    "etag": "35a893d9495b3e22259b2773996bc94d-6",
    "size": 31009808,
    "name": "panda1.1.3"
  } ],
  "next_marker": 43,
  "count": 43
}
```

Status Codes

Status Code	Description
200	ok
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.5 Querying a Dependency Version

Function

This API is used to query the details about a dependency version.

URI

GET /v2/{project_id}/fgs/dependencies/{depend_id}/version/{version}

Table 6-67 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
depend_id	Yes	String	Dependency ID.
version	Yes	String	Dependence version.

Request Parameters

Table 6-68 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Response Parameters

Status code: 200

Table 6-69 Response body parameters

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Dependency owner.
link	String	URL of the dependency in OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	Unique identifier of the dependency (MD5 verification value).
size	Long	Dependency size.
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.
version	Long	Dependency version.
last_modified	Long	Time when the dependency was last updated.
dep_id	String	Dependency ID.
download_link	String	Temporary download link of a dependency file.

Parameter	Type	Description
is_shared	Boolean	Whether to share the dependency version. (discarded)

Status code: 401**Table 6-70** Response body parameters

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

Status code: 403**Table 6-71** Response body parameters

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

Status code: 404**Table 6-72** Response body parameters

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

Status code: 500**Table 6-73** Response body parameters

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

Example Requests

Query dependencies of the current tenant.

```
GET https://{Endpoint}/v2/{project_id}/fgs/ListDependencies?marker=0&maxitems=400
```

Example Responses

Status code: 200

OK

```
{
  "id" : "4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3",
  "owner" : "*****",
  "link" : "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3.zip",
  "runtime" : "Python3.6",
  "etag" : "83863be4b6c3a86aef995dbc83aae68f",
  "size" : 577118,
  "name" : "python-kafka",
  "description" : "Python library for Kafka operations.",
  "file_name" : "python-kafka.zip",
  "version" : 0,
  "last_modified" : 1660029887
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.6 Deleting a Dependency Version

Function

This API is used to delete a dependency version.

URI

```
DELETE /v2/{project_id}/fgs/dependencies/{depend_id}/version/{version}
```

Table 6-74 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
depend_id	Yes	String	Dependency ID.
version	Yes	String	Dependence version.

Request Parameters

Table 6-75 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 401

Table 6-76 Response body parameters

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

Status code: 403

Table 6-77 Response body parameters

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

Status code: 404**Table 6-78** Response body parameters

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

Status code: 500**Table 6-79** Response body parameters

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

Example Requests

Delete a dependency version.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/dependencies/{depend_id}/version/{version}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.7 Deleting a Dependency(To Be Discarded)

Function

This API is used to delete a specified dependency.

URI

DELETE /v2/{project_id}/fgs/dependencies/{depend_id}

Table 6-80 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
depend_id	Yes	String	Dependency ID.

Request Parameters

Table 6-81 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Response Parameters

Status code: 401

Table 6-82 Response body parameters

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

Status code: 403

Table 6-83 Response body parameters

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

Status code: 404**Table 6-84** Response body parameters

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

Status code: 500**Table 6-85** Response body parameters

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

Example Requests

Delete a dependency.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/dependencies/{depend_id}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
401	Unauthorized.
403	Forbidden.
404	Not found.

Status Code	Description
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.8 Querying a Dependency (To Be Discarded)

Function

This API is used to query a specified dependency.

URI

GET /v2/{project_id}/fgs/dependencies/{depend_id}

Table 6-86 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
depend_id	Yes	String	Dependency ID.

Request Parameters

Table 6-87 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Response Parameters

Status code: 200

Table 6-88 Response body parameters

Parameter	Type	Description
id	String	Dependency ID.
owner	String	Dependency owner.
link	String	URL of the dependency in the OBS console.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	Dependency ID.
size	Long	Dependency size.
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.

Status code: 401**Table 6-89** Response body parameters

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

Status code: 403**Table 6-90** Response body parameters

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

Status code: 404**Table 6-91** Response body parameters

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

Status code: 500**Table 6-92** Response body parameters

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

Example Requests

Query a dependency.

```
GET https://{Endpoint}/v2/{project_id}/fgs/dependencies/{depend_id}
```


Example Responses

Status code: 200

OK

```
{
  "id" : "4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3",
  "owner" : "*****",
  "link" : "https://{bucket}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3.zip",
  "runtime" : "Python3.6",
  "etag" : "83863be4b6c3a86aef995dbc83aae68f",
  "size" : 577118,
  "name" : "python-kafka",
  "description" : "Python library for Kafka operations.",
  "file_name" : "python-kafka.zip"
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.3.9 Updating a Dependency

Function

This API is used to update a specified dependency.

URI

PUT /v2/{project_id}/fgs/dependencies/{depend_id}

Table 6-93 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
depend_id	Yes	String	Dependency ID.

Request Parameters

Table 6-94 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Table 6-95 Request body parameters

Parameter	Mandatory	Type	Description
depend_file	No	String	This parameter is mandatory when depend_type is set to zip. It is in the file stream format and must be a ZIP file encoded using Base64. The size of the ZIP file cannot exceed 40 MB. For a larger file, upload it through OBS.
depend_link	No	String	URL of the dependency in the OBS console when depend_type is set to obs.
depend_type	Yes	String	Import mode. Options: obs and zip.

Parameter	Mandatory	Type	Description
runtime	Yes	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
name	Yes	String	<p>Dependence name. It can contain a maximum of 96 characters, and must start with a letter and end with a letter or digit. Only letters, digits, underscores (_), periods (.), and hyphens (-) are allowed.</p>
description	No	String	<p>Description of the dependency, which can contain a maximum of 512 characters.</p>

Response Parameters

Status code: 200

Table 6-96 Response body parameters

Parameter	Type	Description
id	String	Dependency ID.
owner	String	Dependency owner.
link	String	URL of the dependency in the OBS console.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
etag	String	Dependency ID.
size	Long	Dependency size.

Parameter	Type	Description
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.

Status code: 400**Table 6-97** Response body parameters

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

Status code: 401**Table 6-98** Response body parameters

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

Status code: 403**Table 6-99** Response body parameters

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

Status code: 404**Table 6-100** Response body parameters

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

Status code: 500

Table 6-101 Response body parameters

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

Example Requests

Update a dependency.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/dependencies/{depend_id}
{
  "depend_file": "xxx",
  "depend_type": "zip",
  "runtime": "Node.js8.10",
  "name": "xxx"
}
```

Example Responses

Status code: 200

ok

- Example 1

null

- Example 2

```
{
  "id": "4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3",
  "owner": "*****",
  "link": "https://{bukcet}.{obs_endpoint}/depends/****/4f4ae4eb-dcdc-4dd3-bffd-79600bd972b3.zip",
  "runtime": "Python3.6",
  "etag": "83863be4b6c3a86aef995dbc83aae68f",
  "size": 577118,
  "name": "python-kafka",
  "description": "Python library for Kafka operations.",
  "file_name": "python-kafka.zip"
}
```

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](#).

6.4 Test Events

6.4.1 Querying Test Events of a Function

Function

This API is used to query the test events of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/events

Table 6-102 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-103 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-104 Response body parameters

Parameter	Type	Description
count	Integer	Total number of test events.
events	Array of ListEventsResult objects	Test event list.
next_marker	Long	Next read location.

Table 6-105 ListEventsResult

Parameter	Type	Description
id	String	Test event ID.
last_modified	Number	Last update time.
name	String	Test event name.

Status code: 400

Table 6-106 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 401**Table 6-107** Response body parameters

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

Status code: 403**Table 6-108** Response body parameters

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

Status code: 404**Table 6-109** Response body parameters

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

Status code: 500**Table 6-110** Response body parameters

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

Example Requests

Query the test event list.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/events
```

Example Responses

Status code: 200

OK

```
{
  "events": [ {
    "id": "3b659dc0-12fc-40dc-aa05-a321d9424cb3",
    "name": "event-k9r3",
    "last_modified": 1597374286
  } ],
  "next_marker": 1,
  "count": 1
}
```

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](#).

6.4.2 Creating a Test Event

Function

This API is used to create a test event.

URI

```
POST /v2/{project_id}/fgs/functions/{function_urn}/events
```

Table 6-111 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-112 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-113 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Test event name. Max. 25 of letters, digits, hyphens (-), and underscores (_). Start with a letter, and end with a letter or digit. Minimum length: 1 character. Maximum length: 25 characters.
content	Yes	String	Test event content, which is a Base64-encoded JSON character string.

Response Parameters

Status code: 200

Table 6-114 Response body parameters

Parameter	Type	Description
id	String	Test event ID.
name	String	Test event name.

Status code: 400**Table 6-115** Response body parameters

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

Status code: 401**Table 6-116** Response body parameters

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

Status code: 403**Table 6-117** Response body parameters

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

Status code: 404**Table 6-118** Response body parameters

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

Status code: 500**Table 6-119** Response body parameters

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

Example Requests

Create a test event named event-xx with content {"k":"v"}.

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/events
{
  "name" : "event-xx",
  "content" : "eyJrljoidi9"
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "3b659dc0-12fc-40dc-aa05-a321d9424cb3",
  "name" : "event-k9r3"
}
```

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](#).

6.4.3 Deleting a Test Event

Function

This API is used to delete a test event.

URI

DELETE /v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}

Table 6-120 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
event_id	Yes	String	Test event ID.

Request Parameters

Table 6-121 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 400

Table 6-122 Response body parameters

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

Status code: 401**Table 6-123** Response body parameters

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

Status code: 403**Table 6-124** Response body parameters

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

Status code: 404**Table 6-125** Response body parameters

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

Status code: 500**Table 6-126** Response body parameters

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

Example Requests

Delete a test event.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}
```

Example Responses

None

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](#).

6.4.4 Obtaining the Details of a Test Event

Function

This API is used to query the details of a test event.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}

Table 6-127 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
event_id	Yes	String	Test event ID.

Request Parameters

Table 6-128 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-129** Response body parameters

Parameter	Type	Description
id	String	Test event ID.
name	String	Test event name.
content	String	Test event content.
last_modified	Number	Last update time.

Status code: 400**Table 6-130** Response body parameters

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

Status code: 401**Table 6-131** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 403**Table 6-132** Response body parameters

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

Status code: 404**Table 6-133** Response body parameters

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

Status code: 500**Table 6-134** Response body parameters

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

Example Requests

Query a test event.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}
```

Example Responses

Status code: 200

OK

```
{  
  "id" : "3b659dc0-12fc-40dc-aa05-a321d9424cb3",  
  "name" : "event-k9r3",
```

```
"last_modified" : 1597374286,  
"content" : "ewogICAgImJvZHkiOiAiIiwKICAgICJyZXF1ZXN0Q29udGV4d*****"  
}
```

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](#).

6.4.5 Updating a Test Event

Function

This API is used to update a test event.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}

Table 6-135 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
event_id	Yes	String	Test event ID.

Request Parameters

Table 6-136 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-137 Request body parameters

Parameter	Mandatory	Type	Description
content	Yes	String	Test event content, which is a Base64-encoded JSON character string.

Response Parameters

Status code: 200

Table 6-138 Response body parameters

Parameter	Type	Description
id	String	Test event ID.
name	String	Test event name.

Status code: 400

Table 6-139 Response body parameters

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

Status code: 401

Table 6-140 Response body parameters

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

Status code: 403**Table 6-141** Response body parameters

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

Status code: 404**Table 6-142** Response body parameters

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

Status code: 500**Table 6-143** Response body parameters

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

Example Requests

Update the content of a specified test event to {"k":"v"}.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/events/{event_id}
{
  "content" : "eyJrljoidiJ9"
}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "3b659dc0-12fc-40dc-aa05-a321d9424cb3",
  "name" : "event-k9r3"
}
```

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](#).

6.5 Function Tracing

6.5.1 Querying Tracing Configuration

Function

This API is used to query the tracing configuration of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/tracing

Table 6-144 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-145 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-146 Response body parameters

Parameter	Type	Description
tracing_ak	String	AK of APM.
tracing_sk	String	SK of APM.

Status code: 403

Table 6-147 Response body parameters

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

Status code: 404

Table 6-148 Response body parameters

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

Status code: 500**Table 6-149** Response body parameters

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

Example Requests

Query the tracing configuration of a function.

```
GET /v2/{project_id}/fgs/functions/{function_urn}/tracing
```

Example Responses

Status code: 200

ok

```
{  
  "tracing_ak" : "xxx",  
  "tracing_sk" : "*****"  
}
```

Status code: 403

FORBIDDEN

```
{  
  "error_code" : "FSS.0403",  
  "error_msg" : "invalid token"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "FSS.0404",  
  "error_msg" : "can not find tracing aksk"  
}
```

Status code: 500

Internal error.

```
{  
  "error_code" : "FSS.0500",  
}
```



```
"error_msg" : "xxx"  
}
```

Status Codes

Status Code	Description
200	ok
403	FORBIDDEN
404	Not Found
500	Internal error.

Error Codes

See [Error Codes](#).

6.5.2 Modifying Tracing Configuration

Function

This API is used to modify the tracing configuration of a function. You can enable or modify the AK/SK or disable the AK/SK.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/tracing

Table 6-150 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-151 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-152 Request body parameters

Parameter	Mandatory	Type	Description
tracing_ak	No	String	AK of APM.
tracing_sk	No	String	SK of APM.

Response Parameters

Status code: 400

Table 6-153 Response body parameters

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

Status code: 403

Table 6-154 Response body parameters

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

Status code: 500

Table 6-155 Response body parameters

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

Example Requests

Modify the AK/SK in a function's tracing configuration.

```
PUT /v2/{project_id}/fgs/functions/{function_urn}/tracing
{
  "tracing_ak" : "xxx",
  "tracing_sk" : "yyy"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "FSS.1128",
  "error_msg" : "function[xxx] not existed"
}
```

Status code: 403

FORBIDDEN

```
{
  "error_code" : "FSS.0403",
  "error_msg" : "invalid token"
}
```

Status code: 500

Internal error.

```
{
  "error_code" : "FSS.0500",
  "error_msg" : "xxx"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
403	FORBIDDEN
500	Internal error.

Error Codes

See [Error Codes](#).

6.6 Function Lifecycle Management

6.6.1 Querying Functions

Function

This API is used to query all functions.

URI

GET /v2/{project_id}/fgs/functions

Table 6-156 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-157 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time.
maxitems	No	String	Maximum number of functions that can be queried each time. Maximum value: 400. If this parameter is not set or is 0 or greater than 400, the default value 400 is used. If this parameter is less than 0, a message indicating parameter error is returned.
package_name	No	String	Name of the group.

Request Parameters

Table 6-158 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-159** Response body parameters

Parameter	Type	Description
functions	Array of ListFunctionResult objects	Function list.
next_marker	Integer	Next read location.
count	Long	Total number of functions that match the query conditions.

Table 6-160 ListFunctionResult

Parameter	Type	Description
resource_id	String	Resource ID.
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>
memory_size	Integer	<p>Memory consumed by a function.</p> <p>Unit: MB.</p> <p>The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096.</p> <p>The value ranges from 128 to 4096.</p>

Parameter	Type	Description
gpu_memory	Integer	GPU memory. This parameter is available only for functions created with a custom runtime or image. Unit: MB. Options: 1024, 2048, 3072, 4096, 5120, 6144, 7168, 8192, 9216, 10,240, 11,264, 12,288, 13,312, 14,336, 15,360, and 16,384. Range: 1024 to 16,384.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	Address of the function code package in OBS.
code_filename	String	Function file name.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version.
image_name	String	Internal identifier of a function version.

Parameter	Type	Description
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
app_xrole	String	Agency used by the function app. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
description	String	Function description.
last_modified	String	Time when the function was last updated.
func_vpc_id	String	VPC ID.
strategy_config	StrategyConfig object	Function policy configuration.
extend_config	String	Extended configuration.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.

Parameter	Type	Description
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
fail_count	Integer	Number of times that a function failed to be executed in the last day.
is_bridge_function	Boolean	Whether this is a bridge function.
bind_bridge_funcUrns	Array of strings	URNs bound to the bridge function.

Table 6-161 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">• -1: The function has unlimited instances.• 0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Status code: 401**Table 6-162** Response body parameters

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

Status code: 403

Table 6-163 Response body parameters

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

Status code: 404**Table 6-164** Response body parameters

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

Status code: 500**Table 6-165** Response body parameters

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

Example Requests

Query functions of the current tenant.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions?marker=0&maxitems=400
```

Example Responses

Status code: 200

ok

```
{
  "functions": [ {
    "func_urn": "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
    "resource_id": "0d075978-5a54-4ee1-8e24-ff5bd070xxxx:test",
    "func_name": "test",
    "domain_id": "cff01_hk",
    "namespace": "7aad83af3e8d42e99ac194e8419e2c9b",
    "project_name": "xxxxxxx",
    "package": "default",
    "runtime": "Node.js6.10",
    "timeout": 3,
    "handler": "test.handler",
    "memory_size": 128,
    "cpu": 300,
  }
]
```

```
"code_type": "inline",
"code_filename": "index.js",
"code_size": 272,
"digest":
"decbce6939297b0b5ec6d1a23bf9c725870f5e69fc338a89a6a4029264688dc26338f56d08b6535de47f15ad53
8e22ca66613b9a46f807d50b687bb53fded1c6",
"version": "latest",
"xrole": "cff",
"image_name": "latest-191025153727@zehht",
"last_modified": "2019-10-25 15:37:27",
"strategy_config": {
  "concurrency": 0
},
"initializer_handler": "index.initializer",
"initializer_timeout": 3,
"pre_stop_handler": "index.pre_stop_handler",
"pre_stop_timeout": 3
}],
"next_marker": 4
}
```

Status Codes

Status Code	Description
200	ok
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.2 Creating a Function

Function

This API is used to create a function.

URI

POST /v2/{project_id}/fgs/functions

Table 6-166 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-167 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-168 Request body parameters

Parameter	Mandatory	Type	Description
func_name	Yes	String	Function name. Max. 60 of letters, digits, hyphens (-), and underscores (_). Start with a letter, and end with a letter or digit. Minimum length: 1 character. Maximum length: 60 characters.
package	Yes	String	Group to which the function belongs. This field is defined to group functions.

Parameter	Mandatory	Type	Description
runtime	Yes	String	<p>Environment in which a FunctionGraph function is executed. Options:</p> <ul style="list-style-type: none"> ● Python 2.7 ● Python 3.6 ● Python 3.9 ● Go 1.8 ● Go 1.x ● Java 8 ● Java 11 ● Node.js 6.10 ● Node.js 8.10 ● Node.js 10.16 ● Node.js 12.13 ● Node.js 14.18 ● C# (.NET Core 2.0) ● C# (.NET Core 2.1) ● C# (.NET Core 3.1) ● Custom ● PHP 7.3 ● HTTP <p>Enumeration values:</p> <ul style="list-style-type: none"> ● Java8 ● Java11 ● Node.js6.10 ● Node.js8.10 ● Node.js10.16 ● Node.js12.13 ● Node.js14.18 ● Python2.7 ● Python3.6 ● Go1.8 ● Go1.x ● C#(.NET Core 2.0) ● C#(.NET Core 2.1) ● C#(.NET Core 3.1) ● Custom ● PHP7.3 ● Python3.9

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none">http
timeout	Yes	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
handler	Yes	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For a function created with a custom image, the handler must be "-". For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.
depend_version_list	No	Array of strings	Dependency version IDs.
func_vpc	No	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
memory_size	Yes	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.

Parameter	Mandatory	Type	Description
code_type	No	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. This parameter is optional for custom image functions, but mandatory for other functions. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	No	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	No	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
custom_image	No	CustomImage object	Container image. This parameter is mandatory only when CodeType is set to Custom-Image-Swr.
user_data	No	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.

Parameter	Mandatory	Type	Description
encrypted_user_data	No	String	Name/value information to be encrypted. For example, if a function needs an encryption password, define password={1234}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
xrole	No	String	Configuration agency. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function configuration agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	No	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	No	String	Function description.
func_code	No	FuncCode object	Response body of the FuncCode struct.
mount_config	No	MountConfig object	Mounting configuration.
initializer_handler	No	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.

Parameter	Mandatory	Type	Description
initializer_timeout	No	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	No	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	No	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	No	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
type	No	String	Function version. Some regions support only v1. The default value is v1. Default: v2 Enumeration values: <ul style="list-style-type: none">• v1• v2
log_config	No	FuncLogConfig object	Function log configuration.
network_controller	No	NetworkControllerConfig object	Network configuration.
is_stateful_function	No	Boolean	Whether stateful functions are supported. If they are supported, set this parameter to true. This parameter is supported in FunctionGraph v2.
enable_dynamic_memory	No	Boolean	Whether to enable dynamic memory allocation.

Table 6-169 FuncVpc

Parameter	Mandatory	Type	Description
domain_id	No	String	Domain name ID.
namespace	No	String	Project ID.
vpc_name	No	String	VPC name.
vpc_id	Yes	String	VPC ID.
subnet_name	No	String	Subnet name.
subnet_id	Yes	String	Subnet ID.
cidr	No	String	Subnet mask.
gateway	No	String	Gateway.
security_group_s	No	Array of strings	Security group.

Table 6-170 CustomImage

Parameter	Mandatory	Type	Description
enabled	No	Boolean	Whether to enable this feature.
image	No	String	Image address.
command	No	String	Command for starting a container image.
args	No	String	Command line parameter for starting a container image.
working_dir	No	String	Working directory of an image container.
uid	No	String	User ID of an image container.
gid	No	String	User group ID of an image container.

Table 6-171 FuncCode

Parameter	Mandatory	Type	Description
file	No	String	Function code, which must be encoded using Base64. If this parameter is left blank, the default code is used.

Parameter	Mandatory	Type	Description
link	No	String	Function code URL.

Table 6-172 MountConfig

Parameter	Mandatory	Type	Description
mount_user	Yes	MountUser object	User information.
func_mounts	Yes	Array of FuncMount objects	Mounted resources.

Table 6-173 MountUser

Parameter	Mandatory	Type	Description
user_id	Yes	String	User ID, a non-0 integer from -1 to 65534.
user_group_id	Yes	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-174 FuncMount

Parameter	Mandatory	Type	Description
mount_type	Yes	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	Yes	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	No	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.
local_mount_path	Yes	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-175 FuncLogConfig

Parameter	Mandatory	Type	Description
group_name	No	String	Name of the log group bound to the function.
group_id	No	String	ID of the log group bound to the function.
stream_name	No	String	Name of the log stream bound to the function.
stream_id	No	String	ID of the log stream bound to the function.

Table 6-176 NetworkControlConfig

Parameter	Mandatory	Type	Description
disable_public_network	No	Boolean	Disable public access.
trigger_access_vpcs	No	Array of VpcConfig objects	VPC access restriction.

Table 6-177 VpcConfig

Parameter	Mandatory	Type	Description
vpc_name	No	String	VPC name.
vpc_id	No	String	VPC ID.

Response Parameters

Status code: 200

Table 6-178 Response body parameters

Parameter	Type	Description
func_id	String	Function ID, which uniquely identifies a function.
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.

Parameter	Type	Description
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>

Parameter	Type	Description
memory_size	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
domain_names	String	Private domain name configured for resolution.
user_data	String	Name/Value information defined for the function. These are parameters used in a function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.

Parameter	Type	Description
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version.
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
app_xrole	String	Agency used by the function app. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
description	String	Function description.
last_modified	String	Time when the function was last updated.
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	MountConfig object	Mounting configuration.
reserved_instance_count	Integer	The number of instances reserved for a function.
depend_list	Array of strings	Dependency ID list.
depend_version_list	Array of strings	Dependency version IDs.
strategy_config	StrategyConfig object	Function policy configuration.
extend_config	String	Extended configuration.
dependencies	Array of Dependency objects	Dependency packages.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.

Parameter	Type	Description
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
enable_cloud_debug	String	Whether to enable cloud debugging to adapt to the CloudDebug scenario. (discarded)
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
is_stateful_function	Boolean	Whether stateful functions are supported. This parameter is supported in FunctionGraph v2.
custom_image	CustomImage object	Container image.
is_bridge_function	Boolean	Whether this is a bridge function.
apig_route_enabled	Boolean	Whether to configure gateway routing rules.

Parameter	Type	Description
heartbeat_handler	String	Entry of the heartbeat function in the format of "xx.xx". It must contain a period (.).This parameter can be configured only for Java functions. The heartbeat function entry must be in the same file as your function handler. This parameter is mandatory when the heartbeat function is enabled.
enable_class_isolation	Boolean	Indicates whether to enable class isolation. This parameter can be configured only for Java functions. Enable to dump logs to Kafka and improve class loading efficiency. However, this may cause compatibility issues.
allow_ephemeral_storage	Boolean	Indicates whether ephemeral storage can be configured.
ephemeral_storage	Integer	Ephemeral storage. By default, the /tmp directory of each function is 512 MB. You can increase the size to 10,240 MB (10 GB) if necessary. Enumeration values: <ul style="list-style-type: none">• 512• 10240
network_controller	NetworkControlConfig object	Network configuration.
resource_id	String	Resource ID. Unique ID of a function.
is_return_stream	Boolean	Whether to return stream data. (discarded)
enable_authentication_header	Boolean	Whether to add authentication information to request header for custom image-based functions. (This parameter cannot be modified when creating a function.)

Table 6-179 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.
namespace	String	Project ID.
vpc_name	String	VPC name.
vpc_id	String	VPC ID.

Parameter	Type	Description
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-180 MountConfig

Parameter	Type	Description
mount_user	MountUser object	User information.
func_mounts	Array of FuncMount objects	Mounted resources.

Table 6-181 MountUser

Parameter	Type	Description
user_id	String	User ID, a non-0 integer from -1 to 65534.
user_group_id	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-182 FuncMount

Parameter	Type	Description
mount_type	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.

Parameter	Type	Description
local_mount_path	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-183 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">• -1: The function has unlimited instances.• 0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-184 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Table 6-185 CustomImage

Parameter	Type	Description
enabled	Boolean	Whether to enable this feature.
image	String	Image address.
command	String	Command for starting a container image.
args	String	Command line parameter for starting a container image.
working_dir	String	Working directory of an image container.
uid	String	User ID of an image container.
gid	String	User group ID of an image container.

Table 6-186 NetworkControlConfig

Parameter	Type	Description
disable_public_network	Boolean	Disable public access.
trigger_access_vpcs	Array of VpcConfig objects	VPC access restriction.

Table 6-187 VpcConfig

Parameter	Type	Description
vpc_name	String	VPC name.
vpc_id	String	VPC ID.

Status code: 400**Table 6-188** Response body parameters

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

Status code: 401

Table 6-189 Response body parameters

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

Status code: 403**Table 6-190** Response body parameters

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

Status code: 404**Table 6-191** Response body parameters

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

Status code: 500**Table 6-192** Response body parameters

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

Status code: 503**Table 6-193** Response body parameters

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

Example Requests

- Create a Python 2.7 function with 128 MB memory and 3s timeout. Add environment variable password and mount a disk.

POST https://{Endpoint}/v2/{project_id}/fgs/functions

```
{
  "func_name": "xxx",
  "package": "xxx",
  "runtime": "Python2.7",
  "handler": "index.py",
  "type": "v2",
  "memory_size": 128,
  "timeout": 3,
  "code_type": "inline",
  "mount_config": {
    "mount_user": {
      "user_id": -1,
      "user_group_id": -1
    }
  },
  "func_mounts": [ {
    "mount_resource": "268xxx-d3xx-4cxx-98xx-d1dbxxx",
    "local_mount_path": "/mnt",
    "mount_type": "sfsTurbo"
  } ]
},
"encrypted_user_data": "{\"password\":\"1234\"}",
"func_code": {
  "file": "xxxxx",
  "link": ""
}
}
```

- Create a Python 3.9 function with 128 MB memory and 3s timeout, and upload the code from OBS.

POST https://{Endpoint}/v2/{project_id}/fgs/functions

```
{
  "func_name": "xxx",
  "package": "xxx",
  "runtime": "Python3.9",
  "handler": "index.py",
  "type": "v2",
  "memory_size": 128,
  "timeout": 3,
  "code_type": "obs",
  "code_url": "https:xxx"
}
```

- Create a custom image function named xxx. The memory size is 128 MB, the timeout period is 3s, and the code is uploaded by SWR.

POST https://{Endpoint}/v2/{project_id}/fgs/functions

```
{
  "func_name": "xxx",
  "package": "xxx",
  "runtime": "Custom Image",
  "handler": "-",
  "type": "v2",
  "memory_size": 128,
  "timeout": 3,
  "code_type": "obs",
  "code_url": "https:xxx",
  "xrole": "xxx",
  "custom_image": {
    "enabled": true,
    "image": "swr.xxx"
  }
}
```

Example Responses

Status code: 200

ok

```
{
  "func_urn" :
  "urn:fss:xxxxxxxx:c3b2459a6d5e4b548e6777e57852692d:function:default:TestCreateFunctionInPythonSdk:latest",
  "func_name" : "TestCreateFunctionInPythonSdk",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "namespace" : "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name" : "xxxxxxxx",
  "package" : "default",
  "runtime" : "Python3.6",
  "timeout" : 3,
  "handler" : "index.handler",
  "memory_size" : 128,
  "encrypted_user_data" : "{\"password\":\"\"}",
  "mount_config" : {
    "mount_user" : {
      "user_id" : -1,
      "user_group_id" : -1
    },
    "func_mounts" : [ {
      "mount_resource" : "268xxx-d3xx-4cxx-98xx-d1dbxxx",
      "local_mount_path" : "/mnt",
      "mount_type" : "sfsTurbo"
    } ]
  },
  "cpu" : 300,
  "code_type" : "inline",
  "code_filename" : "index.py",
  "code_size" : 100,
  "digest" :
  "1c8610d1870731a818a037f1d2adf3223e8ac351aeb293fb1f8eabd2e9820069a61ed8b5d38182e760adc33a307d0e957afc357f415cd8c9c3ff6f0426fd85cd",
  "version" : "latest",
  "image_name" : "latest-191025153727@zehlht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
  }
}
```

Status code: 400

Bad request.

```
{
  "error_code" : "FSS.0401",
  "error_msg" : "not permit"
}
```

Status code: 401

Unauthorized.

```
{
  "error_code" : "FSS.0401",
  "error_msg" : "not permit"
}
```

Status code: 403

Forbidden.

```
{
  "error_code" : "FSS.0401",
```



```
"error_msg" : "not permit"  
}
```

Status Codes

Status Code	Description
200	ok
400	Bad request.
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.
503	Service unavailable.

Error Codes

See [Error Codes](#).

6.6.3 Deleting a Function or Function Version

Function

This API is used to delete a function or a non-latest version of a function.

If the URN contains a function version or alias, the function version or the version corresponding to the specified alias as well as associated triggers will be deleted.

If the URN does not contain a function version or alias, the entire function (including all of its versions, aliases, and triggers) will be deleted.

URI

```
DELETE /v2/{project_id}/fgs/functions/{function_urn}
```

Table 6-194 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN. For details, see the function model descriptions. The latest version of a function cannot be deleted. To delete a function and all its versions, provide a URN without any version or alias. Example: urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test.

Request Parameters

Table 6-195 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 401

Table 6-196 Response body parameters

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

Status code: 403

Table 6-197 Response body parameters

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

Status code: 404**Table 6-198** Response body parameters

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

Status code: 500**Table 6-199** Response body parameters

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

Example Requests

Delete a function or a function version.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/functions/{func_urn}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
401	Unauthorized.
403	Forbidden.
404	Not found.

Status Code	Description
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.4 Querying the Code of a Function

Function

This API is used to query the code of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/code

Table 6-200 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-201 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-202 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• PHP7.3• Python3.9• http• Custom Image

Parameter	Type	Description
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
last_modified	String	Time when the function was last updated.
func_code	FuncCode object	Response body of the FuncCode struct.
depend_list	Array of strings	Dependency ID list.
depend_version_list	Array of strings	Dependency version IDs.
strategy_config	StrategyConfig object	Function policy configuration.
dependencies	Array of Dependency objects	Dependency packages.

Table 6-203 FuncCode

Parameter	Type	Description
file	String	Function code, which must be encoded using Base64. If this parameter is left blank, the default code is used.
link	String	Function code URL.

Table 6-204 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-205 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Status code: 400

Table 6-206 Response body parameters

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

Status code: 401**Table 6-207** Response body parameters

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

Status code: 403**Table 6-208** Response body parameters

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

Status code: 404**Table 6-209** Response body parameters

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

Status code: 500**Table 6-210** Response body parameters

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

Example Requests

Query the code of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/code
```

Example Responses

Status code: 200

OK

```
{
  "func_urn" : "urn:fss:xxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:latest",
  "func_name" : "test",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "runtime" : "Node.js6.10",
  "code_type" : "inline",
  "code_filename" : "index.zip",
  "code_size" : 245,
  "digest" :
"39d51ae334ffb239037e194159f4cc9cec31086719aa73db7d0a608343121a290f7115693e008bd01cb12b99a8
03856e83aa96173b26c528c41cfed18267e08f",
  "last_modified" : "2019-10-31 11:37:58",
  "func_code" : {
    "file" : "",
    "link" : ""
  },
  "strategy_config" : {
    "concurrency" : -1
  }
}
```

Status code: 404

Not found.

```
{
  "error_code" : "FSS.1052",
  "error_msg" : "Not found the function version"
}
```

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](#).

6.6.5 Modifying the Code of a Function

Function

This API is used to modify the code of a function.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/code

Table 6-211 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-212 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-213 Request body parameters

Parameter	Mandatory	Type	Description
code_type	Yes	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	No	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	No	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
func_code	Yes	FuncCode object	Response body of the FuncCode struct.
depend_version_list	No	Array of strings	Dependency version IDs.

Table 6-214 FuncCode

Parameter	Mandatory	Type	Description
file	No	String	Function code, which must be encoded using Base64. If this parameter is left blank, the default code is used.
link	No	String	Function code URL.

Response Parameters

Status code: 200

Table 6-215 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● Java8 ● Java11 ● Node.js6.10 ● Node.js8.10 ● Node.js10.16 ● Node.js12.13 ● Node.js14.18 ● Python2.7 ● Python3.6 ● Go1.8 ● Go1.x ● C#(.NET Core 2.0) ● C#(.NET Core 2.1) ● C#(.NET Core 3.1) ● Custom ● PHP7.3 ● Python3.9 ● http ● Custom Image

Parameter	Type	Description
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
last_modified	String	Time when the function was last updated.
func_code	FuncCode object	Response body of the FuncCode struct.
depend_list	Array of strings	Dependency ID list.
depend_version_list	Array of strings	Dependency version IDs.
strategy_config	StrategyConfig object	Function policy configuration.
dependencies	Array of Dependency objects	Dependency packages.

Table 6-216 FuncCode

Parameter	Type	Description
file	String	Function code, which must be encoded using Base64. If this parameter is left blank, the default code is used.
link	String	Function code URL.

Table 6-217 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-218 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● Java8 ● Java11 ● Node.js6.10 ● Node.js8.10 ● Node.js10.16 ● Node.js12.13 ● Node.js14.18 ● Python2.7 ● Python3.6 ● Go1.8 ● Go1.x ● C#(.NET Core 2.0) ● C#(.NET Core 2.1) ● C#(.NET Core 3.1) ● Custom ● PHP7.3 ● Python3.9 ● http ● Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Status code: 400

Table 6-219 Response body parameters

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

Status code: 401**Table 6-220** Response body parameters

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

Status code: 403**Table 6-221** Response body parameters

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

Status code: 404**Table 6-222** Response body parameters

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

Status code: 500**Table 6-223** Response body parameters

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

Example Requests

- Modify the code of a specified function in inline mode.
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/code

```
{
  "code_filename" : "index.zip",
  "code_type" : "inline",
  "func_code" : {
    "file" : "UEsDBAoAAAAIAPQ1M1gNImPLrAAAAAEBAAAIAAAaW5kZXgucHINjtEOgjAMRd/
5igVfxDALxhjDo0S/wB+YrMgMdMvWGYNh390wEfrU3nxb0xXjG85qLRU
+Sk8NP0UhUb3RltjTaUwkNKwVKDuwbA0vQMrDAhK8KsTFsoCeYvsMw2xUkeCvKu0hLRk
+6LIZ0u5s3BwPFwwUEEG/yo6B4vEXcshyBG
+lb437kfNFpEWhATrQmqGTkYVH0Pit8FEEdCqM6VQtSGncxYPPz5O3fgFUEsBAh4DCgAAAAgA9DUzWA
0iY8usAAAAAQEAAAgAAAAAAAAAAAAAAAAAPMCAAAAGluZGV4LnB5UEsFBgAAAAABAAEANGAAANIAA
AAAAA=="
  }
}
```

- Modify the code of a specified function by uploading a ZIP package.
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/code

```
{
  "code_filename" : "index.zip",
  "code_type" : "zip",
  "func_code" : {
    "file" : "UEsDBAoAAAAIAPQ1M1gNImPLrAAAAAEBAAAIAAAaW5kZXgucHINjtEOgjAMRd/
5igVfxDALxhjDo0S/wB+YrMgMdMvWGYNh390wEfrU3nxb0xXjG85qLRU
+Sk8NP0UhUb3RltjTaUwkNKwVKDuwbA0vQMrDAhK8KsTFsoCeYvsMw2xUkeCvKu0hLRk
+6LIZ0u5s3BwPFwwUEEG/yo6B4vEXcshyBG
+lb437kfNFpEWhATrQmqGTkYVH0Pit8FEEdCqM6VQtSGncxYPPz5O3fgFUEsBAh4DCgAAAAgA9DUzWA
0iY8usAAAAAQEAAAgAAAAAAAAAAAAAAAAAPMCAAAAGluZGV4LnB5UEsFBgAAAAABAAEANGAAANIAA
AAAAA=="
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "func_urn" : "urn:fss:xxxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:latest",
  "func_name" : "test",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "runtime" : "Node.js6.10",
  "code_type" : "inline",
  "code_filename" : "index.js",
  "code_size" : 245,
  "digest" :
"39d51ae334ffb239037e194159f4cc9cec31086719aa73db7d0a608343121a290f7115693e008bd01cb12b99a8
03856e83aa96173b26c528c41cfed18267e08f",
  "last_modified" : "2019-10-31 11:37:58",
  "func_code" : {
    "file" :
"aW1wb3J0IGpzb24KZGVmlGhhbmRsZXl0ZXZlbnQsIGNvbnRleHQpOgogICAgb3V0cHV0ID0gJ0hlcGxvIE1zZyB
mb3JgbW9kaWZ5OiAnImlCsganNvbi5kdW1wcyhldmVudCkKICAgIGFrlD0gY29udGV4dC5nZXRBY2Nlc3NLZXkoK
QogICAgc2sgPSBjb250ZXh0LmdldFNIY3JldEtleSgpCiAgICB0b2tlibiA9IGNvbnRleHQzZ2V0VG9rZW4oKQogICAg
cHJpbnQgJ2FrOicgKyBhawogICAgcHJpbnQgJ3NroicgKyBzawogICAgcHJpbnQgJ3Rva2VuOicgKyB0b2tlibgogIC
AgcmV0dXJlG91dHB1dAo+C0NLtqLwKlMnCTgBMSn55C+UbkysuKp1Bj7JQqxd5+5p7La/ew4RBTp8lusZ/
k2mqvqCDdoBYOywYCl
+RgctnLbTS6hLLj9sNyKoVXiXb1BLAQIeAwoAAAAIAAhYOU8ssPQsgwAAAAIAAAIAAAAAAAAAAAAAAAAAADzAgA
AAABpbmRleC5weVBLBQYAAAAAAQABADYAAACpAAAAAA=",
    "link" : ""
  },
  "strategy_config" : {
    "concurrency" : -1
  }
}
```

```
}  
}
```

Status code: 404

Not found.

```
{  
  "error_code" : "FSS.1052",  
  "error_msg" : "Not found the function version"  
}
```

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](#).

6.6.6 Querying the Metadata of a Function

Function

This API is used to query the metadata of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/config

Table 6-224 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-225 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-226** Response body parameters

Parameter	Type	Description
func_id	String	Function ID, which uniquely identifies a function.
resource_id	String	Resource ID.
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>
memory_size	Integer	<p>Memory consumed by a function.</p> <p>Unit: MB.</p> <p>The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096.</p> <p>The value ranges from 128 to 4096.</p>

Parameter	Type	Description
gpu_memory	Integer	GPU memory. This parameter is available only for functions created with a custom runtime or image. Unit: MB. Options: 1024, 2048, 3072, 4096, 5120, 6144, 7168, 8192, 9216, 10,240, 11,264, 12,288, 13,312, 14,336, 15,360, and 16,384. Range: 1024 to 16,384.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.

Parameter	Type	Description
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v +year/month/day-hour/minute/second).
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	String	Function description.
last_modified	String	Time when the function was last updated.
ephemeral_storage	Integer	Ephemeral storage. By default, the /tmp directory of each function is 512 MB. You can increase the size to 10,240 MB (10 GB) if necessary. Enumeration values: <ul style="list-style-type: none">● 512● 10240
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	MountConfig object	Mounting configuration.
depend_list	Array of strings	Dependency ID list.
depend_version_list	Array of strings	Dependency version IDs.
strategy_config	StrategyConfig object	Function policy configuration.

Parameter	Type	Description
dependencies	Array of Dependency objects	Dependency packages.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
enable_cloud_debug	String	Whether to enable cloud debugging to adapt to the CloudDebug scenario. (discarded)
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
is_stateful_function	Boolean	Whether stateful functions are supported. If they are supported, set this parameter to true. This parameter is supported in FunctionGraph v2.

Parameter	Type	Description
is_bridge_function	Boolean	Whether this is a bridge function.
enable_auth_in_header	Boolean	Whether to add authentication information to request header for custom image-based functions.
custom_image	CustomImage object	Container image.
reserved_instance_idle_mode	Boolean	Whether to enable idle mode for reserved instances.
apig_route_enable	Boolean	Whether to configure gateway routing rules.
heartbeat_handler	String	Entry of the heartbeat function in the format of "xx.xx". It must contain a period (.).This parameter can be configured only in Java. The heartbeat function entry must be in the same file as your function handler. This parameter is mandatory when the heartbeat function is enabled.
enable_class_isolation	Boolean	Indicates whether to enable class isolation. This parameter can be configured only in Java. Enable to dump logs to Kafka and improve class loading efficiency. However, this may cause compatibility issues.
gpu_type	String	GPU type.
allow_ephemeral_storage	Boolean	Indicates whether ephemeral storage can be configured.
network_controller	NetworkControlConfig object	Network configuration.
is_return_stream	Boolean	Whether to return stream data. (discarded)

Table 6-227 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.
namespace	String	Project ID.
vpc_name	String	VPC name.

Parameter	Type	Description
vpc_id	String	VPC ID.
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-228 MountConfig

Parameter	Type	Description
mount_user	MountUser object	User information.
func_mounts	Array of FuncMount objects	Mounted resources.

Table 6-229 MountUser

Parameter	Type	Description
user_id	String	User ID, a non-0 integer from -1 to 65534.
user_group_id	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-230 FuncMount

Parameter	Type	Description
mount_type	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.

Parameter	Type	Description
local_mount_path	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-231 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">• -1: The function has unlimited instances.• 0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-232 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Table 6-233 CustomImage

Parameter	Type	Description
enabled	Boolean	Whether to enable this feature.
image	String	Image address.
command	String	Command for starting a container image.
args	String	Command line parameter for starting a container image.
working_dir	String	Working directory of an image container.
uid	String	User ID of an image container.
gid	String	User group ID of an image container.

Table 6-234 NetworkControlConfig

Parameter	Type	Description
disable_public_network	Boolean	Disable public access.
trigger_access_vpcs	Array of VpcConfig objects	VPC access restriction.

Table 6-235 VpcConfig

Parameter	Type	Description
vpc_name	String	VPC name.
vpc_id	String	VPC ID.

Status code: 400**Table 6-236** Response body parameters

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

Status code: 401

Table 6-237 Response body parameters

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

Status code: 403**Table 6-238** Response body parameters

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

Status code: 404**Table 6-239** Response body parameters

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

Status code: 500**Table 6-240** Response body parameters

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

Example Requests

Query the metadata of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/config
```

Example Responses

Status code: 200

OK

```
{
  "func_id": "0d075978-5a54-4ee1-8e24-ff5bd070xxxx",
  "resource_id": "0d075978-5a54-4ee1-8e24-ff5bd070xxxx:test",
  "func_urn": "urn:fss:xxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:latest",
  "func_name": "test",
  "domain_id": "14ee2e3501124efcbca7998baa24xxxx",
  "namespace": "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name": "xxxxxxxx",
  "package": "default",
  "runtime": "Node.js6.10",
  "timeout": 3,
  "handler": "test.handler",
  "memory_size": 128,
  "cpu": 300,
  "code_type": "inline",
  "code_filename": "index.js",
  "code_size": 272,
  "digest":
    "faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9
    af322c55dabeb16565c386e402413458e6068",
  "version": "latest",
  "ephemeral_storage": 512,
  "image_name": "latest-191025153727@zehht",
  "last_modified": "2019-10-25 15:37:27",
  "strategy_config": {
    "concurrency": 0
  }
}
```

Status code: 404

Not found.

```
{
  "error_code": "FSS.1051",
  "error_msg": "Not found the function"
}
```

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](#).

6.6.7 Modifying the Metadata of a Function

Function

This API is used to modify the metadata of a function.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/config

Table 6-241 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-242 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-243 Request body parameters

Parameter	Mandatory	Type	Description
func_name	Yes	String	Function name.

Parameter	Mandatory	Type	Description
runtime	Yes	String	<p>Environment in which a FunctionGraph function is executed. Options:</p> <ul style="list-style-type: none"> • Python 2.7 • Python 3.6 • Python 3.9 • Go 1.8 • Go 1.x • Java 8 • Java 11 • Node.js 6.10 • Node.js 8.10 • Node.js 10.16 • Node.js 12.13 • Node.js 14.18 • C# (.NET Core 2.0) • C# (.NET Core 2.1) • C# (.NET Core 3.1) • Custom • PHP 7.3 • HTTP <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none">• http
timeout	Yes	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
handler	Yes	String	Handler of a function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.
memory_size	Yes	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
user_data	No	String	Name/Value information defined for the function. These are parameters used in a function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	No	String	User-defined name/value to be encrypted.

Parameter	Mandatory	Type	Description
xrole	No	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	No	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	No	String	Function description.
func_vpc	No	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	No	MountConfig object	Mounting configuration.
strategy_config	No	StrategyConfig object	Function policy configuration.
custom_image	No	CustomImage object	Container image.
extend_config	No	String	Extended configuration.
initializer_handler	No	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.

Parameter	Mandatory	Type	Description
initializer_timeout	No	Integer	Maximum duration the function can be initialized. Value range: 1s-300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	No	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	No	Integer	Maximum duration the function can be initialized. Value range: 1s-90s.
ephemeral_storage	No	Integer	Ephemeral storage. By default, the /tmp directory of each function is 512 MB. You can increase the size to 10,240 MB (10 GB) if necessary. Enumeration values: <ul style="list-style-type: none">• 512• 10240
enterprise_project_id	No	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
log_config	No	FuncLogConfig object	Function log configuration.
network_controller	No	NetworkControllerConfig object	Network configuration.
is_stateful_function	No	Boolean	Whether stateful functions are supported. If they are supported, set this parameter to true. This parameter is supported in FunctionGraph v2.
enable_dynamic_memory	No	Boolean	Whether to enable dynamic memory allocation.

Parameter	Mandatory	Type	Description
enable_auth_in_header	No	Boolean	Whether to allow authentication information in the request header.
domain_names	No	String	Private domain name.
restore_hook_handler	No	String	Restore Hook entry point for snapshot-based cold start in the format "xx.xx". The period (.) must be included. For example, com.xxx.demo.Test.restoreHook.
restore_hook_timeout	No	Integer	Restore Hook timeout of snapshot-based cold start. Range: 1s to 300s.
heartbeat_handler	No	String	Entry of the heartbeat function in the format of "xx.xx". It must contain a period (.). This parameter can be configured only in Java. The heartbeat function entry must be in the same file as your function handler. This parameter is mandatory when the heartbeat function is enabled.
enable_class_isolation	No	Boolean	Indicates whether to enable class isolation. This parameter can be configured only in Java. Enable to dump logs to Kafka and improve class loading efficiency. However, this may cause compatibility issues.

Table 6-244 FuncVpc

Parameter	Mandatory	Type	Description
domain_id	No	String	Domain name ID.
namespace	No	String	Project ID.
vpc_name	No	String	VPC name.
vpc_id	Yes	String	VPC ID.
subnet_name	No	String	Subnet name.

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Subnet ID.
cidr	No	String	Subnet mask.
gateway	No	String	Gateway.
security_groups	No	Array of strings	Security group.

Table 6-245 MountConfig

Parameter	Mandatory	Type	Description
mount_user	Yes	MountUser object	User information.
func_mounts	Yes	Array of FuncMount objects	Mounted resources.

Table 6-246 MountUser

Parameter	Mandatory	Type	Description
user_id	Yes	String	User ID, a non-0 integer from -1 to 65534.
user_group_id	Yes	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-247 FuncMount

Parameter	Mandatory	Type	Description
mount_type	Yes	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	Yes	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	No	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.

Parameter	Mandatory	Type	Description
local_mount_path	Yes	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-248 StrategyConfig

Parameter	Mandatory	Type	Description
concurrency	Yes	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none"> -1: The function has unlimited instances. 0: The function is disabled.
concurrent_num	Yes	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-249 CustomImage

Parameter	Mandatory	Type	Description
enabled	No	Boolean	Whether to enable this feature.
image	No	String	Image address.
command	No	String	Command for starting a container image.
args	No	String	Command line parameter for starting a container image.
working_dir	No	String	Working directory of an image container.
uid	No	String	User ID of an image container.
gid	No	String	User group ID of an image container.

Table 6-250 FuncLogConfig

Parameter	Mandatory	Type	Description
group_name	No	String	Name of the log group bound to the function.
group_id	No	String	ID of the log group bound to the function.
stream_name	No	String	Name of the log stream bound to the function.
stream_id	No	String	ID of the log stream bound to the function.

Table 6-251 NetworkControlConfig

Parameter	Mandatory	Type	Description
disable_public_network	No	Boolean	Disable public access.
trigger_access_vpcs	No	Array of VpcConfig objects	VPC access restriction.

Table 6-252 VpcConfig

Parameter	Mandatory	Type	Description
vpc_name	No	String	VPC name.
vpc_id	No	String	VPC ID.

Response Parameters

Status code: 200

Table 6-253 Response body parameters

Parameter	Type	Description
func_id	String	Function ID, which uniquely identifies a function.
resource_id	String	Function resource ID.
func_urn	String	Function URN.
func_name	String	Function name.

Parameter	Type	Description
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>

Parameter	Type	Description
memory_size	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in a function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.

Parameter	Type	Description
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v +year/month/day-hour/minute/second).
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	String	Function description.
last_modified	String	Time when the function was last updated.
ephemeral_storage	Integer	Ephemeral storage. By default, the /tmp directory of each function is 512 MB. You can increase the size to 10,240 MB (10 GB) if necessary. Enumeration values: <ul style="list-style-type: none">• 512• 10240
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	MountConfig object	Mounting configuration.
strategy_config	StrategyConfig object	Function policy configuration.
dependencies	Array of Dependency objects	Dependency packages.

Parameter	Type	Description
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
enable_cloud_debug	String	Whether to enable cloud debugging to adapt to the CloudDebug scenario. (discarded)
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
enable_authentication_header	Boolean	Whether to add authentication information to request header for custom image-based functions.
is_stateful_function	Boolean	Whether stateful functions are supported. This parameter is supported in FunctionGraph v2.

Parameter	Type	Description
domain_names	String	Private domain name configured for resolution.
custom_image	CustomImage object	Container image.
is_return_stream	Boolean	Whether to return stream data. (discarded)

Table 6-254 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.
namespace	String	Project ID.
vpc_name	String	VPC name.
vpc_id	String	VPC ID.
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-255 MountConfig

Parameter	Type	Description
mount_user	MountUser object	User information.
func_mounts	Array of FuncMount objects	Mounted resources.

Table 6-256 MountUser

Parameter	Type	Description
user_id	String	User ID, a non-0 integer from -1 to 65534.

Parameter	Type	Description
user_group_id	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-257 FuncMount

Parameter	Type	Description
mount_type	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.
local_mount_path	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-258 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-259 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Table 6-260 CustomImage

Parameter	Type	Description
enabled	Boolean	Whether to enable this feature.
image	String	Image address.
command	String	Command for starting a container image.
args	String	Command line parameter for starting a container image.
working_dir	String	Working directory of an image container.
uid	String	User ID of an image container.
gid	String	User group ID of an image container.

Status code: 400**Table 6-261** Response body parameters

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

Status code: 401**Table 6-262** Response body parameters

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

Status code: 403**Table 6-263** Response body parameters

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

Status code: 404**Table 6-264** Response body parameters

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

Status code: 500**Table 6-265** Response body parameters

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

Example Requests

- Modify the configuration of Node.js function fgsTest to change the memory to 768 MB and timeout to 40s. Add environment variable host and mount a disk.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/config
```

```
{
  "func_name": "fgsTest",
  "handler": "index.handler",
  "memory_size": 768,
  "user_data": "{\"host\":\"192.168.0.1\"}",
  "runtime": "Node.js6.10",
  "mount_config": {
    "mount_user": {
      "user_id": -1,
      "user_group_id": -1
    }
  },
  "func_mounts": [ {
    "mount_resource": "268xxx-d3xx-4cxx-98xx-d1dbxxx",
    "local_mount_path": "/mnt",
    "mount_type": "sfsTurbo"
  } ]
},
"timeout": 40
}
```

- Modify the GPU configuration of a custom runtime function to change the GPU memory to 1 GB and memory size to 4 GB.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/config
```

```
{
  "func_name": "test_GPU",
  "handler": "bootstrap",
  "memory_size": 4096,
  "runtime": "Custom",
  "timeout": 40,
  "gpu_memory": 1024
}
```

Example Responses

Status code: 200

OK

```
{
  "func_id" : "0d075978-5a54-4ee1-8e24-ff5bd070xxxx",
  "resource_id" : "0d075978-5a54-4ee1-8e24-ff5bd070xxxx:test",
  "func_urn" : "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
  "func_name" : "test",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "namespace" : "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name" : "xxxxx",
  "package" : "default",
  "runtime" : "Node.js6.10",
  "timeout" : 3,
  "handler" : "fssExampleCsharp2.1::fssExampleCsharp21.Program::MyFunc",
  "memory_size" : 128,
  "cpu" : 300,
  "code_type" : "inline",
  "code_filename" : "index.js",
  "code_size" : 272,
  "user_data" : "{\"host\":\"192.168.0.1\"}",
  "mount_config" : {
    "mount_user" : {
      "user_id" : -1,
      "user_group_id" : -1
    },
    "func_mounts" : [ {
      "mount_resource" : "268xxx-d3xx-4cxx-98xx-d1dbxxx",
      "local_mount_path" : "/mnt",
      "mount_type" : "sfsTurbo"
    } ]
  },
  "digest" :
  "faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9af322c55dabeb16565c386e402413458e6068",
  "version" : "latest",
  "ephemeral_storage" : 512,
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
  }
}
```

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](#).

6.6.8 Updating Max. Instances of a Function

Function

This API is used to update the maximum number of instances of a function.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/config-max-instance

Table 6-266 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-267 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-268 Request body parameters

Parameter	Mandatory	Type	Description
max_instance_num	No	Integer	Maximum number of instances. -1 indicates that the number of instances is unlimited, and 0 indicates that the function is disabled.

Response Parameters

Status code: 200

Table 6-269 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image

Parameter	Type	Description
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
handler	String	Handler of a function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.
memory_size	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.

Parameter	Type	Description
user_data	String	Name/Value information defined for the function. These are parameters used in a function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v+year/month/day-hour/minute/second).
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	String	Function description.
last_modified	String	Time when the function was last updated.
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	MountConfig object	Mounting configuration.
strategy_config	StrategyConfig object	Function policy configuration.

Parameter	Type	Description
dependencies	Array of Dependency objects	Dependency packages.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
enable_cloud_debug	String	Whether to enable cloud debugging to adapt to the CloudDebug scenario. (discarded)
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
is_stateful_function	Boolean	Whether stateful functions are supported. This parameter is supported in FunctionGraph v2.

Parameter	Type	Description
domain_names	String	Private domain name configured for resolution.
is_return_stream	Boolean	Whether to return stream data. (discarded)
enable_auth_info_header	Boolean	Whether to add authentication information to request header for custom image-based functions.

Table 6-270 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.
namespace	String	Project ID.
vpc_name	String	VPC name.
vpc_id	String	VPC ID.
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-271 MountConfig

Parameter	Type	Description
mount_user	MountUser object	User information.
func_mounts	Array of FuncMount objects	Mounted resources.

Table 6-272 MountUser

Parameter	Type	Description
user_id	String	User ID, a non-0 integer from -1 to 65534.

Parameter	Type	Description
user_group_id	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-273 FuncMount

Parameter	Type	Description
mount_type	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.
mount_share_path	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.
local_mount_path	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-274 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-275 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● Java8 ● Java11 ● Node.js6.10 ● Node.js8.10 ● Node.js10.16 ● Node.js12.13 ● Node.js14.18 ● Python2.7 ● Python3.6 ● Go1.8 ● Go1.x ● C#(.NET Core 2.0) ● C#(.NET Core 2.1) ● C#(.NET Core 3.1) ● Custom ● PHP7.3 ● Python3.9 ● http ● Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Status code: 400

Table 6-276 Response body parameters

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

Status code: 401**Table 6-277** Response body parameters

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

Status code: 403**Table 6-278** Response body parameters

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

Status code: 404**Table 6-279** Response body parameters

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

Status code: 500**Table 6-280** Response body parameters

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

Example Requests

Update the maximum number of instances of a function to 300.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/config-max-instance
{
  "max_instance_num" : 300
}
```

Example Responses

Status code: 200

OK

```
{
  "func_urn" : "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
  "func_name" : "test",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "namespace" : "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name" : "xxxxxx",
  "package" : "default",
  "runtime" : "Node.js6.10",
  "timeout" : 3,
  "handler" : "fssExampleCsharp2.1::fssExampleCsharp21.Program::MyFunc",
  "memory_size" : 128,
  "cpu" : 300,
  "code_type" : "inline",
  "code_filename" : "index.js",
  "code_size" : 272,
  "digest" :
"faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9
af322c55dabeb16565c386e402413458e6068",
  "version" : "latest",
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 300,
    "concurrent_num" : 1
  }
}
```

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](#).

6.6.9 Querying Function Tags

Function

This API is used to query function tags.

URI

GET /v2/{project_id}/{resource_type}/{resource_id}/tags

Table 6-281 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
resource_type	Yes	String	Resource type. Enter functions here.
resource_id	Yes	String	Resource ID, function URN.

Request Parameters

Table 6-282 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-283 Response body parameters

Parameter	Type	Description
tags	Array of KvItem objects	Tag list.
sys_tags	Array of KvItem objects	System tags.

Table 6-284 KvItem

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400**Table 6-285** Response body parameters

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

Status code: 401**Table 6-286** Response body parameters

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

Status code: 403**Table 6-287** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 500

Table 6-288 Response body parameters

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

Example Requests

This API is used to query all resource tags.

```
GET /v2/{project_id}/{resource_type}/{resource_id}/tags
```

Example Responses

Status code: 200

ok

```
{
  "tags": [ {
    "key": "xxx",
    "value": "yyy"
  } ],
  "sys_tags": [ {
    "key": "_sys_enterprise_project_id",
    "value": "5aa119a8-d25b-45a7-8d1b-88e127885635"
  } ]
}
```

Status Codes

Status Code	Description
200	ok
400	Bad request.
401	Unauthorized.
403	Forbidden.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.10 Enabling or Disabling the Snapshot Function

Function

This API is used to enable or disable the snapshot feature. It is available only for non-latest versions of Java functions.

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/snapshots/{action}

Table 6-289 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
action	Yes	String	Enabled or disabled. Enumeration values: <ul style="list-style-type: none">• enable• disable

Request Parameters

Table 6-290 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 400

Table 6-291 Response body parameters

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

Status code: 401**Table 6-292** Response body parameters

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

Status code: 403**Table 6-293** Response body parameters

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

Status code: 404**Table 6-294** Response body parameters

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

Status code: 500**Table 6-295** Response body parameters

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

Example Requests

- Enable the snapshot function.
POST `https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/snapshots/enable`
- Disable the snapshot function.
POST `https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/snapshots/disable`

Example Responses

Status code: 404

Not found.

```
{  
  "error_code" : "FSS.1051",  
  "error_msg" : "Not found the function"  
}
```

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](#).

6.6.11 Querying ServiceBridge Functions Bound to a Specified Function

Function

This API is used to query ServiceBridge functions bound to a specified function.

URI

GET `/v2/{project_id}/fgs/functions/{function_urn}/servicebridge/relation`

Table 6-296 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-297 Query Parameters

Parameter	Mandatory	Type	Description
type	No	String	ServiceBridge type.

Request Parameters

Table 6-298 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-299 Response body parameters

Parameter	Type	Description
[items]	Array of ListFunctionResult objects	Bridge functions bound to the function.

Table 6-300 ListFunctionResult

Parameter	Type	Description
resource_id	String	Resource ID.
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.

Parameter	Type	Description
handler	String	Handler of a function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.
memory_size	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
gpu_memory	Integer	GPU memory. This parameter is available only for functions created with a custom runtime or image. Unit: MB. Options: 1024, 2048, 3072, 4096, 5120, 6144, 7168, 8192, 9216, 10,240, 11,264, 12,288, 13,312, 14,336, 15,360, and 16,384. Range: 1024 to 16,384.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.

Parameter	Type	Description
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version.
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
app_xrole	String	Agency used by the function app. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
description	String	Function description.
last_modified	String	Time when the function was last updated.
func_vpc_id	String	VPC ID.
strategy_config	StrategyConfig object	Function policy configuration.
extend_config	String	Extended configuration.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.

Parameter	Type	Description
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
fail_count	Integer	Number of times that a function failed to be executed in the last day.
is_bridge_function	Boolean	Whether this is a bridge function.
bind_bridge_functionUrns	Array of strings	URNs bound to the bridge function.

Table 6-301 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">• -1: The function has unlimited instances.• 0: The function is disabled.
concurrent_number	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Status code: 401**Table 6-302** Response body parameters

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

Status code: 403**Table 6-303** Response body parameters

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

Status code: 404**Table 6-304** Response body parameters

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

Status code: 500**Table 6-305** Response body parameters

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

Example Requests

Query ServiceBridge functions bound to a specified function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/servicebridge/relation?type=rds
```


Example Responses

Status code: 200

ok

```
[ {
  "func_urn" : "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
  "func_name" : "bridge-test",
  "domain_id" : "cff01_hk",
  "namespace" : "7aad83af3e8d42e99ac194e8419e2c9b",
  "project_name" : "xxxxxxx",
  "package" : "default",
  "runtime" : "Node.js6.10",
  "timeout" : 3,
  "handler" : "test.handler",
  "memory_size" : 128,
  "cpu" : 300,
  "code_type" : "inline",
  "code_filename" : "index.js",
  "code_size" : 272,
  "digest" :
"decfce6939297b0b5ec6d1a23bf9c725870f5e69fc338a89a6a4029264688dc26338f56d08b6535de47f15ad538e22ca66613b9a46f807d50b687bb53fded1c6",
  "version" : "latest",
  "xrole" : "cff",
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
  },
  "initializer_handler" : "index.initializer",
  "initializer_timeout" : 3,
  "pre_stop_handler" : "index.pre_stop_handler",
  "pre_stop_timeout" : 3
} ]
```

Status Codes

Status Code	Description
200	ok
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.12 Querying Snapshot Status

Function

This API is used to query the snapshot status of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/snapshots/{action}

Table 6-306 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
action	Yes	String	Query snapshot status or whether snapshot cold start is used. Enumeration values: <ul style="list-style-type: none">• state• enableSnapshot

Request Parameters

Table 6-307 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-308 Response body parameters

Parameter	Type	Description
state	String	Snapshot status.
code	String	Snapshot response code.

Status code: 400**Table 6-309** Response body parameters

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

Status code: 401**Table 6-310** Response body parameters

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

Status code: 403**Table 6-311** Response body parameters

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

Status code: 404**Table 6-312** Response body parameters

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

Status code: 500**Table 6-313** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Example Requests

Query the snapshot status of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/snapshots/state
```

Example Responses

Status code: 200

OK

```
{  
  "state": "enable"  
}
```

Status code: 404

Not found.

```
{  
  "error_code": "FSS.1051",  
  "error_msg": "Not found the function"  
}
```

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](#).

6.6.13 Querying Resource Tags

Function

This API is used to query resource tags.

URI

GET /v2/{project_id}/{resource_type}/tags

Table 6-314 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
resource_type	Yes	String	Resource type. Enter "functions" here.

Request Parameters

Table 6-315 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-316 Response body parameters

Parameter	Type	Description
tags	Array of TagItem objects	Tag list.
sys_tags	Array of TagItem objects	System tags.

Table 6-317 TagItem

Parameter	Type	Description
key	String	Key.
values	Array of strings	Value.

Status code: 400**Table 6-318** Response body parameters

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

Status code: 401**Table 6-319** Response body parameters

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

Status code: 403**Table 6-320** Response body parameters

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

Status code: 500**Table 6-321** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Example Requests

Query resource tags.

```
GET https://{Endpoint}/v2/{project_id}/{resource_type}/tags
```

Example Responses

Status code: 200

ok

```
{
  "tags": [ {
    "key": "xxx",
    "values": [ "yyy", "zzz" ]
  } ],
  "sys_tags": [ {
    "key": "_sys_enterprise_project_id",
    "values": [ "5aa119a8-d25b-45a7-8d1b-88e127885635" ]
  } ]
}
```

Status Codes

Status Code	Description
200	ok
400	Bad request.
401	Unauthorized.
403	Forbidden.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.14 Querying Resources

Function

This API is used to query resources.

URI

POST /v2/{project_id}/{resource_type}/resource-instances/{action}

Table 6-322 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
resource_type	Yes	String	Resource type. Enter functions here.
action	Yes	String	Filter or count. Enumeration values: <ul style="list-style-type: none">• filter• count

Request Parameters

Table 6-323 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-324 Request body parameters

Parameter	Mandatory	Type	Description
without_any_tag	No	Boolean	Whether to use tag-based filtering.
limit	No	String	Number of records displayed on each page.
offset	No	String	Query offset.

Parameter	Mandatory	Type	Description
action	No	String	Query an action. Enumeration values: <ul style="list-style-type: none"> • count • filter
matches	No	Array of KvItem objects	Query a key-value pair.
sys_tags	No	Array of TagItem objects	Query system tags.

Table 6-325 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Table 6-326 TagItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
values	No	Array of strings	Value.

Response Parameters

Status code: 200

Table 6-327 Response body parameters

Parameter	Type	Description
resources	Array of ListEnterpriseResourceResult objects	Enterprise projects.
total_count	Long	Number of resources.

Table 6-328 ListEnterpriseResourceResult

Parameter	Type	Description
resource_id	String	Resource ID.
resource_detail	ListEnterpriseResourceDetail object	
tags	Array of Kvltem objects	Tag list.
sys_tags	Array of Kvltem objects	System tags.
resource_name	String	Resource name.

Table 6-329 ListEnterpriseResourceDetail

Parameter	Type	Description
detailId	String	Function URN.

Table 6-330 Kvltem

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400**Table 6-331** Response body parameters

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

Status code: 401

Table 6-332 Response body parameters

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

Status code: 403**Table 6-333** Response body parameters

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

Status code: 404**Table 6-334** Response body parameters

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

Status code: 500**Table 6-335** Response body parameters

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

Example Requests

Query resources.

```
POST https://{Endpoint}/v2/{project_id}/{resource_type}/resource-instances/{action}
{
  "without_any_tag" : true,
  "limit" : 5,
  "matches" : [ {
    "key" : "resource_name",
    "value" : "test_function"
```

```
  }]  
}
```

Example Responses

Status code: 200

ok

- Example 1

```
{  
  "resources": [ {  
    "resource_id": "34e4516e-e324-412b-914e-c4e568c7d813",  
    "resource_detail": {  
      "detailId": "urn:fss:{region-id}:xxx:function:default:test_xxx:latest"  
    },  
    "tags": [ ],  
    "sys_tags": [ {  
      "key": "_sys_enterprise_project_id",  
      "value": "df5edab8-c458-4a4c-b87b-a4d3b0a757ce"  
    } ],  
    "resource_name": "test_v2_1"  
  } ]  
}
```

- Example 2

```
1
```

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](#).

6.6.15 Deleting Resource Tags

Function

This API is used to delete resource tags.

URI

DELETE /v2/{project_id}/{resource_type}/{resource_id}/tags/delete

Table 6-336 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
resource_type	Yes	String	Resource type. Enter functions here.
resource_id	Yes	String	Resource ID.

Request Parameters

Table 6-337 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-338 Request body parameters

Parameter	Mandatory	Type	Description
action	No	String	Action name. Enumeration values: <ul style="list-style-type: none">• create• delete
tags	No	Array of KvItem objects	Tag list.
sys_tags	No	Array of KvItem objects	System tags.

Table 6-339 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Response Parameters

Status code: 400

Table 6-340 Response body parameters

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

Example Requests

Delete resource tags.

```
DELETE https://{Endpoint}/v2/{project_id}/{resource_type}/{resource_id}/tags/delete
{
  "tags": [ {
    "key": "testKey1",
    "value": "testValue1"
  } ],
  "action": "delete"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
400	Bad request.

Error Codes

See [Error Codes](#).

6.6.16 Creating Resource Tags

Function

This API is used to create resource tags.

URI

POST /v2/{project_id}/{resource_type}/{resource_id}/tags/create

Table 6-341 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
resource_type	Yes	String	Resource type. Enter functions here.
resource_id	Yes	String	Resource ID.

Request Parameters

Table 6-342 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-343 Request body parameters

Parameter	Mandatory	Type	Description
action	No	String	Action name. Enumeration values: <ul style="list-style-type: none">• create• delete

Parameter	Mandatory	Type	Description
tags	No	Array of KvItem objects	Tag list.
sys_tags	No	Array of KvItem objects	System tags.

Table 6-344 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Response Parameters

Status code: 400

Table 6-345 Response body parameters

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

Example Requests

Create resource tags testKey1:testValue1 and testKey2:testValue2.

```
POST https://{Endpoint}/v2/{project_id}/{resource_type}/{resource_id}/tags/create
{
  "tags": [ {
    "key": "testKey1",
    "value": "testValue1"
  }, {
    "key": "testKey2",
    "value": "testValue2"
  } ],
  "action": "create"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
400	Bad request.

Error Codes

See [Error Codes](#).

6.6.17 Updating the Pinning Status of a Function

Function

This API is used to update the pinning status of a function.

URI

PUT /v2/{project_id}/fgs/functions/{func_urn}/collect/{state}

Table 6-346 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
func_urn	Yes	String	Function URN.
state	Yes	String	Pinning status.

Request Parameters

Table 6-347 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 500

Table 6-348 Response body parameters

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

Example Requests

Update the pinning status of a function.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/collect/true
```

Example Responses

None

Status Codes

Status Code	Description
200	ok
500	Internal server error.

Error Codes

See [Error Codes](#).

6.6.18 Querying the Available ServiceBridge Version

Function

This API is used to query the available ServiceBridge version.

URI

```
GET /v2/{project_id}/fgs/servicebridge/version
```

Table 6-349 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-350 Query Parameters

Parameter	Mandatory	Type	Description
type	Yes	String	ServiceBridge type. The value can be rds, mqs, or cache.

Request Parameters

Table 6-351 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-352 Response body parameters

Parameter	Type	Description
[items]	Array of ServiceBridge Version objects	

Table 6-353 ServiceBridgeVersion

Parameter	Type	Description
name	String	Code package name.
version	String	Code version.
code_url	String	OBS path where the code is stored.

Status code: 400**Table 6-354** Response body parameters

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

Status code: 401**Table 6-355** Response body parameters

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

Status code: 403**Table 6-356** Response body parameters

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

Status code: 500**Table 6-357** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Example Requests

Query the available version of the ServiceBridge function of the rds type.

```
GET https://{Endpoint}/v2/{project_id}/fgs/servicebridge/version?type=rds
```

Example Responses

Status code: 200

ok

```
[ {  
  "name" : "xxx",  
  "version" : "xxx",  
  "code_url" : "xxx"  
}]
```

Status Codes

Status Code	Description
200	ok
400	Bad request.
401	Unauthorized.
403	Forbidden.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.7 Versions and Aliases

6.7.1 Querying All Versions and Aliases of a Function

Function

This API is used to query the versions and aliases of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/aliases

Table 6-358 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-359 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-360 Response body parameters

Parameter	Type	Description
[items]	Array of ListVersionAliasesResult objects	Function versions and aliases.

Table 6-361 ListVersionAliasResult

Parameter	Type	Description
name	String	Alias to be queried.

Parameter	Type	Description
version	String	Version corresponding to the alias.
description	String	Description of the alias.
last_modified	String	Time when the alias was last modified.
alias_urn	String	URN of the alias.
additional_version_weights	Map<String,Integer>	Dark launch information.

Status code: 401**Table 6-362** Response body parameters

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

Status code: 403**Table 6-363** Response body parameters

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

Status code: 404**Table 6-364** Response body parameters

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

Status code: 500

Table 6-365 Response body parameters

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

Status code: 503**Table 6-366** Response body parameters

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

Example Requests

Query aliases of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases
```

Example Responses

Status code: 200

OK

```
[{  
  "name" : "a1",  
  "version" : "latest",  
  "description" : "",  
  "last_modified" : "2019-10-31 11:37:58",  
  "alias_urn" : "urn:fss:{region}:46b6f338fc3445b8846c71dfb1fbxxxx:function:default:xxxxx:a1",  
  "additional_version_weights" : {  
    "v1" : 10  
  }  
}]
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Status Code	Description
503	Service unavailable.

Error Codes

See [Error Codes](#).

6.7.2 Creating an Alias for a Function Version

Function

This API is used to create an alias for a function version.

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/aliases

Table 6-367 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-368 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-369 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Alias.Max. 64 of letters, digits, hyphens (-), and underscores (_). Start with a letter, and end with a letter or digit. Minimum length: 1 character. Maximum length: 64 characters.
version	Yes	String	Version corresponding to the alias.
description	No	String	Description of the alias.
additional_version_weights	No	Map<String,Integer>	Traffic shifting by percentage.
additional_version_strategy	No	Map<String,VersionStrategy>	Traffic shifting by rule.

Table 6-370 VersionStrategy

Parameter	Mandatory	Type	Description
rules	No	Array of VersionStrategyRules objects	Rules.
combine_type	No	String	Rule aggregation mode. and: All rules are met. or: Any rule is met. Enumeration values: <ul style="list-style-type: none">• and• or

Table 6-371 VersionStrategyRules

Parameter	Mandatory	Type	Description
rule_type	No	String	Parameter type. Enumeration values: <ul style="list-style-type: none">• Header

Parameter	Mandatory	Type	Description
param	No	String	Rule parameter name, which can contain only letters, digits, underscores (_), and hyphens (-).
op	No	String	Rule matching operator. Currently, only = and in are supported. Enumeration values: <ul style="list-style-type: none">• in• =
value	No	String	Rule value. If op is set to in, the value is a multi-value character string separated by commas (,).

Response Parameters

Status code: 200

Table 6-372 Response body parameters

Parameter	Type	Description
name	String	Alias to be queried.
version	String	Version corresponding to the alias.
description	String	Description of the alias.
last_modified	String	Time when the alias was last modified.
alias_urn	String	URN of the alias.
additional_version_weights	Map<String,Integer>	Traffic shifting by percentage.
additional_version_strategy	Map<String,VersionStrategy>	Traffic shifting by rule.

Table 6-373 VersionStrategy

Parameter	Type	Description
rules	Array of VersionStrategyRules objects	Rules.
combine_type	String	Rule aggregation mode. and: All rules are met. or: Any rule is met. Enumeration values: <ul style="list-style-type: none">• and• or

Table 6-374 VersionStrategyRules

Parameter	Type	Description
rule_type	String	Parameter type. Enumeration values: <ul style="list-style-type: none">• Header
param	String	Rule parameter name, which can contain only letters, digits, underscores (_), and hyphens (-).
op	String	Rule matching operator. Currently, only = and in are supported. Enumeration values: <ul style="list-style-type: none">• in• =
value	String	Rule value. If op is set to in, the value is a multi-value character string separated by commas (,).

Status code: 400**Table 6-375** Response body parameters

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

Status code: 401

Table 6-376 Response body parameters

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

Status code: 403**Table 6-377** Response body parameters

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

Status code: 404**Table 6-378** Response body parameters

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

Status code: 500**Table 6-379** Response body parameters

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

Example Requests

- Create an alias named a1 for version v1 of a function.
POST `https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases`

```
{
  "name": "a1",
  "version": "v1"
}
```
- Create an alias named a1 for version v1 of a function, enable Traffic Shifting, and set Weight of version v2 to 50%.

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases
```

```
{
  "name": "a1",
  "version": "v1",
  "additional_version_weights": {
    "v2": 50
  }
}
```

- Create an alias named a1 for version v1 of a function, enable Traffic Shifting, and set version v2 to shift traffic by Rule.

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases
```

```
{
  "name": "a1",
  "version": "v1",
  "additional_version_strategy": {
    "v2": {
      "combine_type": "and",
      "rules": [ {
        "rule_type": "Header",
        "param": "version",
        "op": "=",
        "value": "v1"
      } ]
    }
  }
}
```

Example Responses

Status code: 200

ok

```
{
  "name": "a1",
  "version": "latest",
  "description": "",
  "last_modified": "2019-10-31 11:37:58",
  "alias_urn": "urn:fss:{region}:46b6f338fc3445b8846c71dfb1fbxxx:function:default:xxxx:!a1"
}
```

Status code: 404

Not found.

```
{
  "error_code": "FSS.1051",
  "error_msg": "Not found the function"
}
```

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](#).

6.7.3 Deleting an Alias of a Function Version

Function

This API is used to delete an alias of a function version.

URI

DELETE /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}

Table 6-380 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
alias_name	Yes	String	Alias to be deleted.

Request Parameters

Table 6-381 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 401

Table 6-382 Response body parameters

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

Status code: 403

Table 6-383 Response body parameters

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

Status code: 404

Table 6-384 Response body parameters

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

Status code: 500

Table 6-385 Response body parameters

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

Example Requests

Delete the alias of a function version.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}
```


Example Responses

None

Status Codes

Status Code	Description
204	No Content
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.7.4 Querying the Alias of a Function Version

Function

This API is used to query the alias of a function version.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}

Table 6-386 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
alias_name	Yes	String	Alias to be queried.

Request Parameters

Table 6-387 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-388 Response body parameters

Parameter	Type	Description
name	String	Alias to be queried.
version	String	Version corresponding to the alias.
description	String	Description of the alias.
last_modified	String	Time when the alias was last modified.
alias_urn	String	URN of the alias.
additional_version_weights	Map<String,Integer>	Traffic shifting by percentage.
additional_version_strategy	Map<String,VersionStrategy>	Traffic shifting by rule.

Table 6-389 VersionStrategy

Parameter	Type	Description
rules	Array of VersionStrategyRules objects	Rules.

Parameter	Type	Description
combine_type	String	Rule aggregation mode. and: All rules are met. or: Any rule is met. Enumeration values: <ul style="list-style-type: none"> • and • or

Table 6-390 VersionStrategyRules

Parameter	Type	Description
rule_type	String	Parameter type. Enumeration values: <ul style="list-style-type: none"> • Header
param	String	Rule parameter name, which can contain only letters, digits, underscores (_), and hyphens (-).
op	String	Rule matching operator. Currently, only = and in are supported. Enumeration values: <ul style="list-style-type: none"> • in • =
value	String	Rule value. If op is set to in, the value is a multi-value character string separated by commas (,).

Status code: 401

Table 6-391 Response body parameters

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

Status code: 403

Table 6-392 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 404**Table 6-393** Response body parameters

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

Status code: 500**Table 6-394** Response body parameters

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

Example Requests

Query the alias of a function version.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}
```

Example Responses

Status code: 200

OK

```
{
  "name" : "dev",
  "version" : "latest",
  "description" : "my dev version",
  "last_modified" : "2019-10-31 11:37:58",
  "alias_urn" : "urn:fss:xxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:!dev",
  "additional_version_weights" : {
    "v1" : 10
  }
}
```

Status code: 401

Unauthorized.

```
{
  "error_code" : "FSS.1053",
```

```
"error_msg" : "Not found the function alias"  
}
```

Status Codes

Status Code	Description
200	OK
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.7.5 Modifying the Alias of a Function Version

Function

This API is used to modify the alias of a function version.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}

Table 6-395 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
alias_name	Yes	String	Alias to be modified.

Request Parameters

Table 6-396 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-397 Request body parameters

Parameter	Mandatory	Type	Description
version	Yes	String	Version corresponding to the alias.
description	No	String	Description of the alias.
additional_version_weights	No	Map<String,Integer>	Dark launch information.
additional_version_strategy	No	Map<String,VersionStrategy>	Traffic shifting by Rule.

Table 6-398 VersionStrategy

Parameter	Mandatory	Type	Description
rules	No	Array of VersionStrategyRules objects	Rules.
combine_type	No	String	Rule aggregation mode. and: All rules are met. or: Any rule is met. Enumeration values: <ul style="list-style-type: none"> • and • or

Table 6-399 VersionStrategyRules

Parameter	Mandatory	Type	Description
rule_type	No	String	Parameter type. Enumeration values: <ul style="list-style-type: none">• Header
param	No	String	Rule parameter name, which can contain only letters, digits, underscores (_), and hyphens (-).
op	No	String	Rule matching operator. Currently, only = and in are supported. Enumeration values: <ul style="list-style-type: none">• in• =
value	No	String	Rule value. If op is set to in, the value is a multi-value character string separated by commas (,).

Response Parameters

Status code: 200

Table 6-400 Response body parameters

Parameter	Type	Description
name	String	Alias to be queried.
version	String	Version corresponding to the alias.
description	String	Description of the alias.
last_modified	String	Time when the alias was last modified.
alias_urn	String	URN of the alias.
additional_version_weights	Map<String,Integer>	Dark launch information.

Status code: 400

Table 6-401 Response body parameters

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

Status code: 401**Table 6-402** Response body parameters

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

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

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

Status code: 404**Table 6-404** Response body parameters

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

Status code: 500**Table 6-405** Response body parameters

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

Example Requests

- Update the function version of alias {alias_name} to latest, and configure v1 as the additional version with a traffic ratio of 9:1.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}
```

```
{
  "version": "latest",
  "description": "",
  "additional_version_weights": {
    "v1": 10
  }
}
```

- Update the function version of alias {alias_name} to v1, enable Traffic Shifting and set version v2 to shift traffic by Rule.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}
```

```
{
  "version": "v1",
  "description": "",
  "additional_version_strategy": {
    "v2": {
      "combine_type": "and",
      "rules": [ {
        "rule_type": "Header",
        "param": "version",
        "op": "=",
        "value": "v1"
      } ]
    }
  }
}
```

Example Responses

Status code: 200

ok

```
{
  "name": "dev",
  "version": "latest",
  "description": "",
  "last_modified": "2019-10-31 11:37:58",
  "alias_urn": "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:!dev",
  "additional_version_weights": {
    "v1": 10
  }
}
```

Status code: 404

Not found.

```
{
  "error_code": "FSS.1051",
  "error_msg": "Not found the function"
}
```

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](#).

6.7.6 Querying the Versions of a Function

Function

This API is used to query the versions of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/versions

Table 6-406 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-407 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time.
maxitems	No	String	Maximum number of functions to obtain in a request.

Request Parameters

Table 6-408 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-409** Response body parameters

Parameter	Type	Description
versions	Array of ListFunctionVersionResult objects	Version list.
next_marker	Long	Next record location.
count	Long	Total number of versions.

Table 6-410 ListFunctionVersionResult

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>
memory_size	Integer	<p>Memory consumed by a function.</p> <p>Unit: MB.</p> <p>The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096.</p> <p>The value ranges from 128 to 4096.</p>

Parameter	Type	Description
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v+year/month/day-hour/minute/second).
image_name	String	Internal identifier of a function version.

Parameter	Type	Description
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_xrole	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
last_modified	String	Time when the function was last updated.
func_vpc_id	String	VPC ID.
concurrency	Integer	0: A function is disabled. -1: A function is enabled.
concurrent_number	Integer	Number of concurrent instances.
strategy_config	StrategyConfig object	Function policy configuration.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s-300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s-90s.
long_time	Boolean	Whether long-term running is supported.

Parameter	Type	Description
function_async_config	FunctionAsyncConfig object	Return struct of the asynchronous execution notification settings.
type	String	Function version.
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
is_stateful_function	Boolean	Whether stateful functions are supported. This parameter is supported in FunctionGraph v2.
enable_auth_in_header	Boolean	Whether to allow authentication information in the request header.
custom_image	CustomImage object	Container image.
reserved_instance_idle_mode	Boolean	Whether to enable idle mode for reserved instances.

Table 6-411 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-412 FunctionAsyncConfig

Parameter	Type	Description
max_async_event_age_in_seconds	Integer	Maximum validity period of a message. Value range: 60–86,400. Unit: second.

Parameter	Type	Description
max_async_retry_attempts	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 3. Value range: 0–8.
destination_config	FuncAsyncDestinationConfig object	Asynchronous invocation target.
created_time	String	Time when asynchronous execution notification was configured.
last_modified	String	Time when the asynchronous execution notification settings were last modified.

Table 6-413 FuncAsyncDestinationConfig

Parameter	Type	Description
on_success	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.
on_failure	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-414 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph

Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none">• OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire.• SMN: The topic_urn parameter is included.• DIS: The stream_name parameter is included.• FunctionGraph: The func_urn parameter is included.

Table 6-415 CustomImage

Parameter	Type	Description
enabled	Boolean	Whether to enable this feature.
image	String	Image address.
command	String	Command for starting a container image.
args	String	Command line parameter for starting a container image.
working_dir	String	Working directory of an image container.
uid	String	User ID of an image container.
gid	String	User group ID of an image container.

Status code: 400**Table 6-416** Response body parameters

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

Status code: 401

Table 6-417 Response body parameters

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

Status code: 403**Table 6-418** Response body parameters

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

Status code: 404**Table 6-419** Response body parameters

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

Status code: 500**Table 6-420** Response body parameters

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

Example Requests

Query functions.

GET https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/versions

Example Responses

Status code: 200

OK

```
{
  "versions": [ {
    "func_urn": "urn:fss:xxxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
    "func_name": "test",
    "domain_id": "14ee2e3501124efcbca7998baa24xxxx",
    "namespace": "46b6f338fc3445b8846c71dfb1fbxxxx",
    "project_name": "xxxxx",
    "package": "default",
    "runtime": "Node.js6.10",
    "timeout": 3,
    "handler": "test.handler",
    "memory_size": 128,
    "cpu": 300,
    "code_type": "inline",
    "code_filename": "index.js",
    "code_size": 272,
    "digest":
      "faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9
      af322c55dabeb16565c386e402413458e6068",
    "version": "latest",
    "image_name": "latest-191025153727@zehht",
    "last_modified": "2019-10-25 15:37:27",
    "strategy_config": {
      "concurrency": 0
    }
  }
  ],
  "next_marker": 5
}
```

Status code: 404

Not found.

```
{
  "error_code": "FSS.1051",
  "error_msg": "Not found the function"
}
```

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](#).

6.7.7 Publishing a Function Version

Function

This API is used to publish a function version.

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/versions

Table 6-421 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-422 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-423 Request body parameters

Parameter	Mandatory	Type	Description
digest	No	String	MD5 key.
version	No	String	Function version.
description	No	String	Version description.

Response Parameters

Status code: 200

Table 6-424 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.

Parameter	Type	Description
handler	String	Handler of a function in the format of "xx.xx". It must contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.
memory_size	Integer	Memory consumed by a function. Unit: MB. The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096. The value ranges from 128 to 4096.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.

Parameter	Type	Description
encrypted_user_data	String	User-defined name/value to be encrypted.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v+year/month/day-hour/minute/second).
image_name	String	Internal identifier of a function version.
role	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services. After specifying a function execution agency, you can use the context method in the function handler to obtain a token, an AK, and an SK for accessing other cloud services. No agency is required if FunctionGraph does not access any cloud services.
app_role	String	Execution agency. You can optimize performance by configuring a separate agency for function execution, otherwise, the same agency is used for both execution and configuration.
description	String	Function description.
version_description	String	Version description.
last_modified	String	Time when the function was last updated.
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
mount_config	MountConfig object	Mounting configuration.
strategy_config	StrategyConfig object	Function policy configuration.
dependencies	Array of Dependency objects	Dependency packages.

Parameter	Type	Description
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.
long_time	Boolean	Whether to allow a long timeout.
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: <ul style="list-style-type: none">• v1• v2
enable_dynamic_memory	Boolean	Whether to enable dynamic memory allocation.
function_async_config	FunctionAsyncConfig object	Return struct of the asynchronous execution notification settings.

Table 6-425 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.

Parameter	Type	Description
namespace	String	Project ID.
vpc_name	String	VPC name.
vpc_id	String	VPC ID.
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-426 MountConfig

Parameter	Type	Description
mount_user	MountUser object	User information.
func_mounts	Array of FuncMount objects	Mounted resources.

Table 6-427 MountUser

Parameter	Type	Description
user_id	String	User ID, a non-0 integer from -1 to 65534.
user_group_id	String	User group ID, a non-0 integer from -1 to 65534.

Table 6-428 FuncMount

Parameter	Type	Description
mount_type	String	Mount type. The value can be sfs, sfsTurbo, or ecs. This parameter is mandatory when func_mounts is not empty.
mount_resource	String	ID of the mounted resource (cloud service ID). This parameter is mandatory when func_mounts is not empty.

Parameter	Type	Description
mount_share_path	String	Remote mount path. For example, 192.168.0.12:/data. This parameter is mandatory if mount_type is set to ecs.
local_mount_path	String	Function access path. This parameter is mandatory when func_mounts is not empty.

Table 6-429 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Table 6-430 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.
link	String	URL of the dependency on OBS.

Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Enumeration values: <ul style="list-style-type: none">• Java8• Java11• Node.js6.10• Node.js8.10• Node.js10.16• Node.js12.13• Node.js14.18• Python2.7• Python3.6• Go1.8• Go1.x• C#(.NET Core 2.0)• C#(.NET Core 2.1)• C#(.NET Core 3.1)• Custom• PHP7.3• Python3.9• http• Custom Image
etag	String	MD5 value of a dependency.
size	Long	Dependency size.
name	String	Dependence name.
description	String	Dependency description.
file_name	String	File name of a dependency package (ZIP).
version	Long	Dependency version ID.
dep_id	String	Dependency ID.
last_modified	String	Time when the function was last updated.

Table 6-431 FunctionAsyncConfig

Parameter	Type	Description
max_async_event_age_in_seconds	Integer	Maximum validity period of a message. Value range: 60–86,400. Unit: second.
max_async_retry_attempts	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 3. Value range: 0–8.
destination_config	FuncAsyncDestinationConfig object	Asynchronous invocation target.
created_time	String	Time when asynchronous execution notification was configured.
last_modified	String	Time when the asynchronous execution notification settings were last modified.

Table 6-432 FuncAsyncDestinationConfig

Parameter	Type	Description
on_success	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.
on_failure	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-433 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph

Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none">• OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire.• SMN: The topic_urn parameter is included.• DIS: The stream_name parameter is included.• FunctionGraph: The func_urn parameter is included.

Status code: 400**Table 6-434** Response body parameters

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

Status code: 401**Table 6-435** Response body parameters

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

Status code: 403**Table 6-436** Response body parameters

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

Status code: 404

Table 6-437 Response body parameters

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

Status code: 500**Table 6-438** Response body parameters

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

Example Requests

Publish a function version.

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/versions
{
  "version": "v1",
  "description": "v1"
}
```

Example Responses

Status code: 200

OK

```
{
  "func_urn": "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
  "func_name": "test",
  "domain_id": "14ee2e3501124efcbca7998baa24xxxx",
  "namespace": "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name": "xxxx",
  "package": "default",
  "runtime": "Node.js6.10",
  "timeout": 3,
  "handler": "test.handler",
  "memory_size": 128,
  "cpu": 300,
  "code_type": "inline",
  "code_filename": "inline.js",
  "code_size": 272,
  "digest":
    "faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9
    af322c55dabeb16565c386e402413458e6068",
  "version": "latest",
  "image_name": "latest-191025153727@zehht",
  "last_modified": "2019-10-25 15:37:27",
  "strategy_config": {
    "concurrency": 0
  }
}
```

```
}  
}
```

Status code: 404

Not found.

```
{  
  "error_code" : "FSS.1051",  
  "error_msg" : "Not found the function"  
}
```

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](#).

6.8 Function Metrics

6.8.1 Querying Top Functions for a Specified Metric

Function

This API is used to query the top functions for a specified metric.

By default, the top ten functions with the most errors in the last day are queried.

URI

GET /v2/{project_id}/fgs/function/report

Table 6-439 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-440 Query Parameters

Parameter	Mandatory	Type	Description
type	No	String	Metric type. Default value: failcount.
start_time	No	String	Start time.
end_time	No	String	End time.
limit	No	String	Metric type. Default value: failcount.

Request Parameters

Table 6-441 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-442 Response body parameters

Parameter	Type	Description
values	Array of FunctionMetric objects	Function URN and metrics.
next_marker	Long	Next read location.
count	Long	Total number of functions returned.

Table 6-443 FunctionMetric

Parameter	Type	Description
key	String	Function URN.
value	Integer	Metric value.

Status code: 400

Table 6-444 Response body parameters

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

Example Requests

Query the top functions for a specified metric.

```
GET /v2/{project_id}/fgs/function/report
```

Example Responses

Status code: 200

Query successful.

```
{
  "next_marker" : 2,
  "count" : 2,
  "values" : [ {
    "key" : "funcUrn1",
    "value" : 1
  }, {
    "key" : "funcUrn2",
    "value" : 2
  } ]
}
```

Status Codes

Status Code	Description
200	Query successful.
400	Bad Request

Error Codes

See [Error Codes](#).

6.8.2 Querying Tenant-Level Function Statistics

Function

This API is used to query tenant-level function statistics.

The statistics include function format, quota and usage, and traffic report.

You can query data in a specific period using the filter and period parameters.

URI

GET /v2/{project_id}/fgs/functions/statistics

Table 6-445 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-446 Query Parameters

Parameter	Mandatory	Type	Description
filter	Yes	String	Parameter filter. <ul style="list-style-type: none">• monitor_data: Query detailed statistics.• monthly_report: Query monthly statistics. Enumeration values: <ul style="list-style-type: none">• monitor_data• monthly_report
period	No	String	The unit is minute. This parameter must be used together with the filter parameter metric.

Parameter	Mandatory	Type	Description
option	No	String	Monthly statistical period. This parameter is valid only when filter is set to monthly_report. If a value beyond the preceding range is specified, the default value 0 will be used. <ul style="list-style-type: none">0: current month1: last month2: last three months3: last six months
limit	No	String	Maximum number of data records returned in a request. Max.: 500. Default: 100. Default: 100 Minimum: 1 Maximum: 64
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 1 Maximum: 64

Request Parameters

Table 6-447 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-448 Response body parameters

Parameter	Type	Description
count	Array of MonthUsed objects	Number of monthly invocations.
gbs	Array of MonthUsed objects	Monthly resource usage.
gpu_gbs	Array of MonthUsed objects	Monthly GPU usage.
statistics	ListFunctionStatisticsResponseBody object	Function Metrics

Table 6-449 MonthUsed

Parameter	Type	Description
date	String	Date.
value	Number	Usage.

Table 6-450 ListFunctionStatisticsResponseBody

Parameter	Type	Description
count	Array of SlaReportsValue objects	Function invocations.
duration	Array of SlaReportsValue objects	Average latency, in milliseconds.
fail_count	Array of SlaReportsValue objects	Number of errors.
max_duration	Array of SlaReportsValue objects	Maximum latency, in milliseconds.
min_duration	Array of SlaReportsValue objects	Minimum latency, in milliseconds.

Parameter	Type	Description
reject_count	Array of SlaReportsValue objects	Number of throttles.
function_error_count	Array of SlaReportsValue objects	Number of function errors.
system_error_count	Array of SlaReportsValue objects	Number of system errors.
reserved_instance_num	Array of SlaReportsValue objects	Reserved instance metrics.
concurrency_num	Array of SlaReportsValue objects	Elastic instance metrics.

Table 6-451 SlaReportsValue

Parameter	Type	Description
timestamp	Integer	Timestamp.
value	Double	Value. If the value is -1, the metric has no data in the current period. The possible cause is that the function is not executed.

Status code: 400

Table 6-452 Response body parameters

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

Example Requests

Query tenant-level function statistics.

```
GET /v2/{project_id}/fgs/functions/statistics
```

Example Responses

Status code: 200

Query successful.

```
{
  "statistics": {
    "count": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 2
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ],
    "duration": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 950
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ],
    "fail_count": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 0
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ],
    "max_duration": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 740
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ],
    "min_duration": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 210
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ],
    "reject_count": [ {
      "timestamp": 1596679200000,
      "value": -1
    }, {
      "timestamp": 1596682800000,
      "value": 0
    }, {
      "timestamp": 1596686400000,
      "value": -1
    } ]
  }
}
```

Status Codes

Status Code	Description
200	Query successful.
400	Bad Request

Error Codes

See [Error Codes](#).

6.8.3 Querying Metrics in a Specified Period

Function

This API is used to query metrics of a function in a specified period.

URI

GET /v2/{project_id}/fgs/functions/{func_urn}/statistics/{period}

Table 6-453 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
func_urn	Yes	String	Function URN. For details, see the function model description.
period	Yes	String	Time range specified to query function execution metrics.

Request Parameters

Table 6-454 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-455 Response body parameters

Parameter	Type	Description
count	Array of SlaReportsValue objects	Function invocations.
duration	Array of SlaReportsValue objects	Average latency, in milliseconds.
fail_count	Array of SlaReportsValue objects	Number of errors.
max_duration	Array of SlaReportsValue objects	Maximum latency, in milliseconds.
min_duration	Array of SlaReportsValue objects	Minimum latency, in milliseconds.
reject_count	Array of SlaReportsValue objects	Number of throttles.
function_error_count	Array of SlaReportsValue objects	Number of function errors.
system_error_count	Array of SlaReportsValue objects	Number of system errors.
reserved_instance_num	Array of SlaReportsValue objects	Reserved instance metrics.
concurrency_num	Array of SlaReportsValue objects	Elastic instance metrics.

Table 6-456 SlaReportsValue

Parameter	Type	Description
timestamp	Integer	Timestamp.
value	Double	Value. If the value is -1, the metric has no data in the current period. The possible cause is that the function is not executed.

Example Requests

Query metrics of a function in a specified period.

```
GET /v2/{project_id}/fgs/functions/{func_urn}/statistics/{period}
```

Example Responses

Status code: 200

ok

```
{
  "count": [ {
    "timestamp": 1596679200000,
    "value": -1
  }, {
    "timestamp": 1596682800000,
    "value": 2
  }, {
    "timestamp": 1596686400000,
    "value": -1
  } ],
  "duration": [ {
    "timestamp": 1596679200000,
    "value": -1
  }, {
    "timestamp": 1596682800000,
    "value": 950
  }, {
    "timestamp": 1596686400000,
    "value": -1
  } ],
  "fail_count": [ {
    "timestamp": 1596679200000,
    "value": -1
  }, {
    "timestamp": 1596682800000,
    "value": 0
  }, {
    "timestamp": 1596686400000,
    "value": -1
  } ],
  "max_duration": [ {
    "timestamp": 1596679200000,
    "value": -1
  }, {
    "timestamp": 1596682800000,
    "value": 740
  }, {
    "timestamp": 1596686400000,
    "value": -1
  } ],
}
```

```
"min_duration": [ {
  "timestamp": 1596679200000,
  "value": -1
}, {
  "timestamp": 1596682800000,
  "value": 210
}, {
  "timestamp": 1596686400000,
  "value": -1
} ],
"reject_count": [ {
  "timestamp": 1596679200000,
  "value": -1
}, {
  "timestamp": 1596682800000,
  "value": 0
}, {
  "timestamp": 1596686400000,
  "value": -1
} ]
}
```

Status Codes

Status Code	Description
200	ok

Error Codes

See [Error Codes](#).

6.8.4 Querying Instance Usage Metrics of a Specified Function

Function

Query instance usage metrics of a function.

- The metric unit is minute. If the query time range is less than 1 hour, the metric period is 1 minute. If the query time range is less than 1 day, the metric period is 30 minutes. If the query time range is greater than 1 day, the metric period is 180 minutes.
- Metrics are classified into the following types: reservedinstancenum (usage of reserved instances) and concurrency (instance usage/concurrency).

URI

GET /v2/{project_id}/fgs/functions/{func_urn}/instancereports

Table 6-457 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
func_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-458 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 0 Maximum: 64
limit	No	String	Maximum number of data records returned in a request. Max.: 500. Default: 100. Default: 100 Minimum: 0 Maximum: 64

Request Parameters

Table 6-459 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-460 Response body parameters

Parameter	Type	Description
instanceNum	Array of SlaReportsValue objects	Elastic instance metrics.
reservedInstanceNum	Array of SlaReportsValue objects	Reserved instance metrics.

Table 6-461 SlaReportsValue

Parameter	Type	Description
timestamp	Integer	Timestamp.
value	Double	Value. If the value is -1, the metric has no data in the current period. The possible cause is that the function is not executed.

Status code: 500

Table 6-462 Response body parameters

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

Example Requests

Query instance usage metrics of a function.

```
GET /v2/{project_id}/fgs/functions/{func_urn}/instancereports
```

Example Responses

Status code: 200

ok

```
{
  "instanceNum": [ {
    "timestamp": 1596679200000,
    "value": -1
  }, {
    "timestamp": 1596682800000,
    "value": 2
  }, {
    "timestamp": 1596686400000,
```

```
"value" : -1
}],
"reservedInstanceNum" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}, {
  "timestamp" : 1596686400000,
  "value" : -1
} ]
}
```

Status Codes

Status Code	Description
200	ok
500	Internal server error.

Error Codes

See [Error Codes](#).

6.8.5 Querying Instance Traffic Metrics of a Function

Function

This API is used to query the instance traffic metrics of a function.

URI

GET /v2/{project_id}/fgs/functions/{func_urn}/slareports/{period}

Table 6-463 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
func_urn	Yes	String	Function URN. For details, see the function model description.
period	Yes	String	Interval (min)

Request Parameters

Table 6-464 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-465** Response body parameters

Parameter	Type	Description
concurrency_num	Array of SlaReportsValue objects	Concurrency.
count	Array of SlaReportsValue objects	Number of invocations.
duration	Array of SlaReportsValue objects	Average latency, in milliseconds.
fail_count	Array of SlaReportsValue objects	Number of errors.
function_error_count	Array of SlaReportsValue objects	Number of function errors.
system_error_count	Array of SlaReportsValue objects	Number of system errors.
instance_num	Array of SlaReportsValue objects	Number of elastic instances.

Parameter	Type	Description
max_duration	Array of SlaReportsValue objects	Maximum latency, in milliseconds.
min_duration	Array of SlaReportsValue objects	Minimum latency, in milliseconds.
reject_count	Array of SlaReportsValue objects	Number of throttles.
reserved_instance_num	Array of SlaReportsValue objects	Number of reserved instances.

Table 6-466 SlaReportsValue

Parameter	Type	Description
timestamp	Integer	Timestamp.
value	Double	Value. If the value is -1, the metric has no data in the current period. The possible cause is that the function is not executed.

Status code: 500

Table 6-467 Response body parameters

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

Example Requests

Query instance traffic metrics of a function.

```
GET /v2/{project_id}/fgs/functions/{func_urn}/slareports/{period}
```

Example Responses

Status code: 200

ok

```
{
  "concurrency_num" : [ {
```

```
"timestamp" : 1596679200000,
"value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 2
}],
"count" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"duration" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"fail_count" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"function_error_count" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"instance_num" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"max_duration" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"min_duration" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"reject_count" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
"reserved_instance_num" : [ {
  "timestamp" : 1596679200000,
  "value" : -1
}, {
  "timestamp" : 1596682800000,
  "value" : 950
}],
}],
```



```
"system_error_count" : [ {  
  "timestamp" : 1596679200000,  
  "value" : -1  
}, {  
  "timestamp" : 1596682800000,  
  "value" : 950  
} ]  
}
```

Status Codes

Status Code	Description
200	ok
500	Internal server error.

Error Codes

See [Error Codes](#).

6.9 Function Logs

6.9.1 Querying Details About Asynchronous Invocation Logs

Function

This API is used to query details about asynchronous invocation logs.

URI

GET /v2/{project_id}/fgs/functions/async-status-log-detail

Table 6-468 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-469 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-470 Response body parameters

Parameter	Type	Description
group_name	String	Log group name.
group_id	String	Log group ID.
stream_id	String	Log stream ID.
stream_name	String	Log stream name.

Status code: 401

Table 6-471 Response body parameters

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

Example Requests

Query details about asynchronous invocation logs.

```
GET /v2/{project_id}/fgs/functions/async-status-log-detail
```

Example Responses

Status code: 200

Ok

```
{
  "group_id" : "xxx",
  "group_name" : "xxx",
  "stream_id" : "xxx",
  "stream_name" : "xxx"
}
```

Status code: 401

FORBIDDEN

```
{
  "error_code" : "FSS.0401",
  "error_msg" : "invalid token"
}
```

Status Codes

Status Code	Description
200	Ok
401	FORBIDDEN

Error Codes

See [Error Codes](#).

6.9.2 Querying the Log Group and Stream of a Function

Function

This API is used to query the LTS log group and stream settings of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/lts-log-detail

Table 6-472 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-473 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-474 Response body parameters

Parameter	Type	Description
group_name	String	Log group name.
group_id	String	Log group ID.
stream_id	String	Log stream ID.
stream_name	String	Log stream name.

Status code: 403

Table 6-475 Response body parameters

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

Example Requests

Query the LTS log group and stream settings of a function.

```
GET /v2/{project_id}/fgs/functions/{urn}/lts-log-detail
```

Example Responses

Status code: 200

Ok

```
{
  "group_id" : "xxx",
  "stream_id" : "xxx",
  "stream_name" : "xxx"
}
```

Status code: 403

FORBIDDEN

```
{
  "error_code" : "FSS.0403",
  "error_msg" : "invalid token"
}
```

Status Codes

Status Code	Description
200	Ok
403	FORBIDDEN

Error Codes

See [Error Codes](#).

6.9.3 Enabling Log Reporting to LTS

Function

This API is used to enable log reporting to LTS.

URI

POST /v2/{project_id}/fgs/functions/enable-lts-logs

Table 6-476 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-477 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 429

Table 6-478 Response body parameters

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

Example Requests

Enable log reporting to LTS.

```
POST /v2/{project_id}/fgs/functions/enable-lts-logs
```

Example Responses

Status code: 429

Too many requests.

```
{
  "error_code" : "FSS.0429",
  "error_msg" : "api is busy now"
}
```

Status Codes

Status Code	Description
200	ok
429	Too many requests.

Error Codes

See [Error Codes](#).

6.9.4 Enabling Asynchronous Status Notification

Function

Enable asynchronous status notification.

URI

POST /v2/{project_id}/fgs/functions/enable-async-status-logs

Table 6-479 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-480 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

None

Example Requests

Enable asynchronous status notification.

```
POST /v2/{project_id}/fgs/functions/enable-async-status-logs
```

Example Responses

None

Status Codes

Status Code	Description
200	ok

Error Codes

See [Error Codes](#).

6.10 Function Templates

6.10.1 Querying Function Templates

Function

This API is used to query function templates.

URI

GET /v2/{project_id}/fgs/templates

Table 6-481 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-482 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 1 Maximum: 64

Parameter	Mandatory	Type	Description
maxitems	No	String	Maximum number of templates obtained in each query.
ispublic	No	String	Indicates whether the template is public.
runtime	No	String	Runtime template.
scene	No	String	Scenario template.
service	No	String	Cloud service template.

Request Parameters

Table 6-483 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-484 Response body parameters

Parameter	Type	Description
func_templates	Array of ShowFunctionTemplateResponseBody objects	Function templates.
next_marker	Integer	Next read location.

Table 6-485 ShowFunctionTemplateResponseBody

Parameter	Type	Description
id	String	Template ID.
type	Integer	Template type.
title	String	Template title.
template_name	String	Template name.
description	String	Template description.
runtime	String	Template runtime.
handler	String	Template handler.
code_type	String	Code type.
code	String	Code file.
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
memory_size	Integer	Memory size.
trigger_metadata_list	Array of TriggerMetadataList objects	Trigger information.
temp_detail	TempDetail object	
user_data	String	User data.
encrypted_user_data	String	Encrypted user data.
dependencies	Array of strings	Dependencies required by the template.
scene	String	Template application scenarios.
service	String	Cloud service associated with the template.

Table 6-486 TriggerMetadataList

Parameter	Type	Description
trigger_name	String	Trigger name.
trigger_type	String	Trigger type.
event_type	String	Event type.

Parameter	Type	Description
event_data	String	Event data.

Table 6-487 TempDetail

Parameter	Type	Description
input	String	Template input.
output	String	Template output.
warning	String	Warning.

Status code: 400**Table 6-488** Response body parameters

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

Status code: 401**Table 6-489** Response body parameters

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

Status code: 403**Table 6-490** Response body parameters

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

Status code: 500

Table 6-491 Response body parameters

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

Example Requests

Query 500 public function templates.

```
GET /v2/{project_id}/fgs/templates?marker=0&maxitems=500&ispublic=true
```

Example Responses

Status code: 200

OK

```
{
  "func_templates" : [ {
    "id" : "d3aa6e4c-xxxx-xxxx-9c09-5c50c4xxxxxx",
    "type" : 1,
    "title" : "access-service-with-http",
    "template_name" : "access-service-with-http-php",
    "description" : "access service with http.",
    "runtime" : "PHP7.3",
    "handler" : "index.handler",
    "code_type" : "inline",
    "code" : "xxxxx",
    "timeout" : 30,
    "memory_size" : 256,
    "trigger_metadata_list" : [ ],
    "temp_detail" : {
      "input" : "None",
      "output" : "execution succeed: Return to access service information through http/https,",
      "warning" : "1. configure the serveraddress environment variables."
    },
    "user_data" : "",
    "encrypted_user_data" : "",
    "dependencies" : [ ],
    "scene" : "basic_function_usage",
    "service" : "FunctionGraph"
  } ],
  "next_marker" : 1
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request.
401	Unauthorized.
403	Forbidden.

Status Code	Description
500	Internal server error.

Error Codes

See [Error Codes](#).

6.10.2 Querying a Specified Function Template

Function

This API is used to query a specified function template.

URI

GET /v2/{project_id}/fgs/templates/{template_id}

Table 6-492 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
template_id	Yes	String	Template ID.

Request Parameters

Table 6-493 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-494 Response body parameters

Parameter	Type	Description
id	String	Template ID.
type	Integer	Template type.
title	String	Template title.
template_name	String	Template name.
description	String	Template description.
runtime	String	Template runtime.
handler	String	Template handler.
code_type	String	Code type.
code	String	Code file.
timeout	Integer	Maximum duration the function can be executed. Value range: 3s-259,200s.
memory_size	Integer	Memory size.
trigger_metadata_list	Array of TriggerMetadataList objects	Trigger information.
temp_detail	TempDetail object	
user_data	String	User data.
encrypted_user_data	String	Encrypted user data.
dependencies	Array of strings	Dependencies required by the template.
scene	String	Template application scenarios.
service	String	Cloud service associated with the template.

Table 6-495 TriggerMetadataList

Parameter	Type	Description
trigger_name	String	Trigger name.
trigger_type	String	Trigger type.
event_type	String	Event type.

Parameter	Type	Description
event_data	String	Event data.

Table 6-496 TempDetail

Parameter	Type	Description
input	String	Template input.
output	String	Template output.
warning	String	Warning.

Status code: 400

Table 6-497 Response body parameters

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

Status code: 401

Table 6-498 Response body parameters

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

Status code: 403

Table 6-499 Response body parameters

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

Status code: 404

Table 6-500 Response body parameters

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

Status code: 500**Table 6-501** Response body parameters

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

Example Requests

Query a specified function template.

```
GET /v2/{project_id}/fgs/templates/{template_id}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "d3aa6e4c-xxxx-xxxx-9c09-5c50c4xxxxxx",
  "type" : 1,
  "title" : "access-service-with-http",
  "template_name" : "access-service-with-http-php",
  "description" : "access service with http.",
  "runtime" : "PHP7.3",
  "handler" : "index.handler",
  "code_type" : "inline",
  "code" : "xxxxx",
  "timeout" : 30,
  "memory_size" : 256,
  "trigger_metadata_list" : [ ],
  "temp_detail" : {
    "input" : "None",
    "output" : "execution succeed: Return to access service information through http/https,",
    "warning" : "1. configure the serveraddress environment variables."
  },
  "user_data" : "",
  "encrypted_user_data" : "",
  "dependencies" : [ ],
  "scene" : "basic_function_usage",
  "service" : "FunctionGraph"
}
```

Status code: 404

Not found.


```
{  
  "error_code" : "FSS.1059",  
  "error_msg" : "The function template does not exist."  
}
```

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](#).

6.11 Reserved Instances

6.11.1 Querying Reserved Instances of a Function

Function

This API is used to query reserved instances of a function.

URI

GET /v2/{project_id}/fgs/functions/reservedinstanceconfigs

Table 6-502 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-503 Query Parameters

Parameter	Mandatory	Type	Description
function_urn	No	String	Function URN. For details, see the function model descriptions.
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 1 Maximum: 64
limit	No	String	Maximum number of data records returned in a request. Max.: 500. Default: 100. Default: 100 Minimum: 1 Maximum: 64

Request Parameters

Table 6-504 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-505 Response body parameters

Parameter	Type	Description
reserved_instances	Array of ReservedInstanceConfigs objects	Reserved instances.

Parameter	Type	Description
page_info	PageInfo object	
count	Long	Number of functions.

Table 6-506 ReservedInstanceConfigs

Parameter	Type	Description
function_urn	String	Function URN.
qualifier_type	String	Limiting type. Options: version and alias.
qualifier_name	String	Limit value.
min_count	Integer	Number of reserved instances.
idle_mode	Boolean	Whether to enable the idle mode.
tactics_config	TacticsConfig object	

Table 6-507 TacticsConfig

Parameter	Type	Description
cron_configs	Array of CronConfig objects	Scheduled configuration list.
metric_configs	Array of MetricConfig objects	Flow control configuration list.

Table 6-508 CronConfig

Parameter	Type	Description
name	String	Scheduled configuration name.
cron	String	Cron expression.
count	Integer	Number of started reserved instances.
start_time	Long	Start time (epoch format).
expired_time	Long	Expiry time (epoch format).

Table 6-509 MetricConfig

Parameter	Type	Description
name	String	Flow control configuration name.
type	String	Flow control type. Currently, only reserved instance utilization is supported. Enumeration values: <ul style="list-style-type: none">• Concurrency
threshold	Integer	Flow control threshold.
min	Integer	Minimum value.

Table 6-510 PageInfo

Parameter	Type	Description
next_marker	Long	Next read location.
previous_marker	Long	Previous read location.
current_count	Long	Number of items on the current page.

Status code: 400**Table 6-511** Response body parameters

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

Status code: 401**Table 6-512** Response body parameters

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

Status code: 403

Table 6-513 Response body parameters

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

Status code: 404**Table 6-514** Response body parameters

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

Status code: 500**Table 6-515** Response body parameters

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

Example Requests

Query reserved instances of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/functions/reservedinstanceconfigs
```

Example Responses

Status code: 200

OK

```
{
  "reserved_instances": [
    {
      "function_urn": "urn:fss:{region}:46b6f338fc3445b8846c71dfb1fbxxx:function:default:xxxx:latest",
      "qualifier_type": "version",
      "qualifier_name": "latest",
      "min_count": 10,
      "idle_mode": false,
      "tactics_config": {
        "cron_configs": [
          {
            "name": "cronConfig",
            "cron": "0 1 * * *",
            "count": 15,

```

```
        "start_time": 1658073600,
        "expired_time": 1658160000
      }
    ],
    "metric_configs": [
      {
        "name": "metricConfig",
        "type": "Concurrency",
        "threshold": 90,
        "min": 12
      }
    ]
  }
},
"page_info": {
  "next_marker": 1,
  "previous_marker": 0,
  "current_count": 1
},
"count": 1
}
```

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](#).

6.11.2 Changing the Number of Reserved Instances

Function

This API is used to change the number of reserved instances.

URI

PUT /v2/{project_id}/fgs/functions/{function_urn}/reservedinstances

Table 6-516 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-517 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-518 Request body parameters

Parameter	Mandatory	Type	Description
count	Yes	Integer	Number of reserved instances.
idle_mode	No	Boolean	Whether to enable the idle mode.
tactics_config	No	TacticsConfig object	

Table 6-519 TacticsConfig

Parameter	Mandatory	Type	Description
cron_configs	No	Array of CronConfig objects	Scheduled configuration list.
metric_configs	No	Array of MetricConfig objects	Flow control configuration list.

Table 6-520 CronConfig

Parameter	Mandatory	Type	Description
name	No	String	Scheduled configuration name.
cron	No	String	Cron expression.
count	No	Integer	Number of started reserved instances.
start_time	No	Long	Start time (epoch format).
expired_time	No	Long	Expiry time (epoch format).

Table 6-521 MetricConfig

Parameter	Mandatory	Type	Description
name	No	String	Flow control configuration name.
type	No	String	Flow control type. Currently, only reserved instance utilization is supported. Enumeration values: <ul style="list-style-type: none">• Concurrency
threshold	No	Integer	Flow control threshold.
min	No	Integer	Minimum value.

Response Parameters

Status code: 200

Table 6-522 Response body parameters

Parameter	Type	Description
count	Integer	Number of reserved instances.
idle_mode	Boolean	Whether to enable idle mode.
tactics_config	TacticsConfig object	

Table 6-523 TacticsConfig

Parameter	Type	Description
cron_configs	Array of CronConfig objects	Scheduled configuration list.
metric_configs	Array of MetricConfig objects	Flow control configuration list.

Table 6-524 CronConfig

Parameter	Type	Description
name	String	Scheduled configuration name.
cron	String	Cron expression.
count	Integer	Number of started reserved instances.
start_time	Long	Start time (epoch format).
expired_time	Long	Expiry time (epoch format).

Table 6-525 MetricConfig

Parameter	Type	Description
name	String	Flow control configuration name.
type	String	Flow control type. Currently, only reserved instance utilization is supported. Enumeration values: <ul style="list-style-type: none">• Concurrency
threshold	Integer	Flow control threshold.
min	Integer	Minimum value.

Status code: 400

Table 6-526 Response body parameters

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

Status code: 401**Table 6-527** Response body parameters

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

Status code: 403**Table 6-528** Response body parameters

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

Status code: 404**Table 6-529** Response body parameters

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

Status code: 500**Table 6-530** Response body parameters

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

Example Requests

Update the number of a function's reserved instances to 3.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/reservedinstances
{
  "count" : 3
}
```

Example Responses

Status code: 200

OK

```
{  
  "count" : 2  
}
```

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](#).

6.11.3 Querying the Number of Reserved Instances

Function

This API is used to query the number of instances reserved for a function.

URI

GET /v2/{project_id}/fgs/functions/reservedinstances

Table 6-531 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Table 6-532 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time. Default: 0
limit	No	String	Maximum number of functions to obtain in a request. Maximum value: 400 The default value is 400, which is used when this parameter is not specified or is 0 or greater than 400. If it is less than 0, an error is reported. Default: 400
urn	No	String	URN of a function whose number of reserved instances is to be queried.

Request Parameters

Table 6-533 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-534 Response body parameters

Parameter	Type	Description
reservedinstances	Array of FuncReservedInstance objects	Reserved instances.
page_info	PageInfo object	
count	Long	Number of functions.

Table 6-535 FuncReservedInstance

Parameter	Type	Description
func_urn	String	Function URN.
count	Long	Number of reserved instances.

Table 6-536 PageInfo

Parameter	Type	Description
next_marker	Long	Next read location.
previous_marker	Long	Previous read location.
current_count	Long	Number of items on the current page.

Status code: 400**Table 6-537** Response body parameters

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

Status code: 401

Table 6-538 Response body parameters

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

Status code: 403**Table 6-539** Response body parameters

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

Status code: 404**Table 6-540** Response body parameters

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

Status code: 500**Table 6-541** Response body parameters

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

Example Requests

Query reserved instances.

GET https://{Endpoint}/v2/{project_id}/fgs/functions/reservedinstances

Example Responses

Status code: 200

OK

```
{
  "reservedinstances" : [ {
    "func_urn" : "urn:fss:xxxx:46b6f338fc3445b8846c71dfb1fbxxxx:function:csharp:test2-0:latest",
    "count" : 2
  } ],
  "page_info" : {
    "next_marker" : 2,
    "previous_marker" : 0,
    "current_count" : 2
  }
}
```

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](#).

6.12 Function Import and Export

6.12.1 Exporting a Function

Function

This API is used to export a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/export

Table 6-542 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-543 Query Parameters

Parameter	Mandatory	Type	Description
config	No	Boolean	Whether to export function configuration. The default value is false. If the type parameter does not exist, at least one of code=true or config=true must be specified. Default: false
code	No	Boolean	Whether to export function code. The default value is false. If the type parameter does not exist, at least one of code=true or config=true must be specified. Default: false
type	No	String	This parameter cannot be used with code or config. type=code indicates exporting the code, and type=config indicates exporting the configuration.

Request Parameters

Table 6-544 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 404

Table 6-545 Response body parameters

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

Status code: 500

Table 6-546 Response body parameters

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

Example Requests

- Export function code only.
GET /v2/{project_id}/fgs/functions/{func_urn}/export?type=code
- Export both function code and configuration.
GET /v2/{project_id}/fgs/functions/{func_urn}/export?code=true&config=true

Example Responses

Status code: 404

Not found.

```
{  
  "error_code": "FSS.1051",  
  "error_msg": "Not found the function"  
}
```

Status Codes

Status Code	Description
200	ok
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.12.2 Importing a Function

Function

This API is used to import a function.

URI

POST /v2/{project_id}/fgs/functions/import

Table 6-547 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Request Parameters

Table 6-548 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-549 Request body parameters

Parameter	Mandatory	Type	Description
func_name	Yes	String	Function name. Max. 60 of letters, digits, hyphens (-), and underscores (_). Start with a letter, and end with a letter or digit. Minimum length: 1 character. Maximum length: 60 characters.

Parameter	Mandatory	Type	Description
file_name	Yes	String	File name.
file_type	Yes	String	File type.
file_code	Yes	String	Function code. The code must be encoded using Base64.
package	No	String	App name. The default value is default.

Response Parameters

Status code: 200

Table 6-550 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN.
func_name	String	Function name.
domain_id	String	Domain ID.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.

Parameter	Type	Description
runtime	String	<p>Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Go 1.8 Go 1.x Java 8 Java 11 Node.js 6.10 Node.js 8.10 Node.js 10.16 Node.js 12.13 Node.js 14.18 C# (.NET Core 2.0) C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • Java8 • Java11 • Node.js6.10 • Node.js8.10 • Node.js10.16 • Node.js12.13 • Node.js14.18 • Python2.7 • Python3.6 • Go1.8 • Go1.x • C#(.NET Core 2.0) • C#(.NET Core 2.1) • C#(.NET Core 3.1) • Custom • PHP7.3 • Python3.9 • http • Custom Image
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	<p>Handler of a function in the format of "xx.xx". It must contain a period (.).</p> <p>For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler.</p>
memory_size	Integer	<p>Memory consumed by a function.</p> <p>Unit: MB.</p> <p>The value can be 128, 256, 512, 768, 1024, 1280, 1536, 1792, 2048, 2560, 3072, 3584 or 4096.</p> <p>The value ranges from 128 to 4096.</p>

Parameter	Type	Description
gpu_memory	Integer	GPU memory. This parameter is available only for functions created with a custom runtime or image. Unit: MB. Options: 1024, 2048, 3072, 4096, 5120, 6144, 7168, 8192, 9216, 10,240, 11,264, 12,288, 13,312, 14,336, 15,360, and 16,384. Range: 1024 to 16,384.
cpu	Integer	CPU resources of a function. Unit: millicore (1 core = 1000 millicores). The value of this field is proportional to that of MemorySize. By default, 100 CPU millicores are required for 128 MB memory.
code_type	String	Function code type. Options: inline: inline code zip: ZIP file obs: function code stored in an OBS bucket jar: JAR file, mainly for Java functions Custom-Image-Swr: The function code comes from the SWR custom image. Enumeration values: <ul style="list-style-type: none">• inline• zip• obs• jar• Custom-Image-Swr
code_url	String	If CodeType is set to obs, enter the OBS URL of the function code package. If CodeType is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when CodeType is set to jar or zip.
code_size	Long	Code size in bytes.
user_data	String	Name/Value information defined for the function. These are parameters used in the function. For example, if a function needs to access a host, define Host={host_ip}. You can define a maximum of 20 such parameters, and their total length cannot exceed 4 KB.
digest	String	SHA512 hash value of function code, which is used to determine whether the function has changed.
version	String	Function version, which is automatically generated by the system. The version name is in the format of "vYYYYMMDD-HHMMSS" (v+year/month/day-hour/minute/second).

Parameter	Type	Description
image_name	String	Internal identifier of a function version.
xrole	String	Agency used by the function. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
app_xrole	String	Agency used by the function app. You need to create an agency on the IAM console. This field is mandatory when a function needs to access other services.
description	String	Function description.
version_description	String	Version description.
last_modified	String	Time when the function was last updated.
func_vpc	FuncVpc object	VPC configuration. An agency with VPC permissions must be configured for the function.
depend_list	Array of strings	Dependency IDs.
depend_version_list	Array of strings	Dependency versions.
strategy_config	StrategyConfig object	Function policy configuration.
extend_config	String	Extended configuration.
initializer_handler	String	Initializer of the function in the format of "xx.xx". It must contain a period (.). This parameter is mandatory when the initialization function is configured. For example, for Node.js function myfunction.initializer, the file name is myfunction.js, and the initialization function is initializer.
initializer_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–300s. This parameter is mandatory when the initialization function is configured.
pre_stop_handler	String	The pre-stop handler of a function. The value must contain a period (.) in the format of xx.xx. For example, for Node.js function myfunction.pre_stop_handler, the file name is myfunction.js, and the initialization function is pre_stop_handler.

Parameter	Type	Description
pre_stop_timeout	Integer	Maximum duration the function can be initialized. Value range: 1s–90s.
enterprise_project_id	String	Enterprise project ID. This parameter is mandatory if you create a function as an enterprise user.

Table 6-551 FuncVpc

Parameter	Type	Description
domain_id	String	Domain name ID.
namespace	String	Project ID.
vpc_name	String	VPC name.
vpc_id	String	VPC ID.
subnet_name	String	Subnet name.
subnet_id	String	Subnet ID.
cidr	String	Subnet mask.
gateway	String	Gateway.
security_groups	Array of strings	Security group.

Table 6-552 StrategyConfig

Parameter	Type	Description
concurrency	Integer	Maximum number of instances for a single function. For v1, the value can be 0 or -1; for v2, it ranges from -1 to 1000. <ul style="list-style-type: none">-1: The function has unlimited instances.0: The function is disabled.
concurrent_num	Integer	Number of concurrent requests per instance. This parameter is supported only by v2. The value ranges from 1 to 1,000.

Status code: 409

Table 6-553 Response body parameters

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

Status code: 500

Table 6-554 Response body parameters

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

Example Requests

Import a function from a Base64-encoded file test.zip.

```
POST https://{Endpoint}/v2/{project_id}/fgs/functions/import
```

```
{
  "func_name": "test",
  "file_name": "test.zip",
  "file_type": "zip",
  "file_code": "xxxxxxxxxxxxxxxxxxxxxxx"
}
```

Example Responses

Status code: 200

ok

```
{
  "func_urn": "urn:fss:{region}:46b6f338fc3445b8846c71dfb1fbd9e8:function:default:test_v1_2",
  "func_name": "test_v1_2",
  "domain_id": "14ee2e35****a7998b*****aa24cabf",
  "namespace": "46b6f338fc3445b8846c71dfb1fbd9e8",
  "project_name": "{region}",
  "package": "default",
  "runtime": "Node.js6.10",
  "timeout": 3,
  "handler": "index.handler",
  "memory_size": 128,
  "cpu": 300,
  "code_type": "zip",
  "code_filename": "index.zip",
  "code_size": 6709,
  "digest":
    "faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9af322c55dabeb16565c386e402413458e6068",
  "version": "latest",
  "image_name": "latest-191025153727@zehht",
  "last_modified": "2019-10-25 15:37:27",
  "strategy_config": {
```



```
"concurrency" : -1
},
"enterprise_project_id" : "46b6f338fc3445b8846c71dfb1fbxxxx"
}
```

Status code: 409

Conflict

```
{
  "error_code" : "FSS.1061",
  "error_msg" : "The function has existed"
}
```

Status Codes

Status Code	Description
200	ok
409	Conflict
500	Internal server error.

Error Codes

See [Error Codes](#).

6.13 Function Triggers

6.13.1 Deleting All Triggers of a Function

Function

This API is used to delete all triggers of a function.

If a non-latest function version is specified, all triggers corresponding to the version will be deleted.

If an alias is specified, all triggers corresponding to the alias will be deleted.

If neither function versions nor aliases are specified or the latest version is specified, all triggers of the function (including all versions and aliases) will be deleted.

URI

DELETE /v2/{project_id}/fgs/triggers/{function_urn}

Table 6-555 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-556 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format). Default: application/json

Response Parameters

Status code: 400

Table 6-557 Response body parameters

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

Status code: 401

Table 6-558 Response body parameters

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

Status code: 403**Table 6-559** Response body parameters

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

Status code: 404**Table 6-560** Response body parameters

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

Status code: 500**Table 6-561** Response body parameters

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

Example Requests

Delete all triggers of a function.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
400	Bad request.

Status Code	Description
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See [Error Codes](#).

6.13.2 Querying All Triggers of a Function

Function

This API is used to query all triggers of a function.

URI

GET /v2/{project_id}/fgs/triggers/{function_urn}

Table 6-562 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-563 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format). Default: application/json

Response Parameters

Status code: 200

Table 6-564 Response body parameters

Parameter	Type	Description
[items]	Array of ListFunctionTriggerResult objects	

Table 6-565 ListFunctionTriggerResult

Parameter	Type	Description
trigger_id	String	Trigger ID.

Parameter	Type	Description
trigger_type_code	String	<p>Trigger type.</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA <p>Enumeration values:</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA • RABBITMQ • DEDICATEDGATEWAY • OPENSOURCEKAFKA • APIC • Gemini Mongo • EVENTGRID • IOTDA
trigger_status	String	<p>Trigger status.</p> <ul style="list-style-type: none"> • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. <p>Enumeration values:</p> <ul style="list-style-type: none"> • ACTIVE • DISABLED
event_data	TriggerEventDataResponseBody object	Trigger source event.

Parameter	Type	Description
last_updated_time	String	Latest update time.
created_time	String	Time when the trigger was created.

Table 6-566 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). <ul style="list-style-type: none">• Rate: specifies the frequency (minutes, hours, or days) at which the function is invoked. If the unit is minute, the value cannot exceed 60. If the unit is hour, the value cannot exceed 24. If the unit is day, the value cannot exceed 30.• Cron: specifies a Cron expression to periodically invoke a function. Enumeration values: <ul style="list-style-type: none">• Rate• Cron
schedule	String	Triggering rule. (timer trigger parameter). <ul style="list-style-type: none">• When the trigger type is Rate, the scheduled rule is used. When the trigger type is Cron, the Cron expression is used.
user_event	String	Additional information (timer trigger parameter). When the timer trigger triggers the function, the execution event (the event parameter of the function) is {"version": "v1.0", "time": "2018-06-01T08:30:00+08:00", "trigger_type": "TIMER", "trigger_name": "Timer_001", "user_event": "Additional information you entered"}.
triggerid	String	APIG trigger ID (APIG trigger parameter).
type	Integer	The API type (APIG trigger parameter). <ul style="list-style-type: none">• 1: public• 2: private
path	String	Path of the API (APIG trigger parameter).

Parameter	Type	Description
protocol	String	Request protocol of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• HTTP• HTTPS
req_method	String	Request mode of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• GET• POST• PUT• DELETE• HEAD• PATCH• OPTIONS• ANY
group_id	String	ID of the group to which the API belongs (APIG trigger parameter).
group_name	String	Name of the group to which the API belongs (APIG trigger parameter).
match_mode	String	Matching mode of the API (APIG trigger parameter). <ul style="list-style-type: none">• SWA: prefix match• NORMAL: normal match (absolute match) Enumeration values: <ul style="list-style-type: none">• SWA• NORMAL
env_name	String	Environment in which the API is published (APIG trigger parameter).
env_id	String	ID of the environment in which the API has been published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).

Parameter	Type	Description
auth	String	Security authentication (APIG trigger parameter). <ul style="list-style-type: none">• IAM: IAM authentication. Only IAM users are allowed to access the system. The security level is medium.• APP: Appkey&Appsecret authentication is used. The security level is high. This authentication mode is recommended.• NONE: No authentication mode is used. All users can access the system. This mode is not recommended. Enumeration values: <ul style="list-style-type: none">• IAM• APP• NONE
invoke_url	String	API calling address (APIG trigger parameter).
func_info	ApigTriggerFuncInfo object	FunctionGraph backend details (APIG trigger parameter). This parameter is mandatory for APIG triggers.
sl_domain	String	Subdomain name allocated by the APIG system by default (APIG trigger parameter). Minimum: 1 Maximum: 255
backend_type	String	Backend type of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• FUNCTION
instance_id	String	Instance ID. This parameter is mandatory for DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• APIG trigger: APIG gateway ID• DDS trigger: DB instance ID.• Kafka trigger: Kafka instance ID• RabbitMQ trigger: RabbitMQ instance ID
roma_app_id	String	ID of the integration application to which the API belongs (APIG trigger parameter).
operations	Array of strings	Custom operations (CTS trigger parameter). CTS collects operation records of subscribed cloud resources. If you create a function with a CTS trigger, collected operation records of specified cloud services will be passed as a parameter to invoke the function.

Parameter	Type	Description
collection_name	String	Collection name (DDS trigger parameter).
db_name	String	Database name (DDS trigger parameter).
db_password	String	DDS database password (DDS trigger parameter).
db_user	String	DDS database username (DDS trigger parameter).
instance_addresses	Array of strings	DDS database instance address (DDS trigger parameter).
mode	String	DDS database instance type (DDS trigger parameter). <ul style="list-style-type: none">• Sharding: cluster instance• ReplicaSet: replica set instance• Single: single node instance.
batch_size	Integer	Batch size: Maximum number of data records that can be processed by the function at a time. This parameter is mandatory for DIS, DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• DDS trigger: Set the batch size to a value ranging from 1 to 10,000.• DIS trigger: Set the batch size to a value ranging from 1 to 10,000.• Kafka trigger: Set the batch size to a value ranging from 1 to 1000.• RabbitMQ trigger: Set the batch size to a value ranging from 1 to 1000.
queue_id	String	Queue ID (DMS trigger parameter).
consumer_group_id	String	Consumer group ID (DMS trigger parameter).
polling_interval	Integer	Pull period.
stream_name	String	Stream name (DIS trigger parameter).

Parameter	Type	Description
sharditerator_type	String	Start position (DIS trigger parameter). <ul style="list-style-type: none">● TRIM_HORIZON: Data is read from the earliest valid record stored in the partition.● LATEST: Data is read from the latest record in the partition. This option ensures that the most recent data in the partition is read. Enumeration values: <ul style="list-style-type: none">● TRIM_HORIZON● LATEST
polling_unit	String	Unit of the pull period (DIS trigger parameter). <ul style="list-style-type: none">● s: second● ms: millisecond Enumeration values: <ul style="list-style-type: none">● s● ms
max_fetch_bytes	Integer	Maximum number of bytes to be extracted (DIS trigger parameter). Minimum: 0 Maximum: 4194304
is_serial	String	Serial Data Processing: If this option is selected, FunctionGraph pulls data from the stream only after previous data is processed. If this option is not selected, FunctionGraph pulls data from the stream as long as the pull period ends. Enumeration values: <ul style="list-style-type: none">● true● false
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).
bucket	String	Bucket name (OBS trigger parameter). The name of the OBS bucket used as the event source cannot be the same as that of an existing bucket of the current user or another user. After being created, the bucket name cannot be modified. Minimum: 1 Maximum: 64

Parameter	Type	Description
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum: 0 Maximum: 1024
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum: 0 Maximum: 1024
events	Array of strings	Trigger event (OBS trigger parameter). <ul style="list-style-type: none">● ObjectCreated: all object creation operations, including PUT, POST, COPY, and part assembling● Put: Uploads an object using Put.● Post: Uploads an object using POST● Copy: Copies an object using COPY.● CompleteMultipartUpload: Merges parts of a multipart upload.● ObjectRemoved: Deletes an object.● Delete: Deletes an object by specifying its version ID.● DeleteMarkerCreated: Deletes an object without specifying its version ID.
topic_urn	String	Topic URN (SMN trigger parameter) Minimum: 1 Maximum: 255
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).
kafka_password	String	Kafka password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable SASL authentication(Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).

Parameter	Type	Description
access_user	String	RabbitMQ username (RabbitMQ trigger parameter).
connect_address	String	Instance IP address (RabbitMQ trigger parameter).
exchange_name	String	Switch name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable SSL (RabbitMQ trigger parameter).

Table 6-567 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. <ul style="list-style-type: none">• sync: synchronous execution• async: asynchronous execution Enumeration values: <ul style="list-style-type: none">• sync• async
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. The unit is in millisecond. This parameter is mandatory for APIG triggers. Minimum: 1 Maximum: 60000
version	String	Function version information.

Status code: 400**Table 6-568** Response body parameters

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

Status code: 401**Table 6-569** Response body parameters

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

Status code: 403**Table 6-570** Response body parameters

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

Status code: 404**Table 6-571** Response body parameters

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

Status code: 500**Table 6-572** Response body parameters

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

Example Requests

Query all triggers of a function.

```
GET https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}
```

Example Responses

Status code: 200

OK

```
[{
  "trigger_id": "1b3b264db3b849118d007884b9bc8a60",
  "trigger_type_code": "APIG",
  "trigger_status": "ACTIVE",
  "event_data": {
    "api_id": "4a59f6a7263c4d1dab3f69c34f98d949",
    "api_name": "API_test_triggers",
    "auth": "IAM",
    "env_id": "DEFAULT_ENVIRONMENT_RELEASE_ID",
    "env_name": "RELEASE",
    "func_info": {
      "function_urn": "urn:fss:xxxx:46b6f338fc3445b8846c71dfb1fbxxx:function:default:test_triggers",
      "invocation_type": "sync",
      "timeout": 5000,
      "version": "latest"
    },
    "group_id": "9205f83fe721481eb490870d380cf31d",
    "group_name": "APIGroup_2mbe",
    "invoke_url": "https://ed94ae9494ba4f70ac24224747202140.{apig_endpoint}/test_triggers",
    "match_mode": "SWA",
    "name": "API_test_triggers",
    "path": "/test_triggers",
    "protocol": "HTTPS",
    "req_method": "ANY",
    "triggerid": "1b3b264db3b849118d007884b9bc8a60",
    "type": 1
  },
  "last_updated_time": "2022-11-09 16:37:24",
  "created_time": "2022-11-09 16:37:24"
}]
```

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](#).

6.13.3 Creating a Trigger

Function

This API is used to create a trigger.

- Trigger types include timer, APIG, CTS, DDS, DMS, DIS, LTS, OBS, SMN, and Kafka.
- By default, DDS and Kafka triggers are in the DISABLED state, and other triggers are in the ACTIVE state.
- Only timer, DDS, DMS, Kafka, and LTS triggers can be disabled.

URI

POST /v2/{project_id}/fgs/triggers/{function_urn}

Table 6-573 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-574 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format). Default: application/json

Table 6-575 Request body parameters

Parameter	Mandatory	Type	Description
trigger_type_code	Yes	String	<p>Trigger type.</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS: Enable CTS first. • DDS: Configure a VPC for the function first. • DMS: Configure a DMS agency first. • DIS: Configure a DIS agency first. • LTS: Configure an LTS agency first. • OBS • KAFKA <p>Enumeration values:</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA • RABBITMQ • DEDICATEDGATEWAY • OPENSOURCEKAFKA • APIC • Gemini Mongo • EVENTGRID • IOTDA
trigger_status	No	String	<p>Trigger status. Options: ACTIVE and DISABLED.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ACTIVE • DISABLED

Parameter	Mandatory	Type	Description
event_type_code	No	String	Message code.
event_data	Yes	TriggerEventDataRequestBody object	Trigger source event.

Table 6-576 TriggerEventDataRequestBody

Parameter	Mandatory	Type	Description
name	No	String	<p>Timer trigger: trigger name</p> <ul style="list-style-type: none"> • APIG trigger: API name • CTS trigger: Notification name • OBS trigger: Event Notification name. The default value is The trigger ID.
schedule_type	No	String	<p>Timer trigger type (timer trigger parameter). This parameter is mandatory for timer triggers.</p> <ul style="list-style-type: none"> • Rate: specifies the frequency (minutes, hours, or days) at which the function is invoked. If the unit is minute, the value cannot exceed 60. If the unit is hour, the value cannot exceed 24. If the unit is day, the value cannot exceed 30. • Cron: specifies a Cron expression to periodically invoke a function. <p>Enumeration values:</p> <ul style="list-style-type: none"> • Rate • Cron

Parameter	Mandatory	Type	Description
schedule	No	String	Triggering rule. (timer trigger parameter). This parameter is mandatory for timer triggers. <ul style="list-style-type: none">When the trigger type is Rate, the scheduled rule is used. When the trigger type is Cron, the Cron expression is used.
user_event	No	String	Additional information (timer trigger parameter). When the timer trigger triggers the function, the execution event (the event parameter of the function) is {"version": "v1.0", "time": "2018-06-01T08:30:00+08:00", "trigger_type": "TIMER", "trigger_name": "Timer_001", "user_event": "Additional information you entered"}.
type	No	Integer	API visibility(APIG trigger parameter). This parameter is mandatory for APIG triggers. <ul style="list-style-type: none">1: public2: private
path	No	String	Path of the API (APIG trigger parameter). This parameter is mandatory for APIG triggers.
protocol	No	String	Request protocol of the API (APIG trigger parameter). This parameter is mandatory for APIG triggers. Enumeration values: <ul style="list-style-type: none">HTTPHTTPS

Parameter	Mandatory	Type	Description
req_method	No	String	Request method of the API (APIG trigger parameter). This parameter is mandatory for APIG triggers. Enumeration values: <ul style="list-style-type: none">• GET• POST• PUT• DELETE• HEAD• PATCH• OPTIONS• ANY
group_id	No	String	ID of the group to which the API belongs (APIG trigger parameter). This parameter is mandatory for APIG triggers.
group_name	No	String	Name of the API group to which the API belongs.
match_mode	No	String	Matching mode of the API (APIG trigger parameter). This parameter is mandatory for APIG triggers. <ul style="list-style-type: none">• SWA: prefix match• NORMAL: normal match (absolute match) Enumeration values: <ul style="list-style-type: none">• SWA• NORMAL
env_name	No	String	Environment in which the API is published (APIG trigger parameter). This parameter is mandatory for APIG triggers.
env_id	No	String	ID of the environment in which the API has been published (APIG trigger parameter) This parameter is mandatory for APIG triggers.

Parameter	Mandatory	Type	Description
auth	No	String	<p>Security authentication (APIG trigger parameter). This parameter is mandatory for APIG triggers.</p> <ul style="list-style-type: none"> • IAM: IAM authentication. Only IAM users are allowed to access the system. The security level is medium. • APP: Appkey&Appsecret authentication is used. The security level is high. This authentication mode is recommended. • NONE: No authentication mode is used. All users can access the system. This mode is not recommended. <p>Enumeration values:</p> <ul style="list-style-type: none"> • IAM • APP • NONE
func_info	No	ApigTriggerFuncInfo object	FunctionGraph backend details (APIG trigger parameter). This parameter is mandatory for APIG triggers.
sl_domain	No	String	<p>Subdomain name allocated by the APIG system by default (APIG trigger parameter).</p> <p>Minimum: 1 Maximum: 255</p>
backend_type	No	String	<p>Backend type of the API (APIG trigger parameter).</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • FUNCTION

Parameter	Mandatory	Type	Description
operations	No	Array of strings	Custom operations (CTS trigger parameter). This parameter is mandatory for CTS triggers. CTS collects operation records of subscribed cloud resources. If you create a function with a CTS trigger, collected operation records of specified cloud services will be passed as a parameter to invoke the function.
instance_id	No	String	Instance ID. This parameter is mandatory for DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• APIG trigger: APIG gateway ID• DDS trigger: DB instance ID.• Kafka trigger: Kafka instance ID• RabbitMQ trigger: RabbitMQ instance ID
collection_name	No	String	Collection name (DDS trigger parameter). This parameter is mandatory for DDS triggers.
db_name	No	String	Database name (DDS trigger parameter). This parameter is mandatory for DDS triggers.
db_password	No	String	DDS database password (DDS trigger parameter). This parameter is mandatory for DDS triggers.

Parameter	Mandatory	Type	Description
batch_size	No	Integer	Batch size: Maximum number of data records that can be processed by the function at a time. This parameter is mandatory for DIS, DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• DDS trigger: Set the batch size to a value ranging from 1 to 10,000.• DIS trigger: Set the batch size to a value ranging from 1 to 10,000.• Kafka trigger: Set the batch size to a value ranging from 1 to 1,000.• RabbitMQ trigger: Set the batch size to a value ranging from 1 to 1,000.
queue_id	No	String	Queue ID (DMS trigger parameter). This parameter is mandatory for DMS triggers.
consumer_group_id	No	String	Consumer group ID (DMS trigger parameter). This parameter is mandatory for DMS triggers.
polling_interval	No	Integer	Pull period. This parameter is mandatory for DIS and DMS triggers.
stream_name	No	String	Stream name (DIS trigger parameter). This parameter is mandatory for DIS triggers.

Parameter	Mandatory	Type	Description
sharditerator_type	No	String	<p>Starting position (DIS trigger parameter). This parameter is mandatory for DIS triggers.</p> <ul style="list-style-type: none"> • TRIM_HORIZON: Data is read from the earliest valid record stored in the partition. • LATEST: Data is read from the latest record in the partition. This option ensures that the most recent data in the partition is read. <p>Enumeration values:</p> <ul style="list-style-type: none"> • TRIM_HORIZON • LATEST
polling_unit	No	String	<p>Pull period unit (DIS trigger parameter). This parameter is mandatory for DIS triggers.</p> <ul style="list-style-type: none"> • s: second • ms: millisecond <p>Enumeration values:</p> <ul style="list-style-type: none"> • s • ms
max_fetch_bytes	No	Integer	<p>Max. fetch bytes (DIS trigger parameter).</p> <p>Minimum: 0</p> <p>Maximum: 4194304</p>
is_serial	No	String	<p>Serial data processing (DIS trigger parameter). If enabled, FunctionGraph pulls data from the stream only after previous data is processed. If disabled, FunctionGraph pulls data from the stream as long as the pull period ends. This parameter is mandatory for DIS triggers.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • true • false
log_group_id	No	String	<p>Log group ID (LTS trigger parameter). This parameter is mandatory for LTS triggers.</p>

Parameter	Mandatory	Type	Description
log_topic_id	No	String	Log stream ID (LTS trigger parameter). This parameter is mandatory for LTS triggers.
bucket	No	String	Bucket name (OBS trigger parameter). The name of the OBS bucket used as the event source cannot be the same as that of an existing bucket of the current user or another user. After being created, the bucket name cannot be modified. This parameter is mandatory for OBS triggers. Minimum: 1 Maximum: 64
prefix	No	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum: 0 Maximum: 1024
suffix	No	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum: 0 Maximum: 1024

Parameter	Mandatory	Type	Description
events	No	Array of strings	Trigger event (OBS trigger parameter). This parameter is mandatory for OBS triggers. <ul style="list-style-type: none">• ObjectCreated: all object creation operations, including PUT, POST, COPY, and part assembling• Put: Uploads an object using Put.• Post: Uploads an object using POST• Copy: Copies an object using COPY.• CompleteMultipartUpload: Merges parts of a multipart upload.• ObjectRemoved: Deletes an object.• Delete: Deletes an object by specifying its version ID.<ul style="list-style-type: none">- DeleteMarkerCreated: Deletes an object without specifying its version ID.
topic_urn	No	String	Topic URN (SMN trigger parameter) This parameter is mandatory for SMN triggers. Minimum: 1 Maximum: 255
topic_ids	No	Array of strings	The Kafka topic ID list (Kafka trigger parameter). This parameter is mandatory for Kafka triggers.
kafka_user	No	String	Kafka account name (Kafka trigger parameter).
kafka_password	No	String	Kafka password (Kafka trigger parameter).
kafka_connect_address	No	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	No	Boolean	Whether to enable SASL authentication (Kafka trigger parameter).

Parameter	Mandatory	Type	Description
access_password	No	String	RabbitMQ account password (RabbitMQ trigger parameter). This parameter is mandatory for RabbitMQ triggers.
access_user	No	String	RabbitMQ username (RabbitMQ trigger parameter).
connect_address	No	String	Instance IP address (RabbitMQ trigger parameter).
exchange_name	No	String	Switch name (RabbitMQ trigger parameter). This parameter is mandatory for RabbitMQ triggers.
vhost	No	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	No	Boolean	Whether to enable SSL (RabbitMQ trigger parameter).

Table 6-577 ApigTriggerFuncInfo

Parameter	Mandatory	Type	Description
function_urn	No	String	Function URN. For details, see the function model descriptions.
invocation_type	No	String	Execution mode of a function. <ul style="list-style-type: none"> • sync: synchronous execution • async: asynchronous execution Enumeration values: <ul style="list-style-type: none"> • sync • async
timeout	Yes	Integer	Timeout allowed for APIG to request the FunctionGraph service. The unit is in millisecond. This parameter is mandatory for APIG triggers. Minimum: 1 Maximum: 60000
version	No	String	Function version information.

Response Parameters

Status code: 201

Table 6-578 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.
trigger_type_code	String	Trigger type. <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA Enumeration values: <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA • RABBITMQ • DEDICATEDGATEWAY • OPENSOURCEKAFKA • APIC • Gemini Mongo • EVENTGRID • IOTDA

Parameter	Type	Description
trigger_status	String	Trigger status. <ul style="list-style-type: none">● ACTIVE: The trigger is enabled.● DISABLED: The trigger is disabled. Enumeration values: <ul style="list-style-type: none">● ACTIVE● DISABLED
event_data	TriggerEventDataResponseBody object	Trigger source event.
last_updated_time	String	Latest update time.
created_time	String	Time when the trigger was created.

Table 6-579 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). <ul style="list-style-type: none">● Rate: specifies the frequency (minutes, hours, or days) at which the function is invoked. If the unit is minute, the value cannot exceed 60. If the unit is hour, the value cannot exceed 24. If the unit is day, the value cannot exceed 30.● Cron: specifies a Cron expression to periodically invoke a function. Enumeration values: <ul style="list-style-type: none">● Rate● Cron
schedule	String	Triggering rule. (timer trigger parameter). <ul style="list-style-type: none">● When the trigger type is Rate, the scheduled rule is used. When the trigger type is Cron, the Cron expression is used.

Parameter	Type	Description
user_event	String	Additional information (timer trigger parameter). When the timer trigger triggers the function, the execution event (the event parameter of the function) is {"version": "v1.0", "time": "2018-06-01T08:30:00+08:00", "trigger_type": "TIMER", "trigger_name": "Timer_001", "user_event": "Additional information you entered"}.
triggerid	String	APIG trigger ID (APIG trigger parameter).
type	Integer	The API type (APIG trigger parameter). <ul style="list-style-type: none"> 1: public 2: private
path	String	Path of the API (APIG trigger parameter).
protocol	String	Request protocol of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none"> HTTP HTTPS
req_method	String	Request mode of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none"> GET POST PUT DELETE HEAD PATCH OPTIONS ANY
group_id	String	ID of the group to which the API belongs (APIG trigger parameter).
group_name	String	Name of the group to which the API belongs (APIG trigger parameter).

Parameter	Type	Description
match_mode	String	Matching mode of the API (APIG trigger parameter). <ul style="list-style-type: none">• SWA: prefix match• NORMAL: normal match (absolute match) Enumeration values: <ul style="list-style-type: none">• SWA• NORMAL
env_name	String	Environment in which the API is published (APIG trigger parameter).
env_id	String	ID of the environment in which the API has been published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).
auth	String	Security authentication (APIG trigger parameter). <ul style="list-style-type: none">• IAM: IAM authentication. Only IAM users are allowed to access the system. The security level is medium.• APP: Appkey&Appsecret authentication is used. The security level is high. This authentication mode is recommended.• NONE: No authentication mode is used. All users can access the system. This mode is not recommended. Enumeration values: <ul style="list-style-type: none">• IAM• APP• NONE
invoke_url	String	API calling address (APIG trigger parameter).
func_info	ApigTriggerFuncInfo object	FunctionGraph backend details (APIG trigger parameter). This parameter is mandatory for APIG triggers.
sl_domain	String	Subdomain name allocated by the APIG system by default (APIG trigger parameter). Minimum: 1 Maximum: 255

Parameter	Type	Description
backend_type	String	Backend type of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">● FUNCTION
instance_id	String	Instance ID. This parameter is mandatory for DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">● APIG trigger: APIG gateway ID● DDS trigger: DB instance ID.● Kafka trigger: Kafka instance ID● RabbitMQ trigger: RabbitMQ instance ID
roma_app_id	String	ID of the integration application to which the API belongs (APIG trigger parameter).
operations	Array of strings	Custom operations (CTS trigger parameter). CTS collects operation records of subscribed cloud resources. If you create a function with a CTS trigger, collected operation records of specified cloud services will be passed as a parameter to invoke the function.
collection_name	String	Collection name (DDS trigger parameter).
db_name	String	Database name (DDS trigger parameter).
db_password	String	DDS database password (DDS trigger parameter).
db_user	String	DDS database username (DDS trigger parameter).
instance_addresses	Array of strings	DDS database instance address (DDS trigger parameter).
mode	String	DDS database instance type (DDS trigger parameter). <ul style="list-style-type: none">● Sharding: cluster instance● ReplicaSet: replica set instance● Single: single node instance.

Parameter	Type	Description
batch_size	Integer	<p>Batch size: Maximum number of data records that can be processed by the function at a time. This parameter is mandatory for DIS, DDS, Kafka, and RabbitMQ triggers.</p> <ul style="list-style-type: none"> • DDS trigger: Set the batch size to a value ranging from 1 to 10,000. • DIS trigger: Set the batch size to a value ranging from 1 to 10,000. • Kafka trigger: Set the batch size to a value ranging from 1 to 1000. • RabbitMQ trigger: Set the batch size to a value ranging from 1 to 1000.
queue_id	String	Queue ID (DMS trigger parameter).
consumer_group_id	String	Consumer group ID (DMS trigger parameter).
polling_interval	Integer	Pull period.
stream_name	String	Stream name (DIS trigger parameter).
sharditerator_type	String	<p>Start position (DIS trigger parameter).</p> <ul style="list-style-type: none"> • TRIM_HORIZON: Data is read from the earliest valid record stored in the partition. • LATEST: Data is read from the latest record in the partition. This option ensures that the most recent data in the partition is read. <p>Enumeration values:</p> <ul style="list-style-type: none"> • TRIM_HORIZON • LATEST
polling_unit	String	<p>Unit of the pull period (DIS trigger parameter).</p> <ul style="list-style-type: none"> • s: second • ms: millisecond <p>Enumeration values:</p> <ul style="list-style-type: none"> • s • ms
max_fetch_bytes	Integer	<p>Maximum number of bytes to be extracted (DIS trigger parameter).</p> <p>Minimum: 0</p> <p>Maximum: 4194304</p>

Parameter	Type	Description
is_serial	String	Serial Data Processing: If this option is selected, FunctionGraph pulls data from the stream only after previous data is processed. If this option is not selected, FunctionGraph pulls data from the stream as long as the pull period ends. Enumeration values: <ul style="list-style-type: none">• true• false
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).
bucket	String	Bucket name (OBS trigger parameter). The name of the OBS bucket used as the event source cannot be the same as that of an existing bucket of the current user or another user. After being created, the bucket name cannot be modified. Minimum: 1 Maximum: 64
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum: 0 Maximum: 1024
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum: 0 Maximum: 1024

Parameter	Type	Description
events	Array of strings	Trigger event (OBS trigger parameter). <ul style="list-style-type: none">● ObjectCreated: all object creation operations, including PUT, POST, COPY, and part assembling● Put: Uploads an object using Put.● Post: Uploads an object using POST● Copy: Copies an object using COPY.● CompleteMultipartUpload: Merges parts of a multipart upload.● ObjectRemoved: Deletes an object.● Delete: Deletes an object by specifying its version ID.● DeleteMarkerCreated: Deletes an object without specifying its version ID.
topic_urn	String	Topic URN (SMN trigger parameter) Minimum: 1 Maximum: 255
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).
kafka_password	String	Kafka password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable SASL authentication(Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).
access_user	String	RabbitMQ username (RabbitMQ trigger parameter).
connect_address	String	Instance IP address (RabbitMQ trigger parameter).
exchange_name	String	Switch name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable SSL (RabbitMQ trigger parameter).

Table 6-580 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. <ul style="list-style-type: none">• sync: synchronous execution• async: asynchronous execution Enumeration values: <ul style="list-style-type: none">• sync• async
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. The unit is in millisecond. This parameter is mandatory for APIG triggers. Minimum: 1 Maximum: 60000
version	String	Function version information.

Status code: 400**Table 6-581** Response body parameters

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

Status code: 401**Table 6-582** Response body parameters

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

Status code: 403

Table 6-583 Response body parameters

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

Status code: 404**Table 6-584** Response body parameters

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

Status code: 500**Table 6-585** Response body parameters

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

Example Requests

- Create an OBS trigger named obs-event-1ec7 with events of uploading files to the input-picture2 bucket.

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}
```

```
{
  "trigger_type_code" : "OBS",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "bucket" : "input-picture2",
    "events" : [ "s3:ObjectCreated:*" ],
    "name" : "obs-event-1ec7"
  }
}
```

- Create a shared APIG trigger named API_test_function, with None authentication (temporary domain name) and 5000s timeout.

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}
```

```
{
  "trigger_type_code" : "APIG",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "func_info" : {
      "timeout" : 5000
    },
  },
}
```

```
"name" : "API_test_function",
"env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
"env_name" : "RELEASE",
"protocol" : "HTTPS",
"auth" : "NONE",
"group_id" : "318b09eb214a41488c667ecd51667e3x",
"sl_domain" : "318b09eb214a41488c667ecd51667e3x.apig.{region}.xxx.com",
"match_mode" : "SWA",
"req_method" : "ANY",
"backend_type" : "FUNCTION",
"type" : 1,
"path" : "/test_gxz_v1_billing"
}
}
```

- Create a dedicated APIG trigger named `API_test_function`, with None authentication (temporary domain name) and 5000s timeout.

POST `https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}`

```
{
"trigger_type_code" : "DEDICATEDGATEWAY",
"trigger_status" : "ACTIVE",
"event_data" : {
"func_info" : {
"timeout" : 5000
},
"name" : "API_test_function",
"env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
"env_name" : "RELEASE",
"protocol" : "HTTPS",
"auth" : "IAM",
"group_id" : "5106210cf79e4xxxx",
"sl_domain" : "5106210cf79e4xxxx.apig.{region_id}.xxx.com",
"match_mode" : "SWA",
"req_method" : "ANY",
"backend_type" : "FUNCTION",
"type" : 1,
"path" : "/test_gxz_v1_billing"
}
}
```

- Create a Kafka trigger named `86ad3efc` to pull messages from the `PUSH_TOKEN_RECORD` consumer group.

POST `https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}`

```
{
"trigger_type_code" : "KAFKA",
"trigger_status" : "DISABLED",
"event_data" : {
"instance_id" : "86ad3efc-c019-460e-91e7-317b1a89f95x",
"topic_ids" : [ "PUSH_TOKEN_RECORD" ],
"batch_size" : 100
}
}
```

- Create a timer trigger to trigger a function every 3 minutes.

POST `https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}`

```
{
"trigger_type_code" : "TIMER",
"trigger_status" : "ACTIVE",
"event_data" : {
"name" : "Timer-l8v2",
"schedule" : "3m",
"schedule_type" : "Rate"
}
}
```

- Create an LTS trigger. (An agency with LTS permissions is required.)

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}

{
  "trigger_type_code" : "LTS",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "log_group_id" : "ccd3fa30-7c86-4590-8a9d-XXX",
    "log_topic_id" : "5b4944dd-9603-481d-9b91-XXX"
  }
}
```

- Create an SMN trigger.

```
POST https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}

{
  "trigger_type_code" : "SMN",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "topic_urn" : "urn:smn:{region}:{project_id}:Failed_times"
  }
}
```

Example Responses

Status code: 201

Created

```
{
  "trigger_id" : "9a14fae1-78cf-4185-ac7a-429eb6dc41fb",
  "trigger_type_code" : "TIMER",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "name" : "Timer-cpg3",
    "schedule" : "3m",
    "schedule_type" : "Rate"
  },
  "last_updated_time" : "2022-11-09 16:37:24",
  "created_time" : "2022-11-09 16:37:24"
}
```

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](#).

6.13.4 Deleting a Trigger

Function

This API is used to delete a trigger.

URI

```
DELETE /v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/  
{trigger_id}
```

Table 6-586 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
trigger_type_code	Yes	String	Trigger type code. Enumeration values: <ul style="list-style-type: none">• TIMER• APIG• CTS• DDS• DMS• DIS• LTS• OBS• SMN• KAFKA• RABBITMQ• DEDICATEDGATEWAY• OPENSOURCEKAFKA• APIC• Gemini Mongo• EVENTGRID• IOTDA
trigger_id	Yes	String	Trigger ID.

Request Parameters

Table 6-587 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format). Default: application/json

Response Parameters

Status code: 400

Table 6-588 Response body parameters

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

Status code: 401

Table 6-589 Response body parameters

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

Status code: 403

Table 6-590 Response body parameters

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

Status code: 404**Table 6-591** Response body parameters

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

Status code: 500**Table 6-592** Response body parameters

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

Example Requests

Delete a trigger.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}
```

Example Responses

None

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](#).

6.13.5 Querying a Trigger

Function

This API is used to query a specified trigger.

URI

GET /v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}

Table 6-593 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.
trigger_type_code	Yes	String	Trigger type code. Enumeration values: <ul style="list-style-type: none">• TIMER• APIG• CTS• DDS• DMS• DIS• LTS• OBS• SMN• KAFKA• RABBITMQ• DEDICATEDGATEWAY• OPENSOURCEKAFKA• APIC• Gemini Mongo• EVENTGRID• IOTDA
trigger_id	Yes	String	Trigger ID.

Request Parameters

Table 6-594 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format). Default: application/json

Response Parameters

Status code: 200

Table 6-595 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.

Parameter	Type	Description
trigger_type_code	String	<p>Trigger type.</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA <p>Enumeration values:</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA • RABBITMQ • DEDICATEDGATEWAY • OPENSOURCEKAFKA • APIC • Gemini Mongo • EVENTGRID • IOTDA
trigger_status	String	<p>Trigger status.</p> <ul style="list-style-type: none"> • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. <p>Enumeration values:</p> <ul style="list-style-type: none"> • ACTIVE • DISABLED
event_data	TriggerEventDataResponseBody object	Trigger source event.

Parameter	Type	Description
last_updated_time	String	Latest update time.
created_time	String	Time when the trigger was created.

Table 6-596 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). <ul style="list-style-type: none">• Rate: specifies the frequency (minutes, hours, or days) at which the function is invoked. If the unit is minute, the value cannot exceed 60. If the unit is hour, the value cannot exceed 24. If the unit is day, the value cannot exceed 30.• Cron: specifies a Cron expression to periodically invoke a function. Enumeration values: <ul style="list-style-type: none">• Rate• Cron
schedule	String	Triggering rule. (timer trigger parameter). <ul style="list-style-type: none">• When the trigger type is Rate, the scheduled rule is used. When the trigger type is Cron, the Cron expression is used.
user_event	String	Additional information (timer trigger parameter). When the timer trigger triggers the function, the execution event (the event parameter of the function) is {"version": "v1.0", "time": "2018-06-01T08:30:00+08:00", "trigger_type": "TIMER", "trigger_name": "Timer_001", "user_event": "Additional information you entered"}.
triggerid	String	APIG trigger ID (APIG trigger parameter).
type	Integer	The API type (APIG trigger parameter). <ul style="list-style-type: none">• 1: public• 2: private
path	String	Path of the API (APIG trigger parameter).

Parameter	Type	Description
protocol	String	Request protocol of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none"> • HTTP • HTTPS
req_method	String	Request mode of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none"> • GET • POST • PUT • DELETE • HEAD • PATCH • OPTIONS • ANY
group_id	String	ID of the group to which the API belongs (APIG trigger parameter).
group_name	String	Name of the group to which the API belongs (APIG trigger parameter).
match_mode	String	Matching mode of the API (APIG trigger parameter). <ul style="list-style-type: none"> • SWA: prefix match • NORMAL: normal match (absolute match) Enumeration values: <ul style="list-style-type: none"> • SWA • NORMAL
env_name	String	Environment in which the API is published (APIG trigger parameter).
env_id	String	ID of the environment in which the API has been published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).

Parameter	Type	Description
auth	String	Security authentication (APIG trigger parameter). <ul style="list-style-type: none">• IAM: IAM authentication. Only IAM users are allowed to access the system. The security level is medium.• APP: Appkey&Appsecret authentication is used. The security level is high. This authentication mode is recommended.• NONE: No authentication mode is used. All users can access the system. This mode is not recommended. Enumeration values: <ul style="list-style-type: none">• IAM• APP• NONE
invoke_url	String	API calling address (APIG trigger parameter).
func_info	ApigTriggerFuncInfo object	FunctionGraph backend details (APIG trigger parameter). This parameter is mandatory for APIG triggers.
sl_domain	String	Subdomain name allocated by the APIG system by default (APIG trigger parameter). Minimum: 1 Maximum: 255
backend_type	String	Backend type of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• FUNCTION
instance_id	String	Instance ID. This parameter is mandatory for DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• APIG trigger: APIG gateway ID• DDS trigger: DB instance ID.• Kafka trigger: Kafka instance ID• RabbitMQ trigger: RabbitMQ instance ID
roma_app_id	String	ID of the integration application to which the API belongs (APIG trigger parameter).
operations	Array of strings	Custom operations (CTS trigger parameter). CTS collects operation records of subscribed cloud resources. If you create a function with a CTS trigger, collected operation records of specified cloud services will be passed as a parameter to invoke the function.

Parameter	Type	Description
collection_name	String	Collection name (DDS trigger parameter).
db_name	String	Database name (DDS trigger parameter).
db_password	String	DDS database password (DDS trigger parameter).
db_user	String	DDS database username (DDS trigger parameter).
instance_addresses	Array of strings	DDS database instance address (DDS trigger parameter).
mode	String	DDS database instance type (DDS trigger parameter). <ul style="list-style-type: none">• Sharding: cluster instance• ReplicaSet: replica set instance• Single: single node instance.
batch_size	Integer	Batch size: Maximum number of data records that can be processed by the function at a time. This parameter is mandatory for DIS, DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• DDS trigger: Set the batch size to a value ranging from 1 to 10,000.• DIS trigger: Set the batch size to a value ranging from 1 to 10,000.• Kafka trigger: Set the batch size to a value ranging from 1 to 1000.• RabbitMQ trigger: Set the batch size to a value ranging from 1 to 1000.
queue_id	String	Queue ID (DMS trigger parameter).
consumer_group_id	String	Consumer group ID (DMS trigger parameter).
polling_interval	Integer	Pull period.
stream_name	String	Stream name (DIS trigger parameter).

Parameter	Type	Description
sharditerator_type	String	Start position (DIS trigger parameter). <ul style="list-style-type: none">• TRIM_HORIZON: Data is read from the earliest valid record stored in the partition.• LATEST: Data is read from the latest record in the partition. This option ensures that the most recent data in the partition is read. Enumeration values: <ul style="list-style-type: none">• TRIM_HORIZON• LATEST
polling_unit	String	Unit of the pull period (DIS trigger parameter). <ul style="list-style-type: none">• s: second• ms: millisecond Enumeration values: <ul style="list-style-type: none">• s• ms
max_fetch_bytes	Integer	Maximum number of bytes to be extracted (DIS trigger parameter). Minimum: 0 Maximum: 4194304
is_serial	String	Serial Data Processing: If this option is selected, FunctionGraph pulls data from the stream only after previous data is processed. If this option is not selected, FunctionGraph pulls data from the stream as long as the pull period ends. Enumeration values: <ul style="list-style-type: none">• true• false
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).
bucket	String	Bucket name (OBS trigger parameter). The name of the OBS bucket used as the event source cannot be the same as that of an existing bucket of the current user or another user. After being created, the bucket name cannot be modified. Minimum: 1 Maximum: 64

Parameter	Type	Description
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum: 0 Maximum: 1024
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum: 0 Maximum: 1024
events	Array of strings	Trigger event (OBS trigger parameter). <ul style="list-style-type: none">● ObjectCreated: all object creation operations, including PUT, POST, COPY, and part assembling● Put: Uploads an object using Put.● Post: Uploads an object using POST● Copy: Copies an object using COPY.● CompleteMultipartUpload: Merges parts of a multipart upload.● ObjectRemoved: Deletes an object.● Delete: Deletes an object by specifying its version ID.● DeleteMarkerCreated: Deletes an object without specifying its version ID.
topic_urn	String	Topic URN (SMN trigger parameter) Minimum: 1 Maximum: 255
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).
kafka_password	String	Kafka password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable SASL authentication(Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).

Parameter	Type	Description
access_user	String	RabbitMQ username (RabbitMQ trigger parameter).
connect_address	String	Instance IP address (RabbitMQ trigger parameter).
exchange_name	String	Switch name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable SSL (RabbitMQ trigger parameter).

Table 6-597 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. <ul style="list-style-type: none">• sync: synchronous execution• async: asynchronous execution Enumeration values: <ul style="list-style-type: none">• sync• async
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. The unit is in millisecond. This parameter is mandatory for APIG triggers. Minimum: 1 Maximum: 60000
version	String	Function version information.

Status code: 400**Table 6-598** Response body parameters

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

Status code: 401**Table 6-599** Response body parameters

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

Status code: 403**Table 6-600** Response body parameters

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

Status code: 404**Table 6-601** Response body parameters

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

Status code: 500**Table 6-602** Response body parameters

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

Example Requests

Query a trigger.

```
GET https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}
```

Example Responses

Status code: 200

OK

```
{
  "trigger_id" : "9a14fae1-78cf-4185-ac7a-429eb6dc41fb",
  "trigger_type_code" : "TIMER",
  "trigger_status" : "ACTIVE",
  "event_data" : {
    "name" : "Timer-cpg3",
    "schedule" : "3m",
    "schedule_type" : "Rate"
  },
  "last_updated_time" : "2022-11-09 16:37:24",
  "created_time" : "2019-10-29 17:15:53"
}
```

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](#).

6.13.6 Updating a Trigger

Function

This API is used to update a trigger.

URI

PUT /v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}

Table 6-603 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
function_urn	Yes	String	Function URN. For details, see the function model description.
trigger_type_code	Yes	String	Trigger type code. Enumeration values: <ul style="list-style-type: none">• TIMER• APIG• CTS• DDS• DMS• DIS• LTS• OBS• SMN• KAFKA• RABBITMQ• DEDICATEDGATEWAY• OPENSOURCEKAFKA• APIC• Gemini Mongo• EVENTGRID• IOTDA
trigger_id	Yes	String	Trigger ID.

Request Parameters

Table 6-604 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format). Default: application/json

Table 6-605 Request body parameters

Parameter	Mandatory	Type	Description
trigger_status	No	String	Trigger status. Enumeration values: <ul style="list-style-type: none">• ACTIVE• DISABLED
event_data	No	Array of UpdateriggerEventData objects	Trigger update event.

Table 6-606 UpdateriggerEventData

Parameter	Mandatory	Type	Description
is_serial	No	Boolean	Serial data processing.
max_fetch_bytes	No	Integer	Max. bytes.
polling_interval	No	Integer	Pull period.
polling_unit	No	String	Pull period unit. Enumeration values: <ul style="list-style-type: none">• ms• s

Response Parameters

Status code: 200

Table 6-607 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.

Parameter	Type	Description
trigger_type_code	String	<p>Trigger type.</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA <p>Enumeration values:</p> <ul style="list-style-type: none"> • TIMER • APIG • CTS • DDS • DMS • DIS • LTS • OBS • SMN • KAFKA • RABBITMQ • DEDICATEDGATEWAY • OPENSOURCEKAFKA • APIC • Gemini Mongo • EVENTGRID • IOTDA
trigger_status	String	<p>Trigger status.</p> <ul style="list-style-type: none"> • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. <p>Enumeration values:</p> <ul style="list-style-type: none"> • ACTIVE • DISABLED
event_data	TriggerEventDataResponse object	Trigger source event.

Parameter	Type	Description
last_updated_time	String	Latest update time.
created_time	String	Time when the trigger was created.

Table 6-608 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). <ul style="list-style-type: none">• Rate: specifies the frequency (minutes, hours, or days) at which the function is invoked. If the unit is minute, the value cannot exceed 60. If the unit is hour, the value cannot exceed 24. If the unit is day, the value cannot exceed 30.• Cron: specifies a Cron expression to periodically invoke a function. Enumeration values: <ul style="list-style-type: none">• Rate• Cron
schedule	String	Triggering rule. (timer trigger parameter). <ul style="list-style-type: none">• When the trigger type is Rate, the scheduled rule is used. When the trigger type is Cron, the Cron expression is used.
user_event	String	Additional information (timer trigger parameter). When the timer trigger triggers the function, the execution event (the event parameter of the function) is {"version": "v1.0", "time": "2018-06-01T08:30:00+08:00", "trigger_type": "TIMER", "trigger_name": "Timer_001", "user_event": "Additional information you entered"}.
triggerid	String	APIG trigger ID (APIG trigger parameter).
type	Integer	The API type (APIG trigger parameter). <ul style="list-style-type: none">• 1: public• 2: private
path	String	Path of the API (APIG trigger parameter).

Parameter	Type	Description
protocol	String	Request protocol of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• HTTP• HTTPS
req_method	String	Request mode of the API (APIG trigger parameter). Enumeration values: <ul style="list-style-type: none">• GET• POST• PUT• DELETE• HEAD• PATCH• OPTIONS• ANY
group_id	String	ID of the group to which the API belongs (APIG trigger parameter).
group_name	String	Name of the group to which the API belongs (APIG trigger parameter).
match_mode	String	Matching mode of the API (APIG trigger parameter). <ul style="list-style-type: none">• SWA: prefix match• NORMAL: normal match (absolute match) Enumeration values: <ul style="list-style-type: none">• SWA• NORMAL
env_name	String	Environment in which the API is published (APIG trigger parameter).
env_id	String	ID of the environment in which the API has been published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).

Parameter	Type	Description
auth	String	<p>Security authentication (APIG trigger parameter).</p> <ul style="list-style-type: none"> • IAM: IAM authentication. Only IAM users are allowed to access the system. The security level is medium. • APP: Appkey&Appsecret authentication is used. The security level is high. This authentication mode is recommended. • NONE: No authentication mode is used. All users can access the system. This mode is not recommended. <p>Enumeration values:</p> <ul style="list-style-type: none"> • IAM • APP • NONE
invoke_url	String	API calling address (APIG trigger parameter).
func_info	ApigTriggerFuncInfo object	FunctionGraph backend details (APIG trigger parameter). This parameter is mandatory for APIG triggers.
sl_domain	String	<p>Subdomain name allocated by the APIG system by default (APIG trigger parameter).</p> <p>Minimum: 1</p> <p>Maximum: 255</p>
backend_type	String	<p>Backend type of the API (APIG trigger parameter).</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • FUNCTION
instance_id	String	<p>Instance ID. This parameter is mandatory for DDS, Kafka, and RabbitMQ triggers.</p> <ul style="list-style-type: none"> • APIG trigger: APIG gateway ID • DDS trigger: DB instance ID. • Kafka trigger: Kafka instance ID • RabbitMQ trigger: RabbitMQ instance ID
roma_app_id	String	ID of the integration application to which the API belongs (APIG trigger parameter).
operations	Array of strings	<p>Custom operations (CTS trigger parameter). CTS collects operation records of subscribed cloud resources. If you create a function with a CTS trigger, collected operation records of specified cloud services will be passed as a parameter to invoke the function.</p>

Parameter	Type	Description
collection_name	String	Collection name (DDS trigger parameter).
db_name	String	Database name (DDS trigger parameter).
db_password	String	DDS database password (DDS trigger parameter).
db_user	String	DDS database username (DDS trigger parameter).
instance_addresses	Array of strings	DDS database instance address (DDS trigger parameter).
mode	String	DDS database instance type (DDS trigger parameter). <ul style="list-style-type: none">• Sharding: cluster instance• ReplicaSet: replica set instance• Single: single node instance.
batch_size	Integer	Batch size: Maximum number of data records that can be processed by the function at a time. This parameter is mandatory for DIS, DDS, Kafka, and RabbitMQ triggers. <ul style="list-style-type: none">• DDS trigger: Set the batch size to a value ranging from 1 to 10,000.• DIS trigger: Set the batch size to a value ranging from 1 to 10,000.• Kafka trigger: Set the batch size to a value ranging from 1 to 1000.• RabbitMQ trigger: Set the batch size to a value ranging from 1 to 1000.
queue_id	String	Queue ID (DMS trigger parameter).
consumer_group_id	String	Consumer group ID (DMS trigger parameter).
polling_interval	Integer	Pull period.
stream_name	String	Stream name (DIS trigger parameter).

Parameter	Type	Description
sharditerator_type	String	Start position (DIS trigger parameter). <ul style="list-style-type: none">● TRIM_HORIZON: Data is read from the earliest valid record stored in the partition.● LATEST: Data is read from the latest record in the partition. This option ensures that the most recent data in the partition is read. Enumeration values: <ul style="list-style-type: none">● TRIM_HORIZON● LATEST
polling_unit	String	Unit of the pull period (DIS trigger parameter). <ul style="list-style-type: none">● s: second● ms: millisecond Enumeration values: <ul style="list-style-type: none">● s● ms
max_fetch_bytes	Integer	Maximum number of bytes to be extracted (DIS trigger parameter). Minimum: 0 Maximum: 4194304
is_serial	String	Serial Data Processing: If this option is selected, FunctionGraph pulls data from the stream only after previous data is processed. If this option is not selected, FunctionGraph pulls data from the stream as long as the pull period ends. Enumeration values: <ul style="list-style-type: none">● true● false
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).
bucket	String	Bucket name (OBS trigger parameter). The name of the OBS bucket used as the event source cannot be the same as that of an existing bucket of the current user or another user. After being created, the bucket name cannot be modified. Minimum: 1 Maximum: 64

Parameter	Type	Description
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum: 0 Maximum: 1024
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum: 0 Maximum: 1024
events	Array of strings	Trigger event (OBS trigger parameter). <ul style="list-style-type: none">● ObjectCreated: all object creation operations, including PUT, POST, COPY, and part assembling● Put: Uploads an object using Put.● Post: Uploads an object using POST● Copy: Copies an object using COPY.● CompleteMultipartUpload: Merges parts of a multipart upload.● ObjectRemoved: Deletes an object.● Delete: Deletes an object by specifying its version ID.● DeleteMarkerCreated: Deletes an object without specifying its version ID.
topic_urn	String	Topic URN (SMN trigger parameter) Minimum: 1 Maximum: 255
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).
kafka_password	String	Kafka password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable SASL authentication(Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).

Parameter	Type	Description
access_user	String	RabbitMQ username (RabbitMQ trigger parameter).
connect_address	String	Instance IP address (RabbitMQ trigger parameter).
exchange_name	String	Switch name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable SSL (RabbitMQ trigger parameter).

Table 6-609 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. <ul style="list-style-type: none">• sync: synchronous execution• async: asynchronous execution Enumeration values: <ul style="list-style-type: none">• sync• async
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. The unit is in millisecond. This parameter is mandatory for APIG triggers. Minimum: 1 Maximum: 60000
version	String	Function version information.

Status code: 404**Table 6-610** Response body parameters

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

Example Requests

Enable a trigger.

```
PUT https://{Endpoint}/v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}
{
  "trigger_status": "ACTIVE"
}
```

Example Responses

Status code: 200

OK

```
{
  "trigger_id": "9a14fae1-78cf-4185-ac7a-429eb6dc41fb",
  "trigger_type_code": "TIMER",
  "trigger_status": "ACTIVE",
  "event_data": {
    "name": "Timer-cpg3",
    "schedule": "3m",
    "schedule_type": "Rate"
  },
  "last_updated_time": "2022-11-09 16:37:24",
  "created_time": "2019-10-29 17:15:53"
}
```

Status code: 404

Not Found

```
{
  "error_code": "FSS.0404",
  "error_msg": "not found"
}
```

Status Codes

Status Code	Description
200	OK
404	Not Found

Error Codes

See [Error Codes](#).

6.14 Function Flows

6.14.1 Executing a Flow Synchronously

Function

This API is used to execute an express flow synchronously. It is available only in the Chinese mainland regions.

URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/sync-executions

Table 6-611 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow definition ID. Minimum: 1 Maximum: 512

Request Parameters

Table 6-612 Request body parameters

Parameter	Mandatory	Type	Description
headers	No	Object	Headers for flow execution.
input	Yes	Object	Input parameters for flow execution. You can use JSONPath for parameter mapping and specify a default value.

Response Parameters

Status code: 200

Table 6-613 Response body parameters

Parameter	Type	Description
execution_id	String	Flow instance ID. Minimum: 1 Maximum: 64
status	String	Flow execution status. Minimum: 1 Maximum: 64 Enumeration values: <ul style="list-style-type: none">• success• fail• timeout
output	Object	Flow execution result in JSON format. This parameter has a value only when the status is success.
errors	Array of SyncExecutionNodeErrorDetail objects	Flow execution error information. This parameter has a value only when status is fail. Array Length: 0 - 200
begin_time	String	Flow instance creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
end_time	String	Flow instance end time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64

Table 6-614 SyncExecutionNodeErrorDetail

Parameter	Type	Description
node_id	String	Flow node ID. Minimum: 1 Maximum: 64
error_message	String	Error details. Minimum: 1 Maximum: 2048

Parameter	Type	Description
begin_time	String	Flow instance creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
end_time	String	Flow instance end time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64

Status code: 400

Table 6-615 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 404

Table 6-616 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500

Table 6-617 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Example Requests

Execute a flow synchronously.

```
POST /{project_id}/fgs/workflows/{workflow_id}/sync-executions
```

```
{
  "headers" : {
    "tenantId" : "user1"
  },
  "input" : {
    "arg1" : "argument_1",
    "arg2" : "argument_2"
  }
}
```

Example Responses

Status code: 200

Success

```
{
  "execution_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
  "status" : "success",
  "output" : {
    "result" : 200,
    "message" : "success"
  },
  "errors" : [ {
    "node_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
    "error_message" : "Exception happened",
    "begin_time" : "2021-01-01T00:00:00Z",
    "end_time" : "2021-01-01T00:00:00Z"
  } ],
  "begin_time" : "2021-01-01T00:00:00Z",
  "end_time" : "2021-01-01T00:00:00Z"
}
```

Status Codes

Status Code	Description
200	Success

Status Code	Description
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.2 Executing a Flow Asynchronously

Function

This API is used to execute a flow asynchronously. It is available only in the Chinese mainland regions.

URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions

Table 6-618 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow definition ID. Minimum: 1 Maximum: 512

Request Parameters

Table 6-619 Request header parameters

Parameter	Mandatory	Type	Description
X-Create-Time	No	String	workflowRun task create time
X-WorkflowRun-ID	No	String	workflowRun id

Parameter	Mandatory	Type	Description
X-WorkflowRun-MergeFnParameters	No	String	Combines the output of the previous node with the input of the next node into an input.

Table 6-620 Request body parameters

Parameter	Mandatory	Type	Description
headers	No	Object	Headers for flow execution.
input	Yes	Object	Input parameters for flow execution. You can use JSONPath for parameter mapping and specify a default value.

Response Parameters

Status code: 200

Table 6-621 Response body parameters

Parameter	Type	Description
execution_id	String	Error code. Minimum: 1 Maximum: 64

Status code: 400

Table 6-622 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 404**Table 6-623** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500**Table 6-624** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Example Requests

Execute a flow.

```
POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions
```

```
{
  "headers": {
    "tenantId": "user1"
  },
  "input": {
    "arg1": "argument_1",
    "arg2": "argument_2"
  }
}
```

Example Responses

Status code: 200

Success


```
{  
  "execution_id" : "48aff955-ea10-4ffd-b426-190bc192dc14"  
}
```

Status Codes

Status Code	Description
200	Success
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.3 Deleting Flows

Function

This API is used to delete a flow.

URI

DELETE /v2/{project_id}/fgs/workflows

Table 6-625 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64

Request Parameters

Table 6-626 Request body parameters

Parameter	Mandatory	Type	Description
workflow_urns	Yes	Array of strings	Flow URNs. Array Length: 0 - 200

Response Parameters

Status code: 200

Table 6-627 Response body parameters

Parameter	Type	Description
success	Array of strings	URNs of successful flows. Array Length: 0 - 100
fail	Array of OperateErrorInfo objects	Details of failed flows. Array Length: 0 - 200

Table 6-628 OperateErrorInfo

Parameter	Type	Description
workflow_urn	String	Unique flow URN. Minimum: 1 Maximum: 128
error_detail	String	Error details. Minimum: 1 Maximum: 64

Status code: 400

Table 6-629 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-630 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Delete function flows with URNs urn:fss:
{region}:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow1:latest and
urn:fss:
{region}:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow2:latest.

```
DELETE /v2/{project_id}/fgs/workflows
```

```
{  
  "workflow_urns" : [ "urn:fss:{region}:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow1:latest",  
                    "urn:fss:{region}:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow2:latest" ]  
}
```

Example Responses

None

Status Codes

Status Code	Description
200	Success
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.4 Querying a Flow

Function

This API is used to query a flow.

URI

GET /v2/{project_id}/fgs/workflows

Table 6-631 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64

Table 6-632 Query Parameters

Parameter	Mandatory	Type	Description
workflow_name	No	String	Flow name. Minimum: 0 Maximum: 64
limit	No	Integer	Number of items displayed on each page. The default value is 200. A value greater than 200 will be taken as 200. Minimum: 1
offset	No	Integer	Offset of pagination. The default value is 0. A value less than 0 will be taken as 0. Minimum: 0
enterprise_project	No	String	Enterprise project ID.
mode	No	String	Flow type. Options: <ul style="list-style-type: none">• NORMAL• EXPRESS

Request Parameters

None

Response Parameters

Status code: 200

Table 6-633 Response body parameters

Parameter	Type	Description
total	Long	Number of objects that meet the query conditions. Minimum: 0 Maximum: 1000000
size	Integer	Size of the returned objects. Minimum: 0 Maximum: 200
workflows	Array of WorkflowSimpleInfo objects	Returned objects. Array Length: 0 - 200

Table 6-634 WorkflowSimpleInfo

Parameter	Type	Description
id	String	Unique flow ID. Minimum: 1 Maximum: 64
workflow_urn	String	Flow URN. Format:urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version>Currently, package and version can only be set to default and latest, respectively.
name	String	Flow name. Minimum: 1 Maximum: 64
description	String	Flow description. Minimum: 0 Maximum: 512

Parameter	Type	Description
created_time	String	Flow creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
updated_time	String	Flow modification time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow creator. Minimum: 0 Maximum: 64
enable_stream_response	Boolean	Whether to return stream data. Default: false

Status code: 400

Table 6-635 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-636 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query function flows.

```
GET /v2/{project_id}/fgs/workflows
```

Example Responses

Status code: 200

Response to flow query.

```
{
  "total" : 1,
  "size" : 1,
  "workflows" : [ {
    "id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
    "workflow_urn" : "urn:fss:cn-north-7:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow:latest",
    "name" : "test-flow",
    "description" : "desc",
    "created_time" : "2021-01-01T00:00:00Z",
    "updated_time" : "2021-01-01T00:00:00Z",
    "created_by" : "admin"
  } ]
}
```

Status Codes

Status Code	Description
200	Response to flow query.
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.5 Creating a Flow

Function

This API is used to create a flow.

URI

POST /v2/{project_id}/fgs/workflows

Table 6-637 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64

Request Parameters

Table 6-638 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Flow name. Minimum: 1 Maximum: 64
description	No	String	Flow description. Minimum: 1 Maximum: 512
start	Yes	String	Start node ID. Minimum: 1 Maximum: 256
triggers	No	Array of Trigger objects	Trigger list. Array Length: 0 - 200
functions	Yes	Array of Function objects	Function list. Array Length: 0 - 100

Parameter	Mandatory	Type	Description
states	Yes	Array of OperationState objects	Node list. For details, see the descriptions of SleepState and OperationState. Array Length: 1 - 100
constants	Yes	Object	Constants.
retries	Yes	Array of Retry objects	Retry policies. Array Length: 0 - 200
mode	No	String	Flow type.- NORMAL : better for common services that take a long time to execute. Flows of this type support persistence and query of historical execution records and asynchronous invocation.- EXPRESS : better for services that take less than five minutes to execute but need premium performance. Flows of this type support both synchronous and asynchronous invocations, but do not support persistence of historical execution records.By default, NORMAL is used. Default: NORMAL Enumeration values: <ul style="list-style-type: none"> • NORMAL • EXPRESS
express_config	No	ExpressConfig object	Express flow configuration. This parameter is required when mode is set to EXPRESS .
enterprise_project_id	No	String	Enterprise project ID. Minimum: 0 Maximum: 64
enable_stream_response	No	Boolean	Whether to return stream data. Default: false

Table 6-639 Trigger

Parameter	Mandatory	Type	Description
trigger_name	Yes	String	Trigger name. Minimum: 1 Maximum: 256
trigger_type	Yes	String	Trigger type. Options: <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG (shared) • APIG_DE (dedicated) • OBS Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG • APIG_DE • OBS
enabled	No	Boolean	Whether to enable the trigger. Default: true Enumeration values: <ul style="list-style-type: none"> • true • false
trigger_config	No	OBSTriggerConfig object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-640 OBSTriggerConfig

Parameter	Mandatory	Type	Description
bucket	Yes	String	OBS bucket name. This parameter is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 64

Parameter	Mandatory	Type	Description
events	Yes	Array of strings	OBS events. This parameter is mandatory when trigger_type is set to OBS. Array Length: 1 - 64
prefix	Yes	String	Object name prefix, which is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 1024
suffix	Yes	String	Object name suffix, which is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 1024

Table 6-641 Function

Parameter	Mandatory	Type	Description
name	Yes	String	Function name, which must be unique in a flow. Minimum: 0 Maximum: 256
operation	Yes	String	Function URN. Minimum: 0 Maximum: 256
metadata	No	Object	Custom function attribute.

Table 6-642 OperationState

Parameter	Mandatory	Type	Description
action_mode	No	String	Action execution mode. Serial and parallel modes are supported. The default mode is serial. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• sequential• parallel
actions	Yes	Array of Action objects	Operations to be performed. Array Length: 1 - 10
on_errors	No	Array of OnError objects	Error handling policy. Array Length: 0 - 200
id	Yes	String	Node ID, which must be unique in the flow. Minimum: 0 Maximum: 64
name	Yes	String	Node name. Minimum: 1 Maximum: 256
type	Yes	String	Node type. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• Operation• Sleep• End
end	Yes	Boolean	Whether the node is an end node.
transition	Yes	String	ID of the next node. Minimum: 0 Maximum: 256
state_data_filter	No	StateDataFilter object	Filter expression.

Parameter	Mandatory	Type	Description
duration	No	Long	Waiting time, in seconds. This parameter is mandatory and valid only when the node type is Sleep. Minimum: 0.001 Maximum: 86400

Table 6-643 Action

Parameter	Mandatory	Type	Description
function_ref	No	FunctionRef object	Function invocation information.

Table 6-644 FunctionRef

Parameter	Mandatory	Type	Description
ref_name	Yes	String	Function reference name, which must be the same as the name in the outer functions. Minimum: 0 Maximum: 256
invoke_mode	No	String	Function invocation mode. Currently, only synchronous invocation is supported. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• synchronize• asynchronous

Parameter	Mandatory	Type	Description
arguments	Yes	Object	<p>Input parameters for function execution. Constants can be referenced.</p> <p>Format: parameter path constant value/path</p> <p>The parameter path is the JSONPath (for example, \$.a.b[0].c) of an input parameter.</p> <p>The constant value can be a number, string (enclosed in single quotation marks), or Boolean.</p> <p>The constant path is the JSONPath of a constant. It must be represented with \$CONST for a root node. For example, \$CONST.a.b.</p>

Table 6-645 OnError

Parameter	Mandatory	Type	Description
error	No	String	<p>Error matching expression, which is used to filter exceptions.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>
transition	No	String	<p>ID of the next node.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>
retry_ref	No	String	<p>Retry policy name.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>

Table 6-646 StateDataFilter

Parameter	Mandatory	Type	Description
input	No	String	Input filter expression (JSONPath). Minimum: 0 Maximum: 256
output	No	String	Output filter expression (JSONPath). Minimum: 0 Maximum: 256

Table 6-647 Retry

Parameter	Mandatory	Type	Description
name	Yes	String	Retry policy name, which must be unique in a flow. Minimum: 1 Maximum: 256
delay	No	Long	Retry interval, in seconds. Default value: 1. Minimum: 1 Maximum: 30
max_attempts	No	Long	Maximum number of retry attempts. Default value: 3. Minimum: 1 Maximum: 8

Table 6-648 ExpressConfig

Parameter	Mandatory	Type	Description
log_level	No	String	<p>Execution log level, which is valid only when mode is set to EXPRESS.</p> <p>Options:</p> <ul style="list-style-type: none"> • ALL: Execution logs of all nodes will be recorded. • ERROR: Only execution logs of abnormal nodes will be recorded. NONE: No logs will be recorded. <p>To set this parameter to ALL or ERROR, enable LTS first.</p> <p>Minimum: 1 Maximum: 5</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • ERROR • NONE

Response Parameters

Status code: 201

Table 6-649 Response body parameters

Parameter	Type	Description
id	String	<p>Unique flow ID.</p> <p>Minimum: 1 Maximum: 64</p>
workflow_urn	String	<p>Flow URN.</p> <p>Format:urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version>Currently, package and version can only be set to default and latest, respectively.</p>
name	String	<p>Flow name.</p> <p>Minimum: 1 Maximum: 64</p>

Parameter	Type	Description
description	String	Flow description. Minimum: 0 Maximum: 512
created_time	String	Flow creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
updated_time	String	Flow modification time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow creator. Minimum: 0 Maximum: 64
enable_stream_response	Boolean	Whether to return stream data. Default: false

Status code: 400**Table 6-650** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-651 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Create a function flow named workflow_test with start node test.

```
POST /v2/{project_id}/fgs/workflows
```

```
{
  "name": "workflow_test",
  "start": "test",
  "functions": [ {
    "name": "test",
    "operation": "urn:fss:{region}:c53626012ba84727b938ca8bf03108ef:test:latest"
  } ],
  "constants": { },
  "states": [ {
    "id": "test",
    "name": "test",
    "type": "Operation",
    "end": false,
    "transition": "end",
    "actions": [ {
      "function_ref": {
        "ref_name": "test",
        "arguments": {
          "execution_name": "$.test"
        }
      }
    }
  ]
}, {
  "id": "end",
  "name": "end",
  "type": "End",
  "end": true,
  "transition": "",
  "state_data_filter": {
    "input": "",
    "output": ""
  },
  "actions": [ ],
  "action_mode": ""
} ],
  "retries": [ {
    "name": "test"
  } ]
}
```

Example Responses

Status code: 201

Created

```
{
  "id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
  "workflow_urn" : "urn:fss:cn-north-7:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow:latest",
  "name" : "test-flow",
  "description" : "desc",
  "created_time" : "2021-01-01T00:00:00Z",
  "updated_time" : "2021-01-01T00:00:00Z",
  "created_by" : "admin"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.6 Querying Instances of a Flow

Function

This API is used to query instances of a flow.

URI

GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions

Table 6-652 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512

Table 6-653 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed on each page. The maximum value is 200. Excessive records will not be returned. Minimum: 0 Maximum: 500
status	No	String	Instance status. Minimum: 0 Maximum: 64 Enumeration values: <ul style="list-style-type: none"> • success • fail • running • timeout • cancel
start_time	No	String	Query start time (UTC). If the start time is not specified, it is three days earlier than the end time.
end_time	No	String	Query end time (UTC). If the end time is not specified, it is three days later than the start time. If neither of them is set, data of the last three days is queried by default.

Request Parameters

None

Response Parameters

Status code: 200

Table 6-654 Response body parameters

Parameter	Type	Description
executions	Array of FlowExecutionBrief objects	Flow execution information. Array Length: 0 - 999

Table 6-655 FlowExecutionBrief

Parameter	Type	Description
workflow_id	String	Flow ID. Minimum: 1 Maximum: 64
workflow_urn	String	Flow URN. Format:urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version>Currently, package and version can only be set to default and latest, respectively.
execution_id	String	Flow instance ID. Minimum: 1 Maximum: 64
status	String	Flow instance execution status. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• success• fail• running• timeout• cancel
begin_time	String	Flow instance creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
end_time	String	Flow instance end time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
last_update_time	String	Flow instance last update time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow instance creator. Minimum: 1 Maximum: 32

Status code: 400

Table 6-656 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500**Table 6-657** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query the instances of function flow {workflow_id}.

```
GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions
```

Example Responses

Status code: 200

Response to flow instance query.

```
{  
  "executions" : [ {  
    "workflow_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",  
    "workflow_urn" : "urn:fss:cn-north-7:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow:latest",
```

```
"execution_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",  
"status" : "running",  
"begin_time" : "2021-01-01T00:00:00Z",  
"end_time" : "2021-01-01T00:00:00Z",  
"last_update_time" : "2021-01-01T00:00:00Z",  
"created_by" : "admin"  
} ]  
}
```

Status Codes

Status Code	Description
200	Response to flow instance query.
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.7 Querying a Flow Instance

Function

This API is used to query an instance of a flow.

URI

GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}

Table 6-658 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512
execution_id	Yes	String	Flow instance ID. Minimum: 1 Maximum: 64

Request Parameters

Table 6-659 Request header parameters

Parameter	Mandatory	Type	Description
X-Get-Workflow-Full-History-Data	No	Boolean	Whether to obtain the complete flow execution output.

Response Parameters

Status code: 200**Table 6-660** Response body parameters

Parameter	Type	Description
workflow_id	String	Flow ID. Minimum: 1 Maximum: 64
workflow_urn	String	Flow URN. Format:urn:fss:<region_id>:<project_id>:workflo w:<package>:<workflow_name>:<version>Curr ently, package and version can only be set to default and latest, respectively.
execution_id	String	Flow instance ID. Minimum: 1 Maximum: 64
status	String	Flow instance execution status. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• success• fail• running• timeout• cancel
headers	Object	Headers for function execution.
input	Object	Input parameters for function execution.
output	Object	Function execution result.

Parameter	Type	Description
begin_time	String	Flow instance creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
end_time	String	Flow instance end time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
last_update_time	String	Flow instance last update time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow instance creator. Minimum: 1 Maximum: 32
node_execution_details	Array of NodeExecutionDetail objects	Node execution information. Array Length: 0 - 200

Table 6-661 NodeExecutionDetail

Parameter	Type	Description
node_id	String	Flow node ID. Minimum: 1 Maximum: 64
node_name	String	Flow node name.
execution_id	String	Flow node execution record ID.
executions	Array of NodeExecutionDetail objects	Node execution records. Array Length: 0 - 200

Table 6-662 NodeExecution

Parameter	Type	Description
status	String	Flow node execution status. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• success• fail• running• timeout• cancel
input	Object	Input parameters for function execution.
output	Object	Function execution result.
begin_time	Long	Node start time (UTC), precise to milliseconds. Minimum: 0 Maximum: 9999999999999999
end_time	Long	Node end time (UTC), precise to milliseconds. Minimum: 0 Maximum: 9999999999999999
error_message	Object	Error message. This parameter has a value only when the node execution fails.
request_id	String	Flow node request ID.

Status code: 400**Table 6-663** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 404**Table 6-664** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500**Table 6-665** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query details about instance {execution_id} of function flow {workflow_id}.

```
GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}
```

Example Responses**Status code: 200**

OK

```
{
  "workflow_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
  "workflow_urn" : "urn:fss:cn-north-7:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow:latest",
  "execution_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
  "status" : "running",
  "headers" : {
```

```
    "tenantId" : "user1"
  },
  "input" : {
    "arg1" : "argument_1",
    "arg2" : "argument_2"
  },
  "output" : {
    "arg1" : "argument_1",
    "arg2" : "argument_2"
  },
  "begin_time" : "2021-01-01T00:00:00Z",
  "end_time" : "2021-01-01T00:00:00Z",
  "last_update_time" : "2021-01-01T00:00:00Z",
  "created_by" : "admin",
  "node_execution_details" : [ {
    "node_id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
    "node_name" : "string",
    "execution_id" : "string",
    "executions" : [ {
      "status" : "running",
      "input" : {
        "arg1" : "argument_1",
        "arg2" : "argument_2"
      },
      "output" : {
        "arg1" : "argument_1",
        "arg2" : "argument_2"
      },
      "begin_time" : 1605119892050,
      "end_time" : 1605119892050,
      "error_message" : {
        "detail:\\"Execution failed\\" : null
      },
      "request_id" : "string"
    }
  ]
}
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.8 Querying Metadata of a Flow Instance

Function

This API is used to query the instance metadata of a flow.

URI

GET /v2/{project_id}/fgs/workflows/{workflow_id}

Table 6-666 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512

Request Parameters

None

Response Parameters

Status code: 200

Table 6-667 Response body parameters

Parameter	Type	Description
id	String	Unique flow ID. Minimum: 1 Maximum: 64
workflow_urn	String	Flow URN. Format: urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version> Currently, package and version can only be set to default and latest, respectively.
created_time	String	Flow creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
updated_time	String	Flow modification time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64

Parameter	Type	Description
created_by	String	Flow creator. Minimum: 0 Maximum: 64
lts_group_id	String	Log group ID for an express flow. This parameter is returned only when the log level is not NONE.
lts_stream_id	String	Log stream ID for an express flow. This parameter is returned only when the log level is not NONE.
definition	WorkflowCreateBody object	Body for creating a function flow.

Table 6-668 WorkflowCreateBody

Parameter	Type	Description
name	String	Flow name. Minimum: 1 Maximum: 64
description	String	Flow description. Minimum: 1 Maximum: 512
start	String	Start node ID. Minimum: 1 Maximum: 256
triggers	Array of Trigger objects	Trigger list. Array Length: 0 - 200
functions	Array of Function objects	Function list. Array Length: 0 - 100
states	Array of OperationState objects	Node list. For details, see the descriptions of SleepState and OperationState. Array Length: 1 - 100
constants	Object	Constants.
retries	Array of Retry objects	Retry policies. Array Length: 0 - 200

Parameter	Type	Description
mode	String	Flow type.- NORMAL : better for common services that take a long time to execute. Flows of this type support persistence and query of historical execution records and asynchronous invocation.- EXPRESS : better for services that take less than five minutes to execute but need premium performance. Flows of this type support both synchronous and asynchronous invocations, but do not support persistence of historical execution records.By default, NORMAL is used. Default: NORMAL Enumeration values: <ul style="list-style-type: none">• NORMAL• EXPRESS
express_config	ExpressConfig object	Express flow configuration. This parameter is required when mode is set to EXPRESS .
enterprise_project_id	String	Enterprise project ID. Minimum: 0 Maximum: 64
enable_stream_response	Boolean	Whether to return stream data. Default: false

Table 6-669 Trigger

Parameter	Type	Description
trigger_name	String	Trigger name. Minimum: 1 Maximum: 256

Parameter	Type	Description
trigger_type	String	<p>Trigger type. Options:</p> <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG (shared) • APIG_DE (dedicated) • OBS <p>Minimum: 1 Maximum: 32 Enumeration values:</p> <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG • APIG_DE • OBS
enabled	Boolean	<p>Whether to enable the trigger.</p> <p>Default: true</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • true • false
trigger_config	OBSTriggerConfig object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-670 OBSTriggerConfig

Parameter	Type	Description
bucket	String	<p>OBS bucket name. This parameter is mandatory when trigger_type is set to OBS.</p> <p>Minimum: 1 Maximum: 64</p>
events	Array of strings	<p>OBS events. This parameter is mandatory when trigger_type is set to OBS.</p> <p>Array Length: 1 - 64</p>
prefix	String	<p>Object name prefix, which is mandatory when trigger_type is set to OBS.</p> <p>Minimum: 1 Maximum: 1024</p>

Parameter	Type	Description
suffix	String	Object name suffix, which is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 1024

Table 6-671 Function

Parameter	Type	Description
name	String	Function name, which must be unique in a flow. Minimum: 0 Maximum: 256
operation	String	Function URN. Minimum: 0 Maximum: 256
metadata	Object	Custom function attribute.

Table 6-672 OperationState

Parameter	Type	Description
action_mode	String	Action execution mode. Serial and parallel modes are supported. The default mode is serial. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none"> • sequential • parallel
actions	Array of Action objects	Operations to be performed. Array Length: 1 - 10
on_errors	Array of OnError objects	Error handling policy. Array Length: 0 - 200
id	String	Node ID, which must be unique in the flow. Minimum: 0 Maximum: 64

Parameter	Type	Description
name	String	Node name. Minimum: 1 Maximum: 256
type	String	Node type. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• Operation• Sleep• End
end	Boolean	Whether the node is an end node.
transition	String	ID of the next node. Minimum: 0 Maximum: 256
state_data_filter	StateDataFilter object	Filter expression.
duration	Long	Waiting time, in seconds. This parameter is mandatory and valid only when the node type is Sleep. Minimum: 0.001 Maximum: 86400

Table 6-673 Action

Parameter	Type	Description
function_ref	FunctionRef object	Function invocation information.

Table 6-674 FunctionRef

Parameter	Type	Description
ref_name	String	Function reference name, which must be the same as the name in the outer functions. Minimum: 0 Maximum: 256

Parameter	Type	Description
invoke_mode	String	Function invocation mode. Currently, only synchronous invocation is supported. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none"> • synchronize • asynchronous
arguments	Object	Input parameters for function execution. Constants can be referenced. Format: parameter path constant value/path The parameter path is the JSONPath (for example, \$.a.b[0].c) of an input parameter. The constant value can be a number, string (enclosed in single quotation marks), or Boolean. The constant path is the JSONPath of a constant. It must be represented with \$CONST for a root node. For example, \$CONST.a.b.

Table 6-675 OnError

Parameter	Type	Description
error	String	Error matching expression, which is used to filter exceptions. Minimum: 0 Maximum: 256
transition	String	ID of the next node. Minimum: 0 Maximum: 256
retry_ref	String	Retry policy name. Minimum: 0 Maximum: 256

Table 6-676 StateDataFilter

Parameter	Type	Description
input	String	Input filter expression (JSONPath). Minimum: 0 Maximum: 256
output	String	Output filter expression (JSONPath). Minimum: 0 Maximum: 256

Table 6-677 Retry

Parameter	Type	Description
name	String	Retry policy name, which must be unique in a flow. Minimum: 1 Maximum: 256
delay	Long	Retry interval, in seconds. Default value: 1. Minimum: 1 Maximum: 30
max_attempts	Long	Maximum number of retry attempts. Default value: 3. Minimum: 1 Maximum: 8

Table 6-678 ExpressConfig

Parameter	Type	Description
log_level	String	<p>Execution log level, which is valid only when mode is set to EXPRESS.</p> <p>Options:</p> <ul style="list-style-type: none"> • ALL: Execution logs of all nodes will be recorded. • ERROR: Only execution logs of abnormal nodes will be recorded. NONE: No logs will be recorded. <p>To set this parameter to ALL or ERROR, enable LTS first.</p> <p>Minimum: 1</p> <p>Maximum: 5</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • ERROR • NONE

Status code: 400

Table 6-679 Response body parameters

Parameter	Type	Description
error_code	String	<p>Error code.</p> <p>Minimum: 1</p> <p>Maximum: 36</p>
error_msg	String	<p>Error description.</p> <p>Minimum: 2</p> <p>Maximum: 512</p>
request_id	String	<p>Request ID.</p> <p>Minimum: 2</p> <p>Maximum: 512</p>

Status code: 500

Table 6-680 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query the metadata of function flow {workflow_id}.

```
GET /v2/{project_id}/fgs/workflows/{workflow_id}
```

Example Responses

Status code: 200

OK

```
{
  "id" : "fa466a62-73a2-49b9-9261-358dfe873b6e",
  "created_time" : "2022-09-01T01:29:46Z",
  "updated_time" : "2022-09-13T07:27:02Z",
  "workflow_urn" : "urn:fss:cn-
north-7:c53626012ba84727b938ca8bf03108ef:workflow:default:flow_nxy:latest",
  "lts_group_id" : "124cef5b-d494-490d-af94-166c4bef0e0d",
  "lts_stream_id" : "07e89ef7-d038-4018-97de-167b255de61f"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.9 Modifying Metadata of a Flow Instance

Function

This API is used to modify the instance metadata of a flow.

URI

PUT /v2/{project_id}/fgs/workflows/{workflow_id}

Table 6-681 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512

Request Parameters

Table 6-682 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Flow name. Minimum: 1 Maximum: 64
description	No	String	Flow description. Minimum: 1 Maximum: 512
start	Yes	String	Start node ID. Minimum: 1 Maximum: 256
triggers	No	Array of Trigger objects	Trigger list. Array Length: 0 - 200
functions	Yes	Array of Function objects	Function list. Array Length: 0 - 100

Parameter	Mandatory	Type	Description
states	Yes	Array of OperationState objects	Node list. For details, see the descriptions of SleepState and OperationState. Array Length: 1 - 100
constants	Yes	Object	Constants.
retries	Yes	Array of Retry objects	Retry policies. Array Length: 0 - 200
mode	No	String	Flow type.- NORMAL : better for common services that take a long time to execute. Flows of this type support persistence and query of historical execution records and asynchronous invocation.- EXPRESS : better for services that take less than five minutes to execute but need premium performance. Flows of this type support both synchronous and asynchronous invocations, but do not support persistence of historical execution records.By default, NORMAL is used. Default: NORMAL Enumeration values: <ul style="list-style-type: none"> • NORMAL • EXPRESS
express_config	No	ExpressConfig object	Express flow configuration. This parameter is required when mode is set to EXPRESS .
enterprise_project_id	No	String	Enterprise project ID. Minimum: 0 Maximum: 64
enable_stream_response	No	Boolean	Whether to return stream data. Default: false

Table 6-683 Trigger

Parameter	Mandatory	Type	Description
trigger_name	Yes	String	Trigger name. Minimum: 1 Maximum: 256
trigger_type	Yes	String	Trigger type. Options: <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG (shared) • APIG_DE (dedicated) • OBS Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none"> • FLOWTIMER • SMN • APIG • APIG_DE • OBS
enabled	No	Boolean	Whether to enable the trigger. Default: true Enumeration values: <ul style="list-style-type: none"> • true • false
trigger_config	No	OBSTriggerConfig object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-684 OBSTriggerConfig

Parameter	Mandatory	Type	Description
bucket	Yes	String	OBS bucket name. This parameter is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 64

Parameter	Mandatory	Type	Description
events	Yes	Array of strings	OBS events. This parameter is mandatory when trigger_type is set to OBS. Array Length: 1 - 64
prefix	Yes	String	Object name prefix, which is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 1024
suffix	Yes	String	Object name suffix, which is mandatory when trigger_type is set to OBS. Minimum: 1 Maximum: 1024

Table 6-685 Function

Parameter	Mandatory	Type	Description
name	Yes	String	Function name, which must be unique in a flow. Minimum: 0 Maximum: 256
operation	Yes	String	Function URN. Minimum: 0 Maximum: 256
metadata	No	Object	Custom function attribute.

Table 6-686 OperationState

Parameter	Mandatory	Type	Description
action_mode	No	String	Action execution mode. Serial and parallel modes are supported. The default mode is serial. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• sequential• parallel
actions	Yes	Array of Action objects	Operations to be performed. Array Length: 1 - 10
on_errors	No	Array of OnError objects	Error handling policy. Array Length: 0 - 200
id	Yes	String	Node ID, which must be unique in the flow. Minimum: 0 Maximum: 64
name	Yes	String	Node name. Minimum: 1 Maximum: 256
type	Yes	String	Node type. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• Operation• Sleep• End
end	Yes	Boolean	Whether the node is an end node.
transition	Yes	String	ID of the next node. Minimum: 0 Maximum: 256
state_data_filter	No	StateDataFilter object	Filter expression.

Parameter	Mandatory	Type	Description
duration	No	Long	Waiting time, in seconds. This parameter is mandatory and valid only when the node type is Sleep. Minimum: 0.001 Maximum: 86400

Table 6-687 Action

Parameter	Mandatory	Type	Description
function_ref	No	FunctionRef object	Function invocation information.

Table 6-688 FunctionRef

Parameter	Mandatory	Type	Description
ref_name	Yes	String	Function reference name, which must be the same as the name in the outer functions. Minimum: 0 Maximum: 256
invoke_mode	No	String	Function invocation mode. Currently, only synchronous invocation is supported. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none">• synchronize• asynchronous

Parameter	Mandatory	Type	Description
arguments	Yes	Object	<p>Input parameters for function execution. Constants can be referenced.</p> <p>Format: parameter path constant value/path</p> <p>The parameter path is the JSONPath (for example, \$.a.b[0].c) of an input parameter.</p> <p>The constant value can be a number, string (enclosed in single quotation marks), or Boolean.</p> <p>The constant path is the JSONPath of a constant. It must be represented with \$CONST for a root node. For example, \$CONST.a.b.</p>

Table 6-689 OnError

Parameter	Mandatory	Type	Description
error	No	String	<p>Error matching expression, which is used to filter exceptions.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>
transition	No	String	<p>ID of the next node.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>
retry_ref	No	String	<p>Retry policy name.</p> <p>Minimum: 0</p> <p>Maximum: 256</p>

Table 6-690 StateDataFilter

Parameter	Mandatory	Type	Description
input	No	String	Input filter expression (JSONPath). Minimum: 0 Maximum: 256
output	No	String	Output filter expression (JSONPath). Minimum: 0 Maximum: 256

Table 6-691 Retry

Parameter	Mandatory	Type	Description
name	Yes	String	Retry policy name, which must be unique in a flow. Minimum: 1 Maximum: 256
delay	No	Long	Retry interval, in seconds. Default value: 1. Minimum: 1 Maximum: 30
max_attempts	No	Long	Maximum number of retry attempts. Default value: 3. Minimum: 1 Maximum: 8

Table 6-692 ExpressConfig

Parameter	Mandatory	Type	Description
log_level	No	String	<p>Execution log level, which is valid only when mode is set to EXPRESS.</p> <p>Options:</p> <ul style="list-style-type: none"> • ALL: Execution logs of all nodes will be recorded. • ERROR: Only execution logs of abnormal nodes will be recorded. NONE: No logs will be recorded. <p>To set this parameter to ALL or ERROR, enable LTS first.</p> <p>Minimum: 1 Maximum: 5</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • ERROR • NONE

Response Parameters

Status code: 200

Table 6-693 Response body parameters

Parameter	Type	Description
id	String	<p>Unique flow ID.</p> <p>Minimum: 1 Maximum: 64</p>
workflow_urn	String	<p>Flow URN.</p> <p>Format:urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version>Currently, package and version can only be set to default and latest, respectively.</p>
name	String	<p>Flow name.</p> <p>Minimum: 1 Maximum: 64</p>

Parameter	Type	Description
description	String	Flow description. Minimum: 0 Maximum: 512
created_time	String	Flow creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
updated_time	String	Flow modification time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow creator. Minimum: 0 Maximum: 64
enable_stream_response	Boolean	Whether to return stream data. Default: false

Status code: 400**Table 6-694** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-695 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Modify the metadata of function flow {workflow_id}.

```
PUT /v2/{project_id}/fgs/workflows/{workflow_id}
```

```
{
  "name": "workflow_test",
  "start": "test",
  "functions": [ {
    "name": "test",
    "operation": "urn:fss:{region}:c53626012ba84727b938ca8bf03108ef:test:latest"
  } ],
  "constants": { },
  "states": [ {
    "id": "test",
    "name": "test",
    "type": "Operation",
    "end": false,
    "transition": "end",
    "actions": [ {
      "function_ref": {
        "ref_name": "test",
        "arguments": {
          "execution_name": "$.test"
        }
      }
    }
  ]
}, {
  "id": "end",
  "name": "end",
  "type": "End",
  "end": true,
  "transition": "",
  "state_data_filter": {
    "input": "",
    "output": ""
  },
  "actions": [ ],
  "action_mode": ""
} ],
  "retries": [ {
    "name": "test"
  } ]
}
```

Example Responses

Status code: 200

Success

```
{
  "id" : "48aff955-ea10-4ffd-b426-190bc192dc14",
  "workflow_urn" : "urn:fss:cn-north-7:73d69ae0cfcf460190522d060f05ad:workflow:default:testflow:latest",
  "name" : "test-flow",
  "description" : "desc",
  "created_time" : "2021-01-01T00:00:00Z",
  "updated_time" : "2021-01-01T00:00:00Z",
  "created_by" : "admin"
}
```

Status Codes

Status Code	Description
200	Success
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.10 Querying Flow Metrics

Function

This API is used to query flow metrics.

URI

GET /v2/{project_id}/fgs/workflow-statistic

Table 6-696 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64

Table 6-697 Query Parameters

Parameter	Mandatory	Type	Description
period	No	String	Time period, in minutes.
start_time	No	String	Timestamp of the start time, precise to milliseconds.
end_time	No	String	Timestamp of the end time, precise to milliseconds.
metric_type	No	String	Metric type. If this parameter is left blank or invalid, all metrics are queried. Options: totalCount (number of invocations), errorCount (number of errors), averageDuration (average duration), running (ongoing executions), and rejectCount (number of throttles).

Request Parameters

None

Response Parameters

Status code: 200

Table 6-698 Response body parameters

Parameter	Type	Description
count	Array of SlaReportsValue objects	Number of executions.
duration	Array of SlaReportsValue objects	Average latency, in milliseconds.
fail_count	Array of SlaReportsValue objects	Number of errors.
running_count	Array of SlaReportsValue objects	Number of running flows.

Table 6-699 SlaReportsValue

Parameter	Type	Description
timestamp	Long	Timestamp.
value	Double	Value.

Status code: 400**Table 6-700** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500**Table 6-701** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query function flow metrics.

```
GET /v2/{projectId}/fgs/workflow-statistic
```

Example Responses

Status code: 200

Function flow statistics.

```
{
  "count": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "duration": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "fail_count": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "running_count": [ {
    "timestamp": 0,
    "value": 0
  } ]
}
```

Status Codes

Status Code	Description
200	Function flow statistics.
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.11 Querying Metrics of a Flow

Function

This API is used to query the metrics of a flow.

URI

```
GET /v2/{project_id}/fgs/workflow-statistic/{workflow_urn}
```

Table 6-702 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_urn	Yes	String	Flow URN. Format:urn:fs:<region_id>:<project_id>.workflow:<package>:<workflow_name>:<version> Currently, package and version can only be set to default and latest, respectively. Minimum: 1 Maximum: 128

Table 6-703 Query Parameters

Parameter	Mandatory	Type	Description
period	No	String	Time period, in minutes.
start_time	No	String	Timestamp of the start time, precise to milliseconds.
end_time	No	String	Timestamp of the end time, precise to milliseconds.

Request Parameters

None

Response Parameters

Status code: **200**

Table 6-704 Response body parameters

Parameter	Type	Description
count	Array of SlaReportsValue objects	Number of executions.
duration	Array of SlaReportsValue objects	Average latency, in milliseconds.

Parameter	Type	Description
fail_count	Array of SlaReportsValue objects	Number of errors.
running_count	Array of SlaReportsValue objects	Number of running flows.

Table 6-705 SlaReportsValue

Parameter	Type	Description
timestamp	Long	Timestamp.
value	Double	Value.

Status code: 400

Table 6-706 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-707 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36

Parameter	Type	Description
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query the metrics of a function flow.

```
GET /v2/{project_id}/fgs/workflow-statistic/{workflow_urn}
```

Example Responses

Status code: 200

Function flow statistics.

```
{
  "count": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "duration": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "fail_count": [ {
    "timestamp": 0,
    "value": 0
  } ],
  "running_count": [ {
    "timestamp": 0,
    "value": 0
  } ]
}
```

Status Codes

Status Code	Description
200	Function flow statistics.
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.12 Re-executing a Flow

Function

This API is used to retry a standard flow.

URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}/retry

Table 6-708 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512
execution_id	Yes	String	Flow instance ID. Minimum: 1 Maximum: 64

Request Parameters

None

Response Parameters

Status code: 400

Table 6-709 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Parameter	Type	Description
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 404

Table 6-710 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500

Table 6-711 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Re-execute instance {execution_id} of a function.

```
POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}/retry
```

Example Responses

None

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.13 Stopping a Flow

Function

This API is used to stop a flow.

URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}/
terminate

Table 6-712 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512
execution_id	Yes	String	Flow instance ID. Minimum: 1 Maximum: 64

Request Parameters

None

Response Parameters

Status code: 400

Table 6-713 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 404

Table 6-714 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500

Table 6-715 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Stop executing instance {execution_id} of a function.

```
POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions/{execution_id}/terminate
```

Example Responses

None

Status Codes

Status Code	Description
200	OK
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.14 Querying Records of a Flow in Pagination Mode

Function

This API is used to query the records of a flow in pagination mode.

URI

GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions-history

Table 6-716 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow ID. Minimum: 1 Maximum: 512

Table 6-717 Query Parameters

Parameter	Mandatory	Type	Description
offset	Yes	Integer	Offset, which is the position where the query starts. The value must be greater than or equal to 0. Minimum: 0
limit	Yes	Integer	Number of data records that can be displayed on each page in pagination query. Options: 1 to 100. Minimum: 1 Maximum: 100
start_time	No	String	Start time in the format of YYYY-MM-DD hh:mm:ss (UTC time). If the start time is not specified, it is three days earlier than the end time.
end_time	No	String	End time in the format of YYYY-MM-DD hh:mm:ss (UTC time). If the end time is not specified, it is three days later than the start time. If neither of them is set, data of the last three days is queried by default.

Request Parameters

None

Response Parameters

Status code: 200

Table 6-718 Response body parameters

Parameter	Type	Description
executions	Array of FlowExecutionBrief objects	Flow execution information. Array Length: 0 - 999
total	Long	Total number of records.
size	Integer	Number of records on each page.

Table 6-719 FlowExecutionBrief

Parameter	Type	Description
workflow_id	String	Flow ID. Minimum: 1 Maximum: 64
workflow_urn	String	Flow URN. Format:urn:fss:<region_id>:<project_id>:workflow:<package>:<workflow_name>:<version>Currently, package and version can only be set to default and latest, respectively.
execution_id	String	Flow instance ID. Minimum: 1 Maximum: 64
status	String	Flow instance execution status. Minimum: 1 Maximum: 32 Enumeration values: <ul style="list-style-type: none"> • success • fail • running • timeout • cancel

Parameter	Type	Description
begin_time	String	Flow instance creation time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
end_time	String	Flow instance end time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
last_update_time	String	Flow instance last update time (UTC), in the format yyyy-MM-ddTHH:mm:ssZ. Minimum: 0 Maximum: 64
created_by	String	Flow instance creator. Minimum: 1 Maximum: 32

Status code: 400**Table 6-720** Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Status code: 500

Table 6-721 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512
request_id	String	Request ID. Minimum: 2 Maximum: 512

Example Requests

Query the instances of function flow {workflow_id} in pagination mode.

```
GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions-history
```

Example Responses

Status code: 200

Response to flow query.

```
{
  "executions" : [ {
    "workflow_id" : "c0aecc37-8b78-4fc5-81af-14af495dc053",
    "execution_id" : "41c25eec-a1ba-4789-9851-eead00cd6b9",
    "status" : "success",
    "begin_time" : "2022-10-11T06:30:45Z",
    "end_time" : "2022-10-11T06:30:47Z",
    "last_update_time" : "2022-10-11T06:30:45Z",
    "created_by" : "c0aecc37-8b78-4fc5-81af-14af495dc053",
    "workflow_urn" : "urn:fss:cn-
north-7:c53626012ba84727b938ca8bf03108ef:workflow:default:flow_nxy_tp:latest"
  }, {
    "workflow_id" : "c0aecc37-8b78-4fc5-81af-14af495dc053",
    "execution_id" : "74a29a25-2d6d-4b50-a02e-63b7c5b8ab93",
    "status" : "success",
    "begin_time" : "2022-10-11T06:30:24Z",
    "end_time" : "2022-10-11T06:30:26Z",
    "last_update_time" : "2022-10-11T06:30:25Z",
    "created_by" : "c0aecc37-8b78-4fc5-81af-14af495dc053",
    "workflow_urn" : "urn:fss:cn-
north-7:c53626012ba84727b938ca8bf03108ef:workflow:default:flow_nxy_tp:latest"
  } ],
  "total" : 100,
  "size" : 10
}
```

Status Codes

Status Code	Description
200	Response to flow query.
400	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.14.15 Calling Back a Flow

Function

This API is used to call back a flow.

URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/callback

Table 6-722 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID . Minimum: 1 Maximum: 64
workflow_id	Yes	String	Flow definition ID. Minimum: 1 Maximum: 512

Request Parameters

Table 6-723 Request header parameters

Parameter	Mandatory	Type	Description
X-Workflow-Run-Id	Yes	String	workflow run id
X-Workflow-State-Id	Yes	String	workflow state id

Table 6-724 Request body parameters

Parameter	Mandatory	Type	Description
result	Yes	String	Execution result. Minimum: 1 Maximum: 64 Enumeration values: <ul style="list-style-type: none">• success• fail
error	No	String	Error information. Minimum: 1 Maximum: 64
output	Yes	Object	Flow execution result in JSON format. This parameter has a value only when the status is success.

Response Parameters

Status code: 200

Table 6-725 Response body parameters

Parameter	Type	Description
execution_id	String	Error code. Minimum: 1 Maximum: 64

Status code: 400

Table 6-726 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36

Parameter	Type	Description
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 404

Table 6-727 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Status code: 500

Table 6-728 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: 1 Maximum: 36
error_msg	String	Error description. Minimum: 2 Maximum: 512

Example Requests

Call back a flow.

```
POST /v2/{project_id}/fgs/workflows/callback
```

Example Responses

Status code: 200

Success

```
{  
  "execution_id" : "48aff955-ea10-4ffd-b426-190bc192dc13"  
}
```

Status Codes

Status Code	Description
200	Success
400	Bad Request
404	Bad Request
500	Internal Server Error

Error Codes

See [Error Codes](#).

6.15 Asynchronous Execution Notification

6.15.1 Querying Asynchronous Execution Notification Settings of a Function Version

Function

This API is used to query the asynchronous invocation setting of a function version.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config

Table 6-729 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-730 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-731** Response body parameters

Parameter	Type	Description
func_urn	String	Function URN. Minimum: 1 Maximum: 269
max_async_event_age_in_seconds	Integer	Maximum validity period of a message. Value range: 1–86,400. Unit: second.
max_async_retry_attempts	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 3. Value range: 0–8.
destination_config	FuncAsyncDestinationConfig object	Asynchronous invocation target.
created_time	String	Time when asynchronous execution notification was configured.
last_modified	String	Time when the asynchronous execution notification settings were last modified.
enable_async_status_log	Boolean	Whether to enable asynchronous invocation status persistence.

Table 6-732 FuncAsyncDestinationConfig

Parameter	Type	Description
on_success	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.
on_failure	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-733 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph
param	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none">• OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire.• SMN: The topic_urn parameter is included.• DIS: The stream_name parameter is included.• FunctionGraph: The func_urn parameter is included.

Status code: 404

Table 6-734 Response body parameters

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

Example Requests

Query the asynchronous execution notification settings of a function version.

```
GET /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config
```

Example Responses

Status code: 200

Ok

```
{
  "func_urn" : "urn:fss:xxxxxxxx:7aad83af3e8d42e99ac194xxxxxxxx:function:default:test:latest",
  "max_async_event_age_in_seconds" : 60,
  "max_async_retry_attempts" : 1,
  "destination_config" : {
    "on_success" : {
      "destination" : "FunctionGraph",
      "param" : "{\\"func_urn\\":\\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxx:function:default:testPython:latest\\"}"
    },
    "on_failure" : {
      "destination" : "FunctionGraph",
      "param" : "{\\"func_urn\\":\\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxx:function:default:testPython:latest\\"}"
    }
  },
  "created_time" : "2021-03-04T14:50:02+08:00",
  "last_modified" : "2021-03-04 14:50:02"
}
```

Status Codes

Status Code	Description
200	Ok
404	Not Found

Error Codes

See [Error Codes](#).

6.15.2 Deleting Asynchronous Execution Notification Settings

Function

This API is used to delete the asynchronous execution notification settings of a function.

URI

DELETE /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config

Table 6-735 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-736 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 404

Table 6-737 Response body parameters

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

Example Requests

Delete the asynchronous execution notification settings of a function.

```
DELETE /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
404	Not Found

Error Codes

See [Error Codes](#).

6.15.3 Configuring Asynchronous Execution Notification

Function

This API is used to configure asynchronous execution notification for a function.

URI

```
PUT /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config
```

Table 6-738 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-739 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-740 Request body parameters

Parameter	Mandatory	Type	Description
max_async_event_age_in_seconds	No	Integer	Maximum validity period of a message. Value range: 1s to 86,400s. Default value: 3600s. Minimum: 1 Maximum: 86400
max_async_retry_attempts	No	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 1. Value range: 0–3. Minimum: 0 Maximum: 3
destination_config	No	FuncAsyncDestinationConfig object	Asynchronous invocation target.
enable_async_status_log	No	Boolean	Whether to enable asynchronous invocation status persistence.

Table 6-741 FuncAsyncDestinationConfig

Parameter	Mandatory	Type	Description
on_success	No	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.

Parameter	Mandatory	Type	Description
on_failure	No	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-742 FuncDestinationConfig

Parameter	Mandatory	Type	Description
destination	No	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph
param	No	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none">• OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire.• SMN: The topic_urn parameter is included.• DIS: The stream_name parameter is included.• FunctionGraph: The func_urn parameter is included.

Response Parameters

Status code: 200

Table 6-743 Response body parameters

Parameter	Type	Description
func_urn	String	Function URN. Minimum: 1 Maximum: 269
max_async_event_age_in_seconds	Integer	Maximum validity period of a message. Value range: 60–86,400. Unit: second.
max_async_retry_attempts	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 3. Value range: 0–8.
destination_config	FuncAsyncDestinationConfig object	Asynchronous invocation target.
created_time	String	Time when asynchronous execution notification was configured.
last_modified	String	Time when the asynchronous execution notification settings were last modified.
enable_async_status_log	Boolean	Whether to enable asynchronous invocation status persistence.

Table 6-744 FuncAsyncDestinationConfig

Parameter	Type	Description
on_success	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.
on_failure	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-745 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph
param	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none">• OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire.• SMN: The topic_urn parameter is included.• DIS: The stream_name parameter is included.• FunctionGraph: The func_urn parameter is included.

Status code: 400**Table 6-746** Response body parameters

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

Status code: 404**Table 6-747** Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Example Requests

Configure asynchronous execution notification for a function with max. validity period of 10s and max. retries of 3, and enable asynchronous invocation status persistence.

```
PUT /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-config
```

```
{
  "max_async_event_age_in_seconds" : 10,
  "max_async_retry_attempts" : 3,
  "enable_async_status_log" : true
}
```

Example Responses

Status code: 200

Ok

```
{
  "func_urn" : "urn:fss:xxxxxxx:7aad83af3e8d42e99ac194xxxxxxx:function:default:test:latest",
  "max_async_event_age_in_seconds" : 60,
  "max_async_retry_attempts" : 1,
  "destination_config" : {
    "on_success" : {
      "destination" : "FunctionGraph",
      "param" : "{\"func_urn\":\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxx:function:default:testPython:latest\"}"
    },
    "on_failure" : {
      "destination" : "FunctionGraph",
      "param" : "{\"func_urn\":\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxx:function:default:testPython:latest\"}"
    }
  },
  "created_time" : "2021-03-04T14:50:02+08:00",
  "last_modified" : "2021-03-04 14:50:02"
}
```

Status Codes

Status Code	Description
200	Ok
400	Bad Request
404	Not Found

Error Codes

See [Error Codes](#).

6.15.4 Querying Asynchronous Execution Notification Settings of a Function's All Versions

Function

This API is used to query the asynchronous execution notification settings of a function's all versions.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-configs

Table 6-748 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-749 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time. Maximum: 64
limit	No	String	Number of items displayed on each page. <ul style="list-style-type: none">If this parameter is not specified or is set to 0, the default value 10 is used. The maximum value is 100. If you set this parameter to a value greater than 100, the value automatically changes to 100.If it is less than 0, an error is reported. Default: 10

Request Parameters

Table 6-750 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-751** Response body parameters

Parameter	Type	Description
async_invoke_configs	Array of ListFunctionAsyncInvokeConfigResult objects	Asynchronous execution notification settings.
count	Long	Total number of items. Minimum: 0
page_info	PageInfo object	

Table 6-752 ListFunctionAsyncInvokeConfigResult

Parameter	Type	Description
func_urn	String	Function URN. Minimum: 1 Maximum: 269
max_async_event_age_in_seconds	Integer	Maximum validity period of a message. Value range: 60–86,400. Unit: second.

Parameter	Type	Description
max_async_retry_attempts	Integer	Maximum number of retry attempts to be made if asynchronous invocation fails. Default value: 3. Value range: 0–8.
destination_config	FuncAsyncDestinationConfig object	Asynchronous invocation target.
created_time	String	Time when asynchronous execution notification was configured.
last_modified	String	Time when the asynchronous execution notification settings were last modified.
enable_async_status_log	Boolean	Whether to enable asynchronous invocation status persistence.

Table 6-753 FuncAsyncDestinationConfig

Parameter	Type	Description
on_success	FuncDestinationConfig object	Target to be invoked when a function is successfully executed.
on_failure	FuncDestinationConfig object	Target to be invoked when a function fails to be executed due to a system error or an internal error.

Table 6-754 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph Enumeration values: <ul style="list-style-type: none">• OBS• SMN• DIS• FunctionGraph

Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. <ul style="list-style-type: none"> • OBS: Parameters related to the bucket name, object directory prefix, and object expiration time are included. The object expiration time ranges from 0 to 365 days. If the value is 0, the object will not expire. • SMN: The topic_urn parameter is included. • DIS: The stream_name parameter is included. • FunctionGraph: The func_urn parameter is included.

Table 6-755 PageInfo

Parameter	Type	Description
next_marker	Long	Next read location.
previous_mar ker	Long	Previous read location.
current_count	Long	Number of items on the current page.

Example Requests

Query the asynchronous execution notification settings of a function's all versions.

```
GET /v2/{project_id}/fgs/functions/{function_urn}/async-invoke-configs
```

Example Responses

Status code: 200

Ok

```
{
  "async_invoke_configs": [ {
    "func_urn": "urn:fss:{region}:5691ba790e2b46ceb38316xxxxxxxx:function:default:test_async:latest",
    "max_async_event_age_in_seconds": 60,
    "max_async_retry_attempts": 1,
    "destination_config": {
      "on_success": {
        "destination": "FunctionGraph",
        "param": "{\\"func_urn\\":\\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxx:function:default:testPython:latest\\"}"
      },
      "on_failure": {
        "destination": "FunctionGraph",
        "param": "{\\"func_urn\\":\\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxx:function:default:testPython:latest\\"}"
      }
    }
  } ]
}
```

```
    },
    "created_time" : "2021-03-04T14:50:02+08:00",
    "last_modified" : "2021-03-04 14:50:02"
  }],
  "count" : 2,
  "page_info" : {
    "next_marker" : 2,
    "previous_marker" : 0,
    "current_count" : 2
  }
}
```

Status Codes

Status Code	Description
200	Ok

Error Codes

See [Error Codes](#).

6.15.5 Querying Asynchronous Invocation Requests

Function

This API is used to query the asynchronous invocation requests of a function.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/async-invocations

Table 6-756 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-757 Query Parameters

Parameter	Mandatory	Type	Description
request_id	No	String	ID of the asynchronous invocation request to be queried. If this parameter is not specified, all asynchronous invocation requests are queried by default. Minimum: 0 Maximum: 64
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 0 Maximum: 64
limit	No	String	Maximum number of data records returned in a request. Max.: 500. Default: 100. Default: 100 Minimum: 0 Maximum: 64
status	No	String	Asynchronous invocation status to be queried. Five statuses are supported. If this parameter is not specified, the invocation records of all statuses are queried. <ul style="list-style-type: none">• WAIT• RUNNING• SUCCESS• FAIL• DISCARD Minimum: 0 Maximum: 64
query_begin_time	No	String	Start time of the query. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time). If this parameter is not specified, the time starts from the last hour by default.

Parameter	Mandatory	Type	Description
query_end_time	No	String	End time of the query. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time). If this parameter is not specified, the end time is the current time by default.

Request Parameters

Table 6-758 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-759 Response body parameters

Parameter	Type	Description
invocations	Array of ListFunctionAsyncInvocationsResult objects	Asynchronous invocation records.
count	Integer	Total number of queried data records.
next_marker	Integer	Start position for querying records on the next page.

Table 6-760 ListFunctionAsyncInvocationsResult

Parameter	Type	Description
request_id	String	Asynchronous invocation request ID.

Parameter	Type	Description
status	String	Asynchronous invocation status. Options: <ul style="list-style-type: none"> • WAIT • RUNNING • SUCCESS • FAIL • DISCARD Enumeration values: <ul style="list-style-type: none"> • WAIT • RUNNING • SUCCESS • FAIL • DISCARD
error_message	String	Asynchronous invocation error information. If the execution is successful, no value is returned.
error_code	Integer	Asynchronous invocation error code. If the execution is successful, 0 is returned.
start_time	String	Start time of the asynchronous invocation. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time).
end_time	String	End time of the asynchronous invocation. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time).

Status code: 403

Table 6-761 Response body parameters

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

Status code: 404

Table 6-762 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 500

Table 6-763 Response body parameters

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

Example Requests

Query asynchronous invocation requests of a function.

```
GET /v2/{project_id}/fgs/functions/{function_urn}/async-invocations
```

Example Responses

Status code: 200

OK

```
{
  "invocations": [ {
    "request_id": "403fcbd6-ec41-401f-9fa7-386f3d3d****",
    "status": "SUCCESS",
    "error_message": "",
    "start_time": "2019-10-25T15:37:27",
    "end_time": "2019-10-25T15:37:27",
    "error_code": 0
  } ]
}
```

Status code: 403

FORBIDDEN

```
{
  "error_code": "FSS.0403",
  "error_msg": "invalid token"
}
```

Status code: 404

Not Found

```
{
  "error_code": "FSS.0404",
  "error_msg": "can not find function"
}
```

Status code: 500

Internal error.


```
{
  "error_code" : "FSS.0500",
  "error_msg" : "xxx"
}
```

Status Codes

Status Code	Description
200	OK
403	FORBIDDEN
404	Not Found
500	Internal error.

Error Codes

See [Error Codes](#).

6.15.6 Querying Active Asynchronous Invocation Requests

Function

This API is used to query active asynchronous invocation requests.

URI

GET /v2/{project_id}/fgs/functions/{function_urn}/active-async-invocations

Table 6-764 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Table 6-765 Query Parameters

Parameter	Mandatory	Type	Description
requests	No	String	Asynchronous request ID. Separate multiple IDs with commas (,). Max. 10 request IDs. If this parameter is not specified, all asynchronous invocation requests are queried by default. Minimum: 0 Maximum: 640
marker	No	String	Start position of the current query. The default value is 0. Default: 0 Minimum: 0 Maximum: 64
limit	No	String	Maximum number of data records returned in a request. Max.: 500. Default: 100. Default: 100 Minimum: 0 Maximum: 64
status	No	String	Status of asynchronous invocation records to query. If this parameter is not specified, the invocation records of all statuses are queried. Options: WAIT RUNNING SUCCESS FAIL DISCARD Minimum: 0 Maximum: 64
query_begin_time	No	String	Start time of the query. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time). If this parameter is not specified, the time starts from the last hour by default.
query_end_time	No	String	End time of the query. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time). If this parameter is not specified, the end time is the current time by default.

Request Parameters

Table 6-766 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200**Table 6-767** Response body parameters

Parameter	Type	Description
invocations	Array of ListFunctionAsyncInvocationsResult objects	Asynchronous invocation records.
count	Integer	Total number of queried data records.
next_marker	Integer	Start position for querying records on the next page.

Table 6-768 ListFunctionAsyncInvocationsResult

Parameter	Type	Description
request_id	String	Asynchronous invocation request ID.

Parameter	Type	Description
status	String	Asynchronous invocation status. Options: <ul style="list-style-type: none"> • WAIT • RUNNING • SUCCESS • FAIL • DISCARD Enumeration values: <ul style="list-style-type: none"> • WAIT • RUNNING • SUCCESS • FAIL • DISCARD
error_message	String	Asynchronous invocation error information. If the execution is successful, no value is returned.
error_code	Integer	Asynchronous invocation error code. If the execution is successful, 0 is returned.
start_time	String	Start time of the asynchronous invocation. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time).
end_time	String	End time of the asynchronous invocation. The format is "YYYY-MM-DD'T'HH:mm:ss" (UTC time).

Status code: 403

Table 6-769 Response body parameters

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

Status code: 404

Table 6-770 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.

Status code: 500

Table 6-771 Response body parameters

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

Example Requests

Query active asynchronous invocation requests of a function.

```
GET /v2/{project_id}/fgs/functions/{function_urn}/active-async-invocations
```

Example Responses

Status code: 200

OK

```
{
  "invocations": [ {
    "request_id": "403fcbd6-ec41-401f-9fa7-386f3d3d****",
    "status": "SUCCESS",
    "error_message": "",
    "start_time": "2019-10-25T15:37:27",
    "end_time": "2019-10-25T15:37:27",
    "error_code": 0
  } ],
  "next_marker": 1,
  "count": 10
}
```

Status code: 403

FORBIDDEN

```
{
  "error_code": "FSS.0403",
  "error_msg": "invalid token"
}
```

Status code: 404

Not Found

```
{
  "error_code": "FSS.0404",
  "error_msg": "can not find function"
}
```

Status code: 500

Internal error

```
{
  "error_code" : "FSS.0500",
  "error_msg" : "xxx"
}
```

Status Codes

Status Code	Description
200	OK
403	FORBIDDEN
404	Not Found
500	Internal error

Error Codes

See [Error Codes](#).

6.15.7 Stopping an Asynchronous Invocation Request

Function

This API is used to stop asynchronous invocation of a function with N concurrent instances. When calling this API, set recursive to false and force to true. The API will also stop the function's other concurrent requests and return "4208 function invocation canceled".

URI

POST /v2/{project_id}/fgs/functions/{function_urn}/cancel

Table 6-772 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see Obtaining a Project ID .
function_urn	Yes	String	Function URN. For details, see the function model description.

Request Parameters

Table 6-773 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It can be obtained by calling the IAM API used to obtain a user token. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type (format).

Table 6-774 Request body parameters

Parameter	Mandatory	Type	Description
request_id	Yes	String	ID of a stopped request.
type	No	String	Stop mode. Options: recursive and force. recursive: The subfunction that is being invoked will be stopped. force: Terminate the runtime directly. Enumeration values: <ul style="list-style-type: none">• force• recursive

Response Parameters

Status code: 400

Table 6-775 Response body parameters

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

Status code: 403

Table 6-776 Response body parameters

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

Status code: 404**Table 6-777** Response body parameters

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

Status code: 500**Table 6-778** Response body parameters

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

Example Requests

Stop an asynchronous invocation request of a function.

```
POST /v2/{project_id}/fgs/functions/{function_urn}/cancel
{
  "request_id" : "xxxx"
}
```

Example Responses

Status code: 200

OK

```
null
```

Status code: 400

Invalid RequestId

```
{
  "error_code" : "FSS.0400",
  "error_msg" : "Invalid RequestId"
}
```


Status code: 403

FORBIDDEN

```
{
  "error_code" : "FSS.0403",
  "error_msg" : "invalid token"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "FSS.0404",
  "error_msg" : "can not find function"
}
```

Status code: 500

Internal error.

```
{
  "error_code" : "FSS.0500",
  "error_msg" : "xxx"
}
```

Status Codes

Status Code	Description
200	OK
400	Invalid RequestId
403	FORBIDDEN
404	Not Found
500	Internal error.

Error CodesSee [Error Codes](#).

7 Permissions Policies and Supported Actions

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

By default, new IAM users do not have any permissions assigned. You need to add a user to one or more groups, and assign permissions policies to these groups. The user then inherits permissions from the groups it is a member of. This process is called authorization. After authorization, the user can perform specified operations on FunctionGraph based on the permissions.

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

NOTE

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

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

Supported Actions

There are two kinds of policies: system-defined policies and custom policies. If the permissions preset in the system do not meet your requirements, you can create custom policies and apply these policies to user groups for refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: Defined by actions in a custom policy.

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

 **NOTE**

The check mark (√) and cross symbol (x) respectively indicate that an action takes effect or does not take effect for the corresponding type of projects.

Table 7-1 lists the API actions supported by FunctionGraph.

Table 7-1 FunctionGraph actions

Permission	API	Action	IAM Project	Enterprise Project
Querying a function list	GET /v2/{project_id}/fgs/functions	FunctionGraph:function:list	√	√
Querying the metadata of a function	GET /v2/{project_id}/fgs/functions/{function_urn}/config	FunctionGraph:function:getConfig	√	√
Querying the code of a function	GET /v2/{project_id}/fgs/functions/{function_urn}/code	FunctionGraph:function:getCode	√	√
Creating a function	POST /v2/{project_id}/fgs/functions	FunctionGraph:function:create	√	√
Deleting a function or function version	DELETE /v2/{project_id}/fgs/functions/{function_urn}	FunctionGraph:function:delete	√	√
Modifying the code of a function	PUT /v2/{project_id}/fgs/functions/{function_urn}/code	FunctionGraph:function:updateCode	√	√

Permission	API	Action	IAM Project	Enterprise Project
Modifying the metadata of a function	PUT /v2/{project_id}/fgs/functions/{function_urn}/config	FunctionGraph:function:updateConfig	√	√
Publishing a function version	POST /v2/{project_id}/fgs/functions/{function_urn}/versions	FunctionGraph:function:createVersion	√	√
Querying the versions of a function	GET /v2/{project_id}/fgs/functions/{function_urn}/versions	FunctionGraph:function:listVersion	√	√
Creating an alias for a function version	POST /v2/{project_id}/fgs/functions/{function_urn}/aliases	FunctionGraph:function:createAlias	√	√
Modifying the alias information about a function version	PUT /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}	FunctionGraph:function:updateAlias	√	√
Deleting an alias of a function version	DELETE /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}	FunctionGraph:function:deleteAlias	√	√
Querying the alias information about a function version	GET /v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}	FunctionGraph:function:getAlias	√	√
Querying all version aliases of a function	GET /v2/{project_id}/fgs/functions/{function_urn}/aliases	FunctionGraph:function:listAlias	√	√

Permission	API	Action	IAM Project	Enterprise Project
Querying all triggers of a function	GET /v2/{project_id}/fgs/triggers/{function_urn}	FunctionGraph:trigger:listSpecifiedFunctionTriggers	√	√
Querying the information about a trigger	GET /v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}	FunctionGraph:trigger:get	√	√
Deleting all triggers of a function	DELETE /v2/{project_id}/fgs/triggers/{function_urn}	FunctionGraph:trigger:deleteSpecifiedFunctionTriggers	√	√
Creating a trigger	POST /v2/{project_id}/fgs/triggers/{function_urn}	FunctionGraph:trigger:create	√	√
Deleting a trigger	DELETE /v2/{project_id}/fgs/triggers/{function_urn}/{trigger_type_code}/{trigger_id}	FunctionGraph:trigger:delete	√	√
Implementing synchronous function invocation	POST /v2/{project_id}/fgs/functions/{function_urn}/invocations	FunctionGraph:function:invoke	√	√
Implementing asynchronous function invocation	POST /v2/{project_id}/fgs/functions/{function_urn}/invocations-async	FunctionGraph:function:invokeAsync	√	√

8 Appendix

8.1 Status Codes

[Table 8-1](#) describes the status codes.

Table 8-1 Status codes

Status Code	Message	Description
200	-	The request has succeeded.
204	-	The request has succeeded.
400	Bad Request	The server failed to process the request.
401	Unauthorized	The request requires user authentication.
403	Forbidden	The server understood the request, but is refusing to fulfill it.
404	Not Found	The server has not found anything matching the request URI.
405	Method Not Allowed	The method specified in the request line is not allowed for the resource identified by the request URI.

Status Code	Message	Description
406	Not Acceptable	The resource identified by the request is only capable of generating response entities which have content characteristics not acceptable according to the accept headers sent in the request.
407	Proxy Authentication Required	The client must first authenticate itself with the proxy.
408	Request Timeout	The client did not produce a request within the time that the server was prepared to wait.
409	Conflict	The request could not be completed due to a conflict with the current state of the resource.
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 server is currently unable to handle the request due to a temporary overloading or maintenance of the server.
504	Gateway Timeout	Gateway timed out.

8.2 Error Codes

Status Code	Error Code	Error Message	Description	Solution
400	FSS.0400	Invalid parameter.	Invalid request parameters.	Check the request body parameters.
400	FSS.1001	Invalid query parameter.	Invalid query parameter.	Check the query parameters.
400	FSS.1002	Invalid function name.	Invalid function name.	Check the function name.
400	FSS.1003	Invalid function handler.	Invalid handler.	Check the function handler.
400	FSS.1004	Invalid Package (function app).	Invalid function package.	Check the function package.
400	FSS.1005	Invalid runtime.	Invalid runtime.	Check the runtime.
400	FSS.1006	Invalid function code entry mode.	Invalid code type.	Check the code type.
400	FSS.1007	Invalid function memory.	Invalid memory.	Check the function memory.
400	FSS.1008	Invalid function timeout.	Invalid timeout.	Check the function timeout.
400	FSS.1009	Invalid function UserData.	Invalid environment variables.	Check the function environment variables.
400	FSS.1010	Invalid URL.	Invalid URL.	Check the URL.
400	FSS.1011	Invalid function code.	Invalid function code.	Check the function code.
400	FSS.1012	The function code must be configured.	The function code cannot be left blank.	Check the function code.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1013	Invalid file type.	Invalid file type.	Check the file type.
400	FSS.1014	Invalid function alias.	Invalid alias.	Check the function alias.
400	FSS.1015	Invalid function version.	Invalid version.	Check the function version.
400	FSS.1016	The function cannot be published because no changes have been made since last publication.	Publishing failed due to no changes to the previous version.	Check whether the function has changed compared with the previous version.
400	FSS.1017	The number of environment variables exceeds the maximum allowed limit (20).	The number of environment variables exceeds 20.	Check the number of environment variables.
400	FSS.1018	The total size of environment variables exceeds the maximum allowed limit (2 KB).	The total size of environment variables exceeds 2 KB.	Check the total size of the environment variables.
400	FSS.1019	The description exceeds the maximum allowed limit (512 characters).	The description contains more than 512 characters.	Check the description length.
400	FSS.1020	Failed to validate XRole.	Invalid agency.	Check the xrole parameter of the request body.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1021	invalid service link agency.	Failed to create the service-linked agency.	Check the permissions of the service-linked agency.
400	FSS.1022	Only one YAML file is allowed.	Only one YAML file is allowed.	Check whether there is only one YAML file.
400	FSS.1023	The imported file is too large.	The imported file exceeds the maximum allowed limit.	Check the size of the file.
400	FSS.1024	Invalid dependency.	Invalid dependency.	Check the dependency.
400	FSS.1025	Invalid YAML file.	Invalid YAML file.	Check the YAML file.
400	FSS.1026	Invalid Concurrency.	Invalid concurrency policy.	Check the concurrency policy.
400	FSS.1027	Invalid packageName (app name).	Invalid package or app name.	Check the package and app names.
400	FSS.1028	The app cannot be deleted because it contains functions.	The app cannot be deleted because it contains functions.	Check whether the app contains functions before deleting it.
400	FSS.1029	The default app cannot be deleted.	The default app cannot be deleted.	The default app cannot be deleted.
400	FSS.1031	The dependency already exists.	The dependency already exists.	Check whether the dependency exists.
400	FSS.1032	Invalid dependency type.	Invalid dependency type. Currently, only local ZIP packages or packages from OBS can be uploaded.	Check the dependency type.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1034	Invalid image URL.	Invalid image URL.	Check the image URL.
400	FSS.1035	The image does not exist.	The image does not exist.	Check whether the image exists.
400	FSS.1036	The VPC does not exist.	The VPC does not exist.	Check whether the VPC exists.
400	FSS.1037	No subnet matches the specified ID.	No matched subnets found.	Check whether the subnet exists.
400	FSS.1038	The file system configuration already exists in the function.	The file system configuration already exists in the function.	Check whether the file system configuration already exists.
400	FSS.1039	The mounting path is invalid.	Invalid mounting path.	Check the mounting path.
400	FSS.1058	The app name and function name cannot be the same in the YAML file.	The combination of the app name and function name cannot be the same in the YAML file.	Check whether both the app and function names exist in the YAML file.
400	FSS.1074	The event field is invalid.	Invalid event field.	Check the event parameters.
400	FSS.1075	The value of UserId or GroupId must be a non-zero integer from -1 to 65534.	The user ID and user group ID must be an integer from -1 to 65,534, excluding 0, 1000, and 1002.	Check the user ID and group ID.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1076	The number of reserved instances exceeds the maximum allowed limit.	The number of reserved instances exceeds the maximum allowed limit.	Check the number of reserved instances.
400	FSS.1077	The code and configuration of the function cannot be updated because the function has at least one reserved instance.	The code and configurations of the function cannot be updated because the function has at least one reserved instance.	Check whether the function contains reserved instances.
400	FSS.1081	Invalid function async invoke config.	Invalid asynchronous notification parameters.	Check the asynchronous notification parameters.
400	FSS.1091	The additional version is invalid.	Invalid additional version.	Check the additional version.
400	FSS.1092	The weight of the additional version is invalid.	The weight of the additional version is invalid.	Check the weight of the additional version.
400	FSS.1093	The major version and the additional version cannot be the same.	The major version and the additional version cannot be the same.	Check the major and additional versions.
400	FSS.1101	Invalid trigger type.	Invalid trigger type.	Check the trigger type.
400	FSS.1102	Invalid SMN trigger parameters.	Invalid SMN trigger parameters.	Check the SMN trigger parameters.
400	FSS.1103	Invalid DMS trigger parameters.	Invalid DMS trigger parameters.	Check the DMS trigger parameters.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1104	Invalid DIS trigger parameters.	Invalid DIS trigger parameters.	Check the DIS trigger parameters.
400	FSS.1106	Invalid OBS trigger parameters.	Invalid OBS trigger parameters.	Check the OBS trigger parameters.
400	FSS.1107	Invalid APIG trigger parameters.	Invalid APIG trigger parameters.	Check the APIG trigger parameters.
400	FSS.1109	Invalid timer trigger parameters.	Invalid timer trigger parameters.	Check the timer trigger parameters.
400	FSS.1110	Invalid LTS trigger parameters.	Invalid LTS trigger parameters.	Check the LTS trigger parameters.
400	FSS.1112	The Kafka trigger parameters are invalid.	Invalid Kafka trigger parameter.	Check the Kafka trigger parameters.
400	FSS.1113	The username and password must be specified because Kafka SASL_SSL is enabled.	The username and password must be specified because Kafka SASL_SSL is enabled.	If SASL_SSL has been enabled, enter a username and password.
400	FSS.1114	The subnet of the function must be the same as that of the Kafka instance.	The subnet of the function is different from that of the Kafka instance.	Check whether the subnet of the function is different from that of the Kafka instance.
400	FSS.1116	Kafka instance configuration error. Please check the username and password.	Kafka instance configuration error.	Check the username and password of the Kafka instance.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1117	Failed to query messages from the Kafka instance.	Failed to query messages from the Kafka instance.	Check whether the Kafka instance is normal.
400	FSS.1164	Invalid DDS trigger parameters.	Invalid DDS trigger parameters.	Check the DDS trigger parameters.
400	FSS.1172	The database instance does not exist.	The DB instance cannot be found.	Check the DB instance.
400	FSS.1173	DDS DB instance configuration error. Please contact DDS R&D personnel.	DDS DB instance configuration error. Contact DDS R&D personnel.	Contact DDS technical support.
400	FSS.1204	Failed to get response from functionAccesssor.	Failed to obtain the function's return value.	Contact technical support.
400	FSS.1221	Lts log has been enabled.	LTS has already been enabled.	Check whether LTS has already been enabled.
400	FSS.1301	The CTS trigger does not exist.	The CTS trigger does not exist.	Check whether the CTS trigger exists.
400	FSS.1303	Access denied due to insufficient permissions.	Failed to verify permission. Access denied.	Check whether you have been authorized.
400	FSS.1304	The CTS service failed to process the request.	The server failed to process the request.	Contact CTS technical support.
400	FSS.1305	Invalid CTS trigger parameters.	Invalid CTS trigger parameter.	Check the CTS trigger parameters.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1306	The number of triggers exceeds the maximum allowed limit.	Trigger threshold reached.	Check whether the max. number of triggers has been reached.
400	FSS.1307	The trigger name already exists.	The trigger name already exists.	Check whether the trigger name already exists.
400	FSS.1308	The operation resource does not exist.	The resource does not exist.	Check whether the resource exists.
400	FSS.1309	Invalid function URN.	Invalid function URN.	Check the function URN.
400	FSS.1310	Unauthorized user.	Failed to obtain the user token.	Check permissions.
400	FSS.1311	Unauthorized access.	CTS has not been enabled.	Check whether CTS has been enabled.
400	FSS.1312	The notification name must be specified.	No key notification name specified.	Check the key notification name.
400	FSS.1313	The number of resources to be operated has reached the maximum allowed limit (100).	The number of operation resources exceeds 100.	Check whether the max. number of resources has been reached.
400	FSS.1314	The operation resource must be specified.	No operation resource specified.	Check whether the resource is empty.
400	FSS.1316	The resource operation has already been selected.	Operation already selected.	Check whether the same operation has already been selected.
400	FSS.1317	The trigger name is too long.	Trigger name is too long.	Check the length of the trigger name.

Status Code	Error Code	Error Message	Description	Solution
400	FSS.1318	Invalid trigger operation.	Invalid trigger operation.	Check the trigger operation.
400	FSS.1404	Invalid function initializer.	Invalid function initializer.	Check the function initializer.
400	FSS.1405	Invalid initialization timeout.	Invalid initialization timeout.	Check the function initialization timeout.
400	FSS.1406	Invalid heartbeat handler.	Invalid function heartbeat detection entry.	Check the heartbeat detection entry of the function.
400	FSS.1407	Invalid restore hook handler.	Invalid Restore Hook handler.	Check the Restore Hook configuration.
400	FSS.1426	This release[{{version}}] has reserved instances configured.	Reserved policies already exist in the version corresponding to the target alias.	Check whether auto scaling policies exist in the version corresponding to the target alias.
400	FSS.1441	The dependency has versions, can not update or delete.	The dependency already has a version and cannot be updated or deleted.	Check whether the dependency has a version.
400	FSS.1601	Invalid swr image param.	Invalid SWR image parameter.	Check SWR image parameters.
401	FSS.0401	Unauthorized access.	Access denied.	Check permissions.
401	FSS.1118	Access denied.	Access denied. The user is not in the whitelist.	Check the whitelist configuration.
403	FSS.0403	Forbidden.	Unauthorized operation.	Check permissions.

Status Code	Error Code	Error Message	Description	Solution
403	FSS.1040	The selected Xrole does not have permissions to mount the resources.	The selected agency does not have permissions to mount the resources.	Check the agency permissions.
403	FSS.1041	The number of functions exceeds the maximum allowed limit (400).	The number of functions exceeds 400.	Check whether the max. number of functions has been reached.
403	FSS.1042	The total code size of functions exceeds the maximum allowed limit (20 GB).	The total size of functions exceeds 20 GB.	Check whether the total size of functions reaches 20 GB.
403	FSS.1043	The number of aliases exceeds the maximum allowed limit.	The number of aliases exceeds the maximum allowed limit.	Check whether the max. number of aliases has been reached.
403	FSS.1044	The number of apps exceeds the maximum allowed limit (400).	The number of apps exceeds 400.	Check whether the number of apps reaches 400.
403	FSS.1045	The number of dependencies exceeds the maximum allowed limit.	The number of dependencies exceeds the maximum allowed limit.	Check whether the max. number of dependencies has been reached.
403	FSS.1046	The dependency is inaccessible.	The dependency is unavailable.	Check whether the dependency is available.
403	FSS.1047	The number of bound VPCs exceeds the maximum limit allowed for a tenant.	The number of bound VPCs exceeds the maximum limit allowed for a tenant.	Check whether the max. number of VPCs that can be bound has been reached.

Status Code	Error Code	Error Message	Description	Solution
403	FSS.1048	The number of bound VPCs exceeds the maximum limit allowed for a project.	The number of bound VPCs exceeds the maximum limit allowed for a project.	Check whether the max. number of VPCs that can be bound to a single project has been reached.
403	FSS.1049	The number of file systems mounted to the function exceeds the maximum allowed limit (5).	The number of file systems mounted to the function exceeds 5.	Check whether the number of file systems mounted to the function reaches 5.
403	FSS.1068	The number of events configured for the function exceeds the maximum allowed limit.	The number of events configured for the function exceeds the maximum allowed limit.	Check whether the max. number of events per function has been reached.
403	FSS.1069	The size of EventData exceeds 4 KB.	The event size exceeds 4 KB.	Check whether the code size reaches 4 KB.
403	FSS.1073	The function event already exists.	The function event already exists.	Check whether the event already exists in the function.
403	FSS.1094	The version cannot be deleted when it is used as the additional version of an alias.	The version cannot be deleted because it has been used as the additional version of an alias.	Check whether the additional version is currently in use.
403	FSS.1096	The file sharing protocol of the mounted resource is not NFS.	The file sharing protocol of the mounted resource is not NFS.	Check whether the file sharing protocol of the mounted resource is NFS.

Status Code	Error Code	Error Message	Description	Solution
403	FSS.1108	The bucket configuration of the current trigger conflicts with that of an existing OBS trigger.	The bucket configuration of the current trigger conflicts with that of an existing OBS trigger.	Check whether the bucket configuration of the current trigger conflicts with that of an existing OBS trigger.
403	FSS.1121	Forbidden	Access denied due to the lack of a DMS agency.	Check whether a DMS agency has been configured.
403	FSS.1122	Forbidden	Access denied due to the lack of a DIS agency.	Check whether a DIS agency has been configured.
403	FSS.1123	The number of pull triggers exceeds the maximum allowed limit (10).	The number of pull-mode triggers has reached 10.	Check whether the number of pull-mode triggers has reached 10.
403	FSS.1124	The number of APIs exceeds the maximum allowed limit.	The number of APIs exceeds the maximum allowed limit.	Check whether the max. number of APIs has been reached.
403	FSS.1125	Forbidden	Unauthorized access.	Check whether an LTS agency has been configured.
403	FSS.1126	You do not have permissions to call the API.	You do not have permissions to call the API.	Check whether you have permission to call the API.
403	FSS.1127	The EPS user does not have permissions to call the API.	The EPS user does not have permissions to call the API.	Check permissions.

Status Code	Error Code	Error Message	Description	Solution
403	FSS.1128	list enterprise failed.	Failed to list the enterprise projects for which you have permission.	Check your fine-grained permissions for enterprise projects.
403	FSS.1154	Aliases of a function bound with triggers cannot be deleted.	The aliases cannot be deleted because they are bound with triggers.	Delete the triggers first.
404	FSS.0404	The specified resource cannot be found.	The resource cannot be found.	Check whether the resource exists.
404	FSS.1050	The mounted resource cannot be found.	The mounted resource cannot be found.	Check whether the mounted resource exists.
404	FSS.1051	The function does not exist.	The function cannot be found.	Check whether the function exists.
404	FSS.1052	The version does not exist.	The version cannot be found.	Check whether the function version exists.
404	FSS.1053	The alias does not exist.	The alias cannot be found.	Check whether the function version alias exists.
404	FSS.1054	The function code package does not exist in OBS.	The specified code package cannot be found in OBS.	Check whether the function code package exists in OBS.
404	FSS.1055	The app does not exist in obs.	The specified function app cannot be found in OBS.	Check whether the app exists in OBS.
404	FSS.1056	The dependency does not exist.	The dependency does not exist.	Check whether the dependency exists.

Status Code	Error Code	Error Message	Description	Solution
404	FSS.1057	The function name does not exist in the YAML file.	The function name does not exist in the YAML file.	Check whether the function name exists in the YAML file.
404	FSS.1059	The function template does not exist.	The function template does not exist.	Check whether the function template exists.
404	FSS.1060	The event template cannot be found.	The event template does not exist.	Check whether the event template exists.
404	FSS.1070	The event cannot be found.	The event cannot be found.	Check whether the event exists.
404	FSS.1086	The function async invocation configuration does not exist.	Asynchronous invocation configuration cannot be found.	Check the asynchronous invocation configuration of the function.
404	FSS.1111	The Kafka resource cannot be found.	The Kafka resource cannot be found.	Check whether the Kafka instance exists.
404	FSS.1130	The DIS stream does not exist.	The DIS stream cannot be found.	Check whether the DIS stream exists.
404	FSS.1131	The trigger does not exist.	The trigger cannot be found.	Check whether the trigger exists.
404	FSS.1132	The SMN trigger does not exist. View the SMN console.	The SMN trigger cannot be found.	Check whether the SMN trigger exists.
404	FSS.1133	The DMS trigger does not exist.	The DMS trigger cannot be found.	Check whether the DMS trigger exists.
404	FSS.1134	The DIS trigger does not exist.	The DIS trigger cannot be found.	Check whether the DIS trigger exists.

Status Code	Error Code	Error Message	Description	Solution
404	FSS.1135	The DMS queue does not exist.	The DMS queue cannot be found.	Check whether the DMS queue exists.
404	FSS.1136	The OBS trigger does not exist.	The OBS trigger cannot be found.	Check whether the OBS trigger exists.
404	FSS.1137	Invalid trigger type.	Invalid trigger type.	Check whether the trigger type is valid.
404	FSS.1138	The APIG trigger does not exist.	The APIG trigger cannot be found.	Check whether the APIG trigger exists.
404	FSS.1139	The DMS consumer group does not exist.	The DMS consumer group cannot be found.	Check whether the DMS consumer group exists.
404	FSS.1140	The timer trigger does not exist.	The timer trigger cannot be found.	Check whether the timer trigger exists.
404	FSS.1160	The LTS trigger does not exist.	The LTS trigger cannot be found.	Check whether the LTS trigger exists.
404	FSS.1161	The LTS topic does not exist.	The LTS log topic cannot be found.	Check whether the LTS log topic exists.
404	FSS.1163	The DDS trigger cannot be found.	The DDS trigger cannot be found.	Check whether the DDS trigger exists.
404	FSS.1171	The SMN topic does not exist. Create it on the SMN console.	The SMN topic does not exist.	Check whether the SMN topic exists.
404	FSS.1174	The Kafka trigger does not exist.	The Kafka trigger cannot be found.	Check whether the Kafka trigger exists.
406	FSS.0406	Not acceptable.	Invalid request format.	Check the API request body.

Status Code	Error Code	Error Message	Description	Solution
406	FSS.1151	The OBS bucket is in a different region.	The region where the OBS bucket is located does not match the current region.	Use another OBS bucket.
408	FSS.0408	Request timeout.	Request timed out.	Check the network.
409	FSS.0409	The specified resource already exists.	The resource already exists.	Check whether the resource already exists.
409	FSS.1061	The function already exists.	The function already exists.	Check whether the function already exists.
409	FSS.1062	The version already exists.	The version already exists.	Check whether the function version already exists.
409	FSS.1063	The alias already exists.	The alias already exists.	Check whether the function version alias already exists.
409	FSS.1064	The app already exists.	The app already exists.	Check whether the app already exists.
409	FSS.1065	The dependency already exists.	The dependency already exists.	Check whether the dependency already exists.
409	FSS.1066	The version is already in use by another alias.	The version is already in use by another alias.	Check whether the version is currently in use.
409	FSS.1067	The function template already exists.	The function template already exists.	Check whether the function template already exists.
409	FSS.1141	The SMN trigger already exists.	The SMN trigger already exists.	Check whether the SMN trigger already exists.

Status Code	Error Code	Error Message	Description	Solution
409	FSS.1142	The DMS trigger already exists.	The DMS trigger already exists.	Check whether the DMS trigger already exists.
409	FSS.1143	The DIS trigger already exists.	The DIS trigger already exists.	Check whether the DIS trigger already exists.
409	FSS.1145	The OBS trigger already exists.	The OBS trigger already exists.	Check whether the OBS trigger already exists.
409	FSS.1146	The APIG trigger already exists.	The APIG trigger already exists.	Check whether the APIG trigger already exists.
409	FSS.1147	The request path already exists.	The APIG triggering path already exists.	Check whether the APIG triggering path already exists.
409	FSS.1148	The timer trigger already exists.	The timer trigger already exists.	Check whether the timer trigger already exists.
409	FSS.1149	The LTS trigger already exists.	The LTS trigger already exists.	Check whether the LTS trigger already exists.
409	FSS.1150	The Kafka trigger already exists.	The Kafka trigger already exists.	Check whether the Kafka trigger already exists.
409	FSS.1166	The DDS trigger already exists.	The DDS trigger already exists.	Check whether the DDS trigger already exists.
410	FSS.0410	The specified resource does not exist.	The specified resource does not exist.	Check whether the resource exists.
412	FSS.1033	The dependency is currently in use.	Failed to delete the dependency because it is in use.	Check whether the dependency is in use before deleting it.
412	FSS.1090	The subnet is not in the ACTIVE state.	The subnet is not in the ACTIVE state.	Check whether the subnet is available.

Status Code	Error Code	Error Message	Description	Solution
412	FSS.1095	The mounted resource is not ready.	The mounted resource is not ready.	Prepare the mounted resource.
412	FSS.1153	The triggering conditions have not been met.	The triggering conditions have not been met.	Check the triggering conditions.
412	FSS.1440	Specified dependency version is used by X functions, please delete the function or the relation at first.	This dependency version is in use by X functions.	Check whether the dependency version is in use.
413	FSS.0413	The request body is too large.	The request body exceeds the maximum allowed limit.	Check the request body.
413	FSS.1071	The size of the code package to be uploaded exceeds the maximum allowed limit (50 MB).	The size of the code package to be uploaded exceeds 50 MB.	Check the size of the code package.
413	FSS.1072	The size of the inline code exceeds the maximum allowed limit (10 KB).	The code exceeds 10 KB.	Check whether the size of the inline code reaches 10 KB.
413	FSS.1201	The request body is too large.	The request body exceeds the maximum allowed limit.	Check the request body size.
424	FSS.0424	Invalid dependency.	Invalid dependency.	Check whether the dependency is valid.

Status Code	Error Code	Error Message	Description	Solution
426	FSS.0426	An upgrade is required.	Unsupported operation. Perform an upgrade.	Contact technical support.
426	FSS.1152	The selected bucket cannot be used to create a trigger.	The selected OBS bucket cannot be used to create a trigger.	Contact technical support.
428	FSS.0428	The preconditions have not been met.	The preconditions are not met.	Check the prerequisites.
429	FSS.0429	Too many requests.	Too many concurrent requests. Please try again later.	Try again later.
429	FSS.1429	Function concurrent invocation requests exceeds max value, please increase the max instances num or max concurrency per instance.	The number of concurrent function requests exceeds the upper limit (Max. instances per function x Max. requests per instance).	Increase the number of max. instances per function or max. requests per instance and try again.
500	FSS.0500	Internal service error.	The service is temporarily abnormal due to an internal invocation error. Please try again later.	The service is temporarily abnormal due to an internal invocation error. Please try again later.
500	FSS.1162	The operation cannot take effect immediately due to service exception.	The operation cannot take effect immediately because the service is abnormal.	Contact technical support.

Status Code	Error Code	Error Message	Description	Solution
500	FSS.1202	The response body or callback body is invalid because they do not contain any status code.	Invalid response body.	Contact technical support.
500	FSS.1206	Failed to convert result for apig.	The result cannot be converted for APIG.	Check the APIG response or contact technical support.
500	FSS.1302	Failed to save the data.	Failed to save the trigger data.	Try again later or contact technical support.
500	FSS.1315	The CTS service is unavailable.	Server error.	Contact CTS technical support.
500	FSS.4001	function entry is not found.	Function handler not found.	Check whether the function handler matches the one in the uploaded code.
500	FSS.4002	The user function failed to run.	The function failed to run.	Check the code.
500	FSS.4003	state content is too large.	The status information is too large.	Check the status information.
500	FSS.4004	the return value of the function exceeds the maximum allowed limit.	The returned content exceeds the limit.	Check whether the returned content exceeds 6 MB.
500	FSS.4005	state is undefined.	Undefined status.	Check the status information.
500	FSS.4006	function name has no service ID.	The function is not stateful.	Check whether serviceID is configured for the function.

Status Code	Error Code	Error Message	Description	Solution
500	FSS.4007	function result is invalid.	Function invocation result is invalid.	Check the function code based on the error message.
500	FSS.4008	response body size %d exceeds the limit of %d.	Return value body is too large.	Check the return value.
500	FSS.4009	function initialization exception.	The initialization function is not working.	Check the code logic of the initialization function.
500	FSS.4010	invoke timed out after %s.	Function invocation timed out.	Locate the cause and check the configured timeout.
500	FSS.4011	Initialization function execution times out.	Function initialization timed out.	Locate the cause.
500	FSS.4012	load function timed out after %s.	Function load timed out.	Check whether the code package is successfully downloaded from OBS.
500	FSS.4013	failed to check auth of the request.	Stateful request authentication failed.	Check the authentication information.
500	FSS.4014	reading the storeObject timeout.Use larger memory	Dependency loading timed out.	Increase the function memory.

Status Code	Error Code	Error Message	Description	Solution
500	FSS.4020	runtime dir xxx is forbidden.	User changes the permissions for the /home/snuser and /opt/function/runtime directories using the chmod command.	Check whether the user changes the permissions for /home/snuser and /opt/function/runtime directories using the chmod command.
500	FSS.4021	trigger request of this tenant is limited at this frontend instance	Too many concurrent requests.	Contact technical support.
500	FSS.4024	function metadata is not found.	The function metadata does not exist.	Check whether the function exists.
500	FSS.4025	can not create a state using a stateless function	Stateful instances cannot be created using a stateless function.	Check whether the function is stateful.
500	FSS.4026	instanceName is not exist	The instance you specified does not exist.	Check whether the stateful instance exists.
500	FSS.4027	cannot be created repeatedly instanceID	The stateful instance name already exists.	Check whether the stateful instance name already exists.
500	FSS.4140	the size of request body is beyond maximum body size.	The function request body exceeds the limit (6 MB).	Check whether the function request body exceeds the limit. If it does not, contact technical support.

Status Code	Error Code	Error Message	Description	Solution
500	FSS.4201	function initialization failed	Failed to initialize the function.	Check the function initialization code.
500	FSS.4202	runtime bootstrap not found	No bootstrap file found.	Check the path of the bootstrap file.
500	FSS.4203	runtime process is exited	The bootstrap script exits before execution is complete.	Check the bootstrap script.
500	FSS.4204	The user bootstrap script syntax is incorrect.	The syntax of the bootstrap script is incorrect.	Check the bootstrap script.
500	FSS.4205	runtime memory limit exceeded	Too much memory used by the function.	Check the used memory and the configured limit.
500	FSS.4206	failed to mount volumes for function	Failed to attach the disk.	Check whether the disk info (such as path) in code is consistent with that in the configuration file. If the problem persists, contact technical support.
500	FSS.4207	disk uages exceed limit	The disk usage is too high.	Check the disk usage. If the problem persists, contact technical support.
500	FSS.4208	function invocation canceled	The request is canceled.	The request is canceled. Try again.
502	FSS.0502	Bad gateway.	Gateway error.	Contact technical support.
502	FSS.1319	Invalid trigger name.	Invalid trigger name.	Modify the trigger name.
503	FSS.0503	Service unavailable.	Service unavailable.	Contact technical support.

Status Code	Error Code	Error Message	Description	Solution
503	FSS.1115	The network is unreachable.	The network is unreachable.	Check the network.
503	FSS.1169	The network is unreachable.	The network is unreachable.	Check the network.
503	FSS.1170	Authentication error.	Authentication error. Check DDS configurations.	Check the DDS configuration.
503	FSS.1401	Failed to obtain the image information.	Failed to obtain the image information.	Check the image pull configuration.
503	FSS.1402	Failed to pull the image to create a container.	Failed to pull the image to create a container.	Check the image URL.
503	FSS.1403	Failed to pull the image to delete a container.	Failed to pull the image to delete a container.	Check the image URL.
504	FSS.0504	Gateway timeout.	Gateway timed out.	Check the network.

8.3 Obtaining Account, IAM User, Project, User Group, Region, and Agency Information

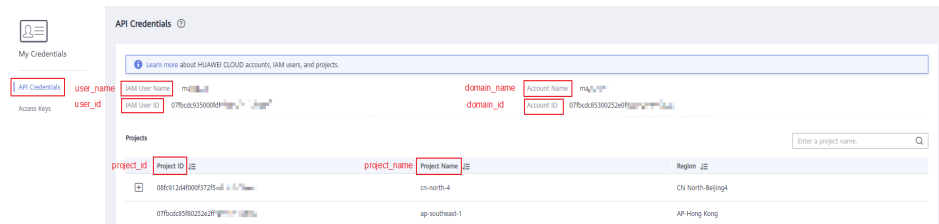
Obtaining Account, IAM User, and Project Information

- Using the console

Your username, user ID, account name, account ID, project name, and project ID need to be specified in the URL and request body for calling certain APIs. Obtain these parameters on the **My Credentials** page.

 - a. Log in to Huawei Cloud management console.
 - b. Hover over the username and choose **My Credentials** from the drop-down list.
 - c. View the account name, account ID, username, user ID, project name, and project ID on the **API Credentials** page.

Figure 8-1 Viewing the account, user, and project information



- Calling an API
 - For details about how to obtain a user ID, see [Listing IAM Users](#).
 - For details about how to obtain a project ID, see [Querying Project Information](#).

Obtaining User Group Information

1. Log in to the IAM console, and choose **User Groups** in the navigation pane.
2. Click next to the target user group to view its name and ID.

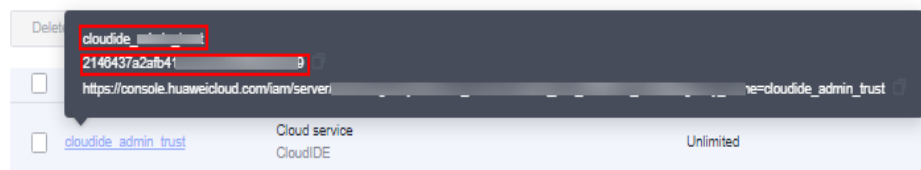
Obtaining Region Information

1. Log in to the IAM console, and choose **Projects** in the navigation pane.
2. The value in the **Project Name** column is the ID of the region to which the project belongs.

Obtaining Agency Information

1. Log in to the IAM console, and choose **Agencies** in the navigation pane.
2. Hover over the desired agency. The name and ID of this agency are displayed in a dark pop-up box.

Figure 8-2 Viewing an agency ID



8.4 FunctionGraph Metrics

Introduction

This section describes the function metrics reported to Cloud Eye.

Their namespace and dimension are also included. You can view monitoring graphs and alarm messages on the Cloud Eye console.

Namespace

SYS.FunctionGraph

Function Metrics

Table 8-2 Function metrics

Metric	Display Name	Description	Unit	Upper Limit	Lower Limit	Recommended Threshold	Value Type	Meaning	Dimension
count	Invocations	Number of times a function is invoked	Count	-	0	-	Int	Number of times a function is invoked	package-functionname
failcount	Errors	Number of errors that occur when a function is invoked	Count	-	0	-	Int	Number of errors that occur when a function is invoked	package-functionname
rejectcount	Throttles	Number of times a function is throttled when invoked	Count	-	0	-	Int	Number of times a function is throttled when invoked	package-functionname
duration	Average Duration	Average time a function is invoked	ms	-	0	-	Int	Average time a function is invoked	package-functionname
maxDuration	Maximum Duration	Maximum time a function is invoked	ms	-	0	-	Int	Maximum time a function is invoked	package-functionname

Metric	Display Name	Description	Unit	Upper Limit	Lower Limit	Recommended Threshold	Value Type	Meaning	Dimension
min Duration	Minimum Duration	Minimum time a function is invoked	ms	-	0	-	Int	Minimum time a function is invoked	package-functionname

Dimension

Table 8-3 Dimension

Key	Value
package-functionname	App_name-Function_name

9 Change History

Table 9-1 Change history

Date	Description
2023-06-20	This issue is the first official release.