05 API Reference - Official (Non-optimized Version of Huawei Cloud China Site)

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HUAWEI

HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

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1 Before You Start

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 the 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**.

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

Constraints

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

Endpoints

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

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 directly used to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- IAM user

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A user is created by an account to use cloud services. Each user has its own identity credentials (password or 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.

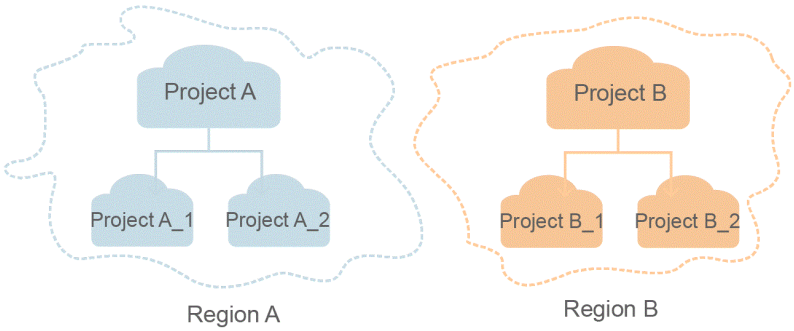
- AZ

  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



1.1 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 **API**.

1.1.1 Function Model

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

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Function Model

The function model of FunctionGraph is as follows:


```
{
    "functions": [
        {
            "func_urn":
"urn:fss:xxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
            "func_name": "test",
            "domain_id": "cff01_hk",
            "namespace": "7aad83af3e8d42e99ac194e8419e2c9b",
            "project_name": "xxxxxxxxxx",
            "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.

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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	FunctionGraph functions can run in 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, Node.js 20.15, Python 2.7, Python 3.6, Python 3.9, Python 3.10, Python 3.12, Java 8, Java 11, Java 17, Java 21, Go 1.x, C#.NET Core 2.1, C#.NET Core 3.1, C#.NET Core 6.0, C#.NET Core 8.0, Cangjie 1.0, PHP 7.3, PHP 8.3, Custom, HTTP, or custom image.
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, 4096, 8192, 10240.
cpu	CPU usage of a function.
code_type	Function code type. Options: • **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	• 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.

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Parameter	Description
code_filename	Function file name. • 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**.

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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	• **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.

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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.

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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**.

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- 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:xxxxxxxxx:73d69ae0cfcf460190522d060f05ad:function:default:auto_testfunc93749",

"func_name":"auto_testfunc93749",

"domain_id":"b8aca445e0d04d81a34bb59de5280c72",

"namespace":"73d69ae0cfcf460190522d060f05ad",

"project_name":"xxxxxxxxx",

"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": {

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```
"concurrency": -1

},

"enterprise_project_id": "0"

}
```

1.1.2 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, timer, DMS, DIS, LTS, DDS, CTS, APIG (dedicated), APIC, and Kafka.
display_name	Trigger type name.
status	Trigger type status. Options: • **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.

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Table 1-10 Parameters in the trigger instance model

Parameter	Description
trigger_id	Trigger ID.
trigger_type_code	Trigger type code. Options: SMN, APIG, 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.

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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 a Data Ingestion Service (DIS) trigger is as follows:

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

Table 1-13 describes the parameters of a DIS trigger.

Table 1-13 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 1-14 describes the parameters of an APIG trigger.

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Table 1-14 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.
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 1-15 describes the parameters of a timer trigger.

Table 1-15 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.

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Parameter	Description
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 1-16 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 1-17 Parameters of a Kafka trigger

Parameter	Description
instance_id	Kafka instance ID.
topic_id	Topic ID.
kafka_user	Username.
kafka_password	User password.

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Parameter	Description
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.

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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.

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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.

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3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the 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.
- **Endpoint**: Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**. For example, the endpoint of IAM in the AP-Bangkok region is iam.ap-southeast-2.myhuaweicloud.com.
- **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 AP-Bangkok region, obtain the endpoint of IAM (iam.ap-southeast-2.myhwclouds.com) for this region and the resource-path (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens
```

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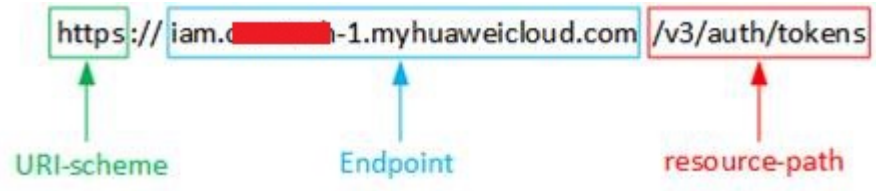
Figure 3-1 Example URI



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 **obtain a user token**, the request method is POST. The request is as follows:

```
POST https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens
```

Request Header

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

Common request header fields are as follows:

- **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 **obtain a user token**. This API is the only one that does not require authentication.

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

```
POST https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

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 *xxxxxxxxxxxxxxxxx* (project name) with the actual values. To learn how to obtain a project ID, see **Regions and Endpoints**.

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

```
POST https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json

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

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```
        }
      },
      "scope": {
         "project": {
            "name": "xxxxxxxxxxxxxxxxxx"
         }
      }
   }
}
```

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"
         }
      }
   }
}
```

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

```
GET https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

- AK/SK-based authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token-based authentication is recommended.
- **When calling a function using AK/SK-based authentication, the signature needs to be added to the x-project-id request header (mandatory for Riyadh region and project with sub-projects).**

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**.

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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

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": "xxxxxxxxx"
}
```

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

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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. **Step 1: Create a Function**: Create a function for downloading files from OBS.
2. **Step 2: Modify the Metadata of Function**: Modify the OBS address, bucket name, and file name in the function configurations.
3. **Step 3: Test the Function**: Verify whether the function can successfully download files from the OBS bucket.
4. **Step 4: Create a Timer 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

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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":
"UEsDBAoAAAAIABESwlDHSM8cOQYAAJYRAAAIAAAAaW5kZXgucHm9V91v2zYQf9dfcXAeLKeKkrYZNg
TQQ9JvpG2CJsOwJ4GWaJuLRGok5VT963dHUpZsJ82GofVDQh2Pd8e7333wAI4Oj6BQpZDLM2jt4ug3ok
QH8MeKS9CtlLgDdiUMGFY3FSdmDlYBKwpuDFxd3CTQqRbq1lgwDS/
EogMmgS25LDq4F3YFy0rNWQWG67UoeH+04boWxgglDcRKA7NQcYZS3BkU/
ADjLI0WWtVoRZ2quUmLSnBpaZn7JYi6UdrC1dy8coRt/hqtr0y65DZX8794YfMVZyXX/
bF33F45+ntHfuqw5n+33Ni90188PQp005l+qUwUFa3WaFm+EBXPG4aXzZCe0iothZas5nH/
rTmraBHnnj2fzTA652VpMCoYDS8KnBSMiuFMFyv3aeg7aMUA6vKoYdp2UIm5Zlpwk0Zol9fCmobLMt4zb
BZFt28+Xedfrq5u8+vz2/do6eTY1s3xBPzvAF6re1kphgYxoIPgfEbhQ/
0OOXgn9InSXRppvsQwopRpsRKSTWH7dwC3dAANRR9YDEupuAGpLEjOSxI4xzuvmFziF5MlQqWqiNYaJ
NwTZt+2srCo451mzSogiDuc4n053pCj9lvdctj7/WjtYimZ9QZM16c/+e4OBxmcnr6Eh34/
WjuCKTe2qx72/g/
WfkD1gZWlpmqCzneVQx5JdMnq6Ne07lb3RaXaEqmqng7ArpmQQOkIauHSjVAdqlgKvxvuiCVfsLaysGZV
y9MI0/M9mljhLcKpRTAtQk5Yhb2YrzHVEiwu0vKvdnYWkdZKLZe4mfVkKjYfHS2ewaO/
Ayx3Fm2lFEQJgCvLJNroZIbqO/
KBI2/7ZKQP76VfM8vi6YhlOnOHjC4u2uKO28eObBims7F9byRFlZwxdufci8L4ae9KVtgWTXVlxAe9DNUFw
0w9CKsIL9PeFCy2n0ncd4wJLBtrHjPle5oTWGB74l9dA0wcT2pRV
+TsEIuRV9DGz0qiVD22L1B9iIcwp1xrpePJNbU9jsCywOVaaCVrqulrrNJsXiGIB/mE/UFwOpltRGqOpUXC/
5QWeR/9iQ2dYUxYuRbGJ2Ab0D7GFzRarQXFZt7tJCCeKPm8XZInGi3QgBpRhEOBcVoptUdCsS6KNQ
+Mfbqko4xIhVyoGCaHh4eD/
WT0GUzg2UCa7Z3pj4RLngX28Ik3jnYzyHJqmkx3cH7pjL253B54UjjfzDcYWhoCsMOVI6YP55+89exuG5vn
bv
+Sd3HIp539G15gIP1+jy6SgW134kAV1o9B6S1DcJbb5iKYC0aelmrrbgleLCGhVt1hAV0xg5y4UM4TmGYwg
tJmonsQcz9HbbQ3cEhom1AdtkaPUCEstlsqbpu5LB5VtGRATTJCRIL+xu+7We/
+uBeTwYuTExeEEeH5bAiFqNHW3Ihv1OQKVuUDIR5DrudXrW1aqqSTW8wBP1KOC55pnTMXbVV1m6slD
pKUNE4R4s8h2up40DZDygQuLya7KHEZ4dXuRdGTHRWn3EeLVW/fzqy3cAh4CBtPHaCG
+d0ZknoaenM8Rllj3QoqDsQ6Cf3ER1HthPPMw+cWx3J8G6DTNy+E2GM2v
+NdLsrM8bs0zIeNzNwl0U7XFSb3A2Xm/yVuNOA629izmfiyzSqBYRTKhmUCfjLO/L/
EmCpHUfiWyt4yjAYew2Eloz97dtTsKz5ErO7yQrXSZr8kYEXNMZ7Zi5OQNR/V
+F0yTolAil0Rwtnfdg3PpvggqETBqAwffxPNNMwpuF/hENYi0DLqaAl2xQbDYvxXBP/
qV7BixXMSqFUV5PTiS2EaZQQp3tnBKuDeqf9JFfqQ3o0fSneqd4Z/821VBv/
eizWNmNkU7ysWOb73xELwEnMKm10wB+mtfGynZrZYDZ8SFyNa32wI6TcWX3b1B/
mJ14hotMSF2W1TAhB0r/
3LcOcB9qxHduSzzDTE41FNHSTkxJAK2U5W4C72l2yTH31+krpsrPsJHy93EJRtYyyB4OWsd3fywMWzfVIIk
psF4il1702Q3HXPYJq4RWDsCw2xEzn15XlG3qY6sVOI+xuGuv2Us/
v90HtesapoK2a5GUowTpChauFr4fIi9B7fBfpnPDprSzupm8ExPD95cTq+BTFF/
wBQSwECHgMKAAAACAAREsJQx0jPHDkGAACWEQAACAAAAAAAAAAAAAA8wIAAAAAaW5kZXgucHl
QSwUGAAAAAAEAAQA2AAAAXwYAAAA"
 },
 "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",
```

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```
 "code_size": 1707,
 "digest":
"68891a6778848a78bd37a8c0798c91d75a5c87aee6e901303047a52edf05bf2170aac4149d79b3f6a40ef
e78406a83bf6d8683e7b25da4f0c07e7493aa4ccdcd",
 "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
e78406a83bf6d8683e7b25da4f0c07e7493aa4ccdcd",
```

```
"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"
}
```

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4.2 Example 2: 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.

Constraints

Ensure that the function and the OBS bucket are created in the same region.

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
   ```

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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"
}
```

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4.3 Example 3: 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.

Constraints

Ensure that the function and the subfunction are created in the same region.

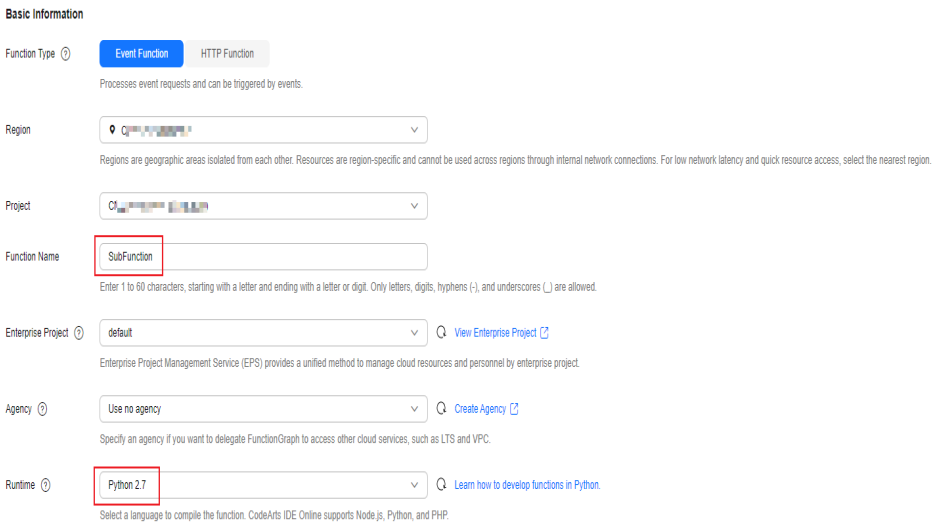
Overall Procedure

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

Step 1: Create a Subfunction

Create a subfunction on the FunctionGraph console. Set parameters by referring to **Figure 4-1** and retain the default values for other parameters.

Figure 4-1 Setting parameters



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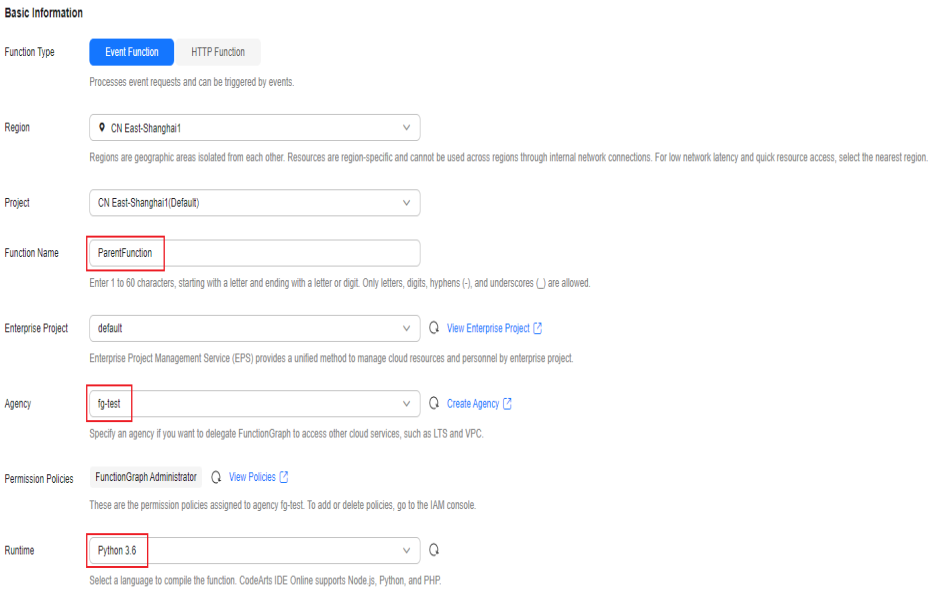
Step 2: Create a Function

1. Create a function on the FunctionGraph console. Select an agency with the **FunctionGraph Administrator** or **Tenant Administrator** permission. Select the region as required. In addition, set parameters as shown in **Figure 4-2** and retain the default values for other parameters.

   Figure 4-2 Setting parameters

2. On the **Code** tab page, copy the following sample code to the code editing area, replace the fields, and click **Deploy**. For details about the fields, see **Table 4-1**.

```
import json
import requests
def handler (event, context):
    token = context.getToken()
    project_id = context.getProjectID()
    urn = 'urn:fss:xx-xxxxx-x:xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx: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"
        }
    }
```

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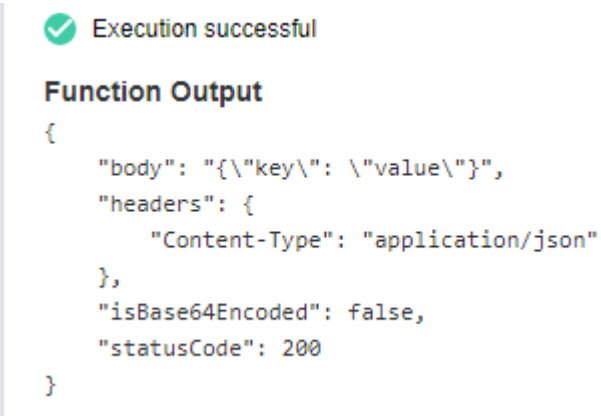
Table 4-1 Sample code field description

Field	Description
region_id	Region ID. For details, set this field based on the region where the function is located. For details, see the **Region ID** column in **Regions and Endpoints**. For example, if the region is **CN East-Shanghai1**, enter **cn-east-3**.
external_global_domain_name	Global domain name. Enter **myhuaweicloud.com**.

Step 3: Use the Function to Invoke the Subfunction

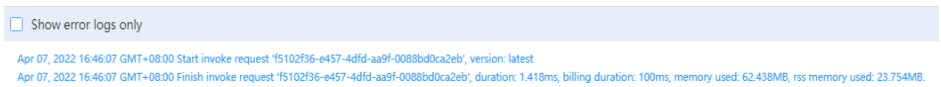
1. On the details page of the function, click **Test**. The **Configure Test Event** box is displayed. Create a test event using the default blank template and click **Create**.
2. Click **Test** in the code editing area to invoke the function.
3. View the execution result.
   - The execution result of the function is **Execution successful** and **200** is returned.

     Figure 4-3 Function execution record

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

     Figure 4-4 Subfunction execution record

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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

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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.

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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",
```

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```
    "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))
```

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```
    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.

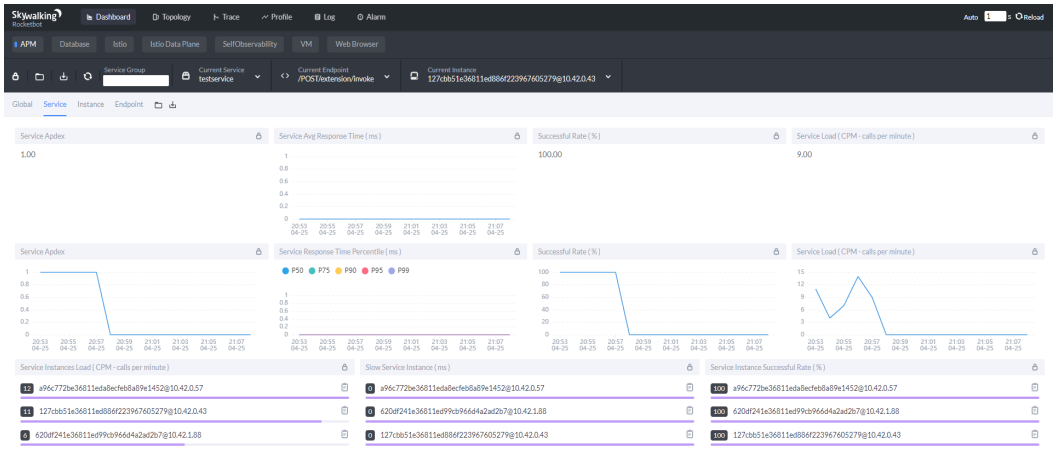
Compile the code locally to generate a binary file. Then package the binary file and the .sh script file prefixed with **extension**, and upload them as a dependency. The file structure of the extension dependency package is as follows:

extension -

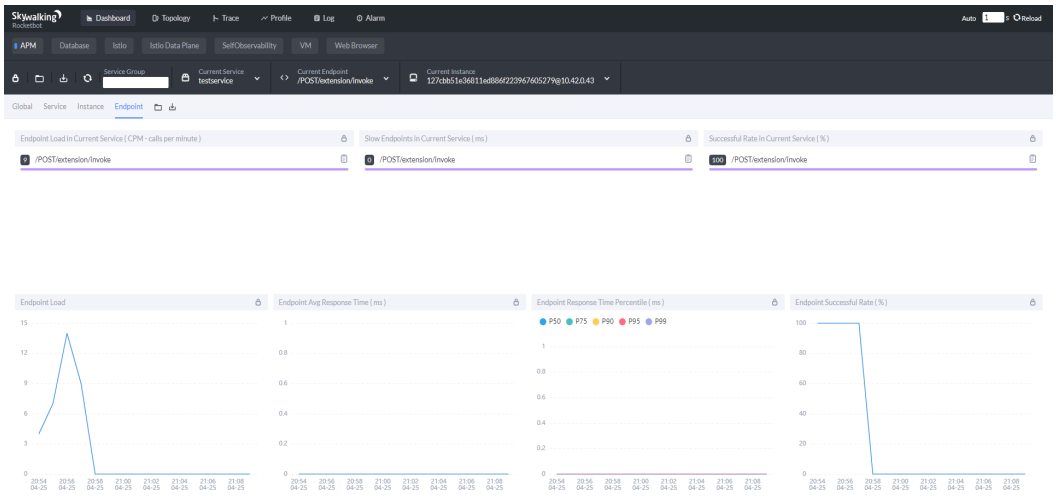
extensionDemo.sh

Extension # Generated binary file

Service page after successful connection



Endpoint page



5.1.6 Connecting to DataDog with an Extension

This section describes how to use extension APIs to report monitoring data to the DataDog platform.

Preparations

- Register an account at the DataDog official website. Obtain necessary configuration information including the target domain name, API key, and app key for data reporting.
- For functions that need to be extended, enable public access for them. For details, see **Configuring Public Access for a Function**.

Connecting a Function to DataDog

Step 1 Compile the extension package code.

The following code example shows how to use an extension API to report the **functiongraph.invoke.count** metric to the DataDog platform to record the number of function calls. You can refer to this example to develop an extension package.

```
package main

import (
    "context"
    "encoding/json"
    "errors"
    "fmt"
    "io"
    "net/http"
    "os"
    "time"

    "github.com/DataDog/datadog-api-client-go/v2/api/datadog"
    "github.com/DataDog/datadog-api-client-go/v2/api/datadogV2"
)

const (
    registerURL    = "/extension/register"
    invokeURL      = "/extension/invoke"
    requestTimeout = 5 * time.Second
```

```
    extensionName  = "FunctionGraph-Extension-Name"
    extensionAddr  = "FunctionGraph-Extension-Address"

    currentExtensionAddr = "127.0.0.1:8081"
    currentExtensionName = "extension_1.sh"
)

var (
    extensionApiAddr = os.Getenv("EXTENSION_API_ADDR")
)

type ExtensionRequest struct {
    TraceID string `json:"traceId" valid:"optional"`
    URN     string `json:"invokedFunctionUrn" valid:"optional"`
}

func init() {
    // Set your DataDog site address
    os.Setenv("DD_SITE", "your_datadog_site")
    // Set your DataDog api key
    os.Setenv("DD_API_KEY", "your_datadog_api_key")
    // Set your DataDog app key
    os.Setenv("DD_APP_KEY", "your datadog_app_key")
}

func main() {
    err := registerExtension(currentExtensionName, currentExtensionAddr)
    if err != nil {
        fmt.Printf("failed to register extension, error: %s \n", err.Error())
        return
    }

    http.HandleFunc(invokeURL, ServeHTTP)
    err = http.ListenAndServe(currentExtensionAddr, nil)
    if err != nil {
        fmt.Printf("http server error, error: %s \n", err.Error())
        return
    }

    return

}

func getHTTPClient() *http.Client {
    httpClient := &http.Client{
        Timeout: requestTimeout,
    }
    return httpClient
}

func registerExtension(name, address string) error {
    if len(extensionApiAddr) == 0 {
        return errors.New("failed to get extension api addr")
    }
    baseURLPath := "http://" + extensionApiAddr + registerURL
    req, err := http.NewRequest("POST", baseURLPath, nil)
    if err != nil {
        fmt.Printf("failed to build register request, error: %s\n", err.Error())
        return err
    }
    req.Header.Set("Content-Type", "application/json")
    req.Header.Set(extensionName, currentExtensionName)
    req.Header.Set(extensionAddr, currentExtensionAddr)
    _, err = getHTTPClient().Do(req)
    if err != nil {
        fmt.Printf("failed to send register request, error: %s\n", err.Error())
        return err
    }
    return nil
```

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```
}

func ServeHTTP(writer http.ResponseWriter, request *http.Request) {
    req := ExtensionRequest{}
    defer request.Body.Close()
    b, err := io.ReadAll(request.Body)
    if err != nil {
        fmt.Printf("failed to parse invoke request body with error: %s \n", err.Error())
        writeHeaders(writer, 500, "failed to parse invoke request body")
        return
    }
    if err := json.Unmarshal(b, &req); err != nil {
        fmt.Printf("failed to unmarshal the json, error: %s", err.Error())
        writeHeaders(writer, 500, "failed to unmarshal the json")
        return
    }

    fmt.Println(" invoke request traceID -- ", req.TraceID)
    fmt.Println(" invoke request URN -- ", req.URN)
    sendMetricToMyDataDog(req.URN, req.TraceID)
    writeHeaders(writer, 200, "succeed to get invoke request")
    return
}

func writeHeaders(w http.ResponseWriter, status int, msg string) error {
    w.WriteHeader(status)
    _, err := w.Write([]byte(msg))
    return err
}

func sendMetricToMyDataDog(urn string, traceId string) {
    // Assemble your metric data
    body := datadogV2.MetricPayload{
        Series: []datadogV2.MetricSeries{
            {
                Metric: "functiongraph.invoke.count",
                Type:   datadogV2.METRICINTAKETYPE_UNSPECIFIED.Ptr(),
                Points: []datadogV2.MetricPoint{
                    {
                        Timestamp: datadog.PtrInt64(time.Now().Unix()),
                        Value:     datadog.PtrFloat64(1),
                    },
                },
                Resources: []datadogV2.MetricResource{
                    {
                        Name: datadog.PtrString(urn),
                        Type: datadog.PtrString("function_urn"),
                    },
                    {
                        Name: datadog.PtrString(traceId),
                        Type: datadog.PtrString("trace_id"),
                    },
                },
            },
        },
    }
    ctx := datadog.NewDefaultContext(context.Background())
    configuration := datadog.NewConfiguration()
    apiClient := datadog.NewAPIClient(configuration)
    api := datadogV2.NewMetricsApi(apiClient)
    resp, r, err := api.SubmitMetrics(ctx, body, *datadogV2.NewSubmitMetricsOptionalParameters())

    if err != nil {
        fmt.Fprintf(os.Stderr, "Error when calling `MetricsApi.SubmitMetrics`: %v\n", err)
        fmt.Fprintf(os.Stderr, "Full HTTP response: %v\n", r)
    }

    responseContent, _ := json.MarshalIndent(resp, "", "  ")
```

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```
    fmt.Fprintf(os.Stdout, "Response from `MetricsApi.SubmitMetrics`:\n%s\n", responseContent)
}
```

Step 2 Create an extension dependency.

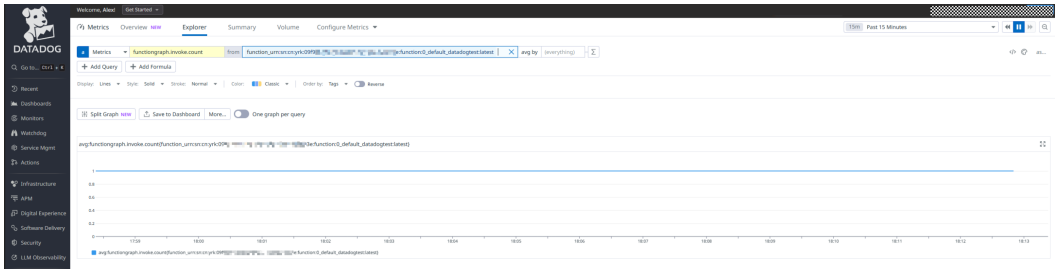
For details, see **How Do I Create Function Dependencies? datadog-extension** is an example dependency, which can be downloaded and used.

Step 3 Configure the function extension dependency.

Configure the dependency for the function. For details, see **Configuring Dependency Packages**.

Step 4 Trigger the function and log in to the DataDog to view the reported metrics.

Figure 5-1 Logging in to the DataDog and viewing the reported metrics



----End

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.

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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**.

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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
				{
				"name":"platform.initStart ",
				"startTime": "2023-02-01T00:03:50.000Z ",
				"traceId": "69be64a7-0233-11e8-82e4-e5d37911193e"
				}

	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
				{
				"name": " platform.initRuntimeDone",
				"startTime": "2023-02-01T00:03:50.000Z",
				"traceId": "69be64a7-0233-11e8-82e4-e5d37911193e",
				"status":" success ",
				}

	platform.RuntimeDone	Function is invoked.		
	platform.restoreRuntimeDone	Environment is restored.		

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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
				{
				"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,
				}
				}

	platform.report	Invocation report		
	platform.restoreReport	Environment restoration report		

function events

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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."
		}

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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.

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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. • v0: text format. • v1: JSON format. Select this format when using an SDK.
X-Cff-Instance-Memory	No	String	Function instance memory. The value can be 128, 256, 512, 768, 1,024, 1,280, 1,536, 1,792, 2,048, 2,560, 3,072, 3,584, 4,096, 8,192, or 10,240.

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.

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Parameter	Type	Description
X-Cff-Request-Id	String	Request ID of the synchronous invocation.
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

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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.

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Example Requests

Execute a function synchronously.

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

{
  "body" : "",
  "requestContext" : {
    "apiId" : "bc1dcffd-xx",
    "requestId" : "xxx",
    "stage" : "RELEASE"
  },
  "queryStringParameters" : {
    "responseType" : "html"
  },
  "httpMethod" : "GET",
  "pathParameters" : null,
  "headers" : {
    "accept-language" : "zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,en-US;q=0.3,en;q=0.2",
    "accept-encoding" : "gzip, deflate, br",
    "x-forwarded-port" : "443",
    "x-forwarded-for" : "127.0.0.1",
    "x-forwarded-proto" : "https"
  },
  "path" : "/apig-event-template",
  "isBase64Encoded" : true
}
```

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.

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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.

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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

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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.
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.

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

{
  "body" : "",
  "requestContext" : {
    "apiId" : "bc1dcffd-xx",
    "requestId" : "xxx",
    "stage" : "RELEASE"
  },
  "queryStringParameters" : {
    "responseType" : "html"
  },
  "httpMethod" : "GET",
  "pathParameters" : null,
  "headers" : {
    "accept-language" : "zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,en-US;q=0.3,en;q=0.2",
    "accept-encoding" : "gzip, deflate, br",
    "x-forwarded-port" : "443",
    "x-forwarded-for" : "127.0.0.1",
    "x-forwarded-proto" : "https"
  },
  "path" : "/apig-event-template",
```

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```
  "isBase64Encoded" : true
}
```

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.
503	Service unavailable.

Error Codes

See **Error Codes**.

6.1.3 Executing a Function Asynchronously and Returning Reserved Instance IDs(Discarded)

Function

This API is used to execute a function asynchronously and return reserved instance IDs. It is suitable for clients that execute a time-consuming task but do not need to wait for the execution result. A reserved instance ID will be returned for this API. If the instance is abnormal, you can delete it based on its ID. Note that this API is only available for whitelisted users.

URI

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

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Table 6-22 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 6-23 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.

Table 6-24 Request body parameters

Parameter	Mandatory	Type	Description
{User defined key}	Yes	Object	Request body for executing a function asynchronously and returning reserved instance IDs.

Response Parameters

Status code: 202

Table 6-25 Response header parameters

Parameter	Type	Description
Content-Type	String	application/json

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Table 6-26 Response body parameters

Parameter	Type	Description
instance_id	String	Reserved instance ID.

Status code: 404

Table 6-27 Response body parameters

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

Example Requests

Execute a function asynchronously and return reserved instance IDs.

```
POST /v2/{project_id}/fgs/functions/{function_urn}/reserved-invocations

{
  "body" : {
    "k" : "v"
  }
}
```

Example Responses

Status code: 202

Accepted

```
{
  "instance_id" : "048bad9b-96ae-45ad-8f12-4061a744ef9d"
}
```

Status code: 404

Not Found

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

Status Codes

Status Code	Description
202	Accepted
404	Not Found

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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 6-28 Path Parameters

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

Request Parameters

Table 6-29 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

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Table 6-30 Response body parameters

Parameter	Type	Description
quotas	**ListQuotasResult** object	Quota information.

Table 6-31 ListQuotasResult

Parameter	Type	Description
resources	Array of **Resources** objects	Quota list.

Table 6-32 Resources

Parameter	Type	Description
quota	Integer	Function quota.
used	Integer	Used quota.
type	String	Resource type. Enumeration values: • **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.

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Status code: 400

Table 6-33 Response body parameters

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

Status code: 401

Table 6-34 Response body parameters

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

Status code: 403

Table 6-35 Response body parameters

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

Status code: 500

Table 6-36 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
```

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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 6-37 Path Parameters

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

Table 6-38 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.

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Parameter	Mandatory	Type	Description
runtime	No	String	Environment in which a FunctionGraph function is executed. Options: • Python 2.7 • Python 3.6 • Python 3.9 • Python 3.10 • 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 • Node.js16.17 • Node.js18.15 • C# (.NET Core 2.1) • C# (.NET Core 3.1) • Custom • PHP 7.3 • HTTP • Custom Image • Cangjie1.0
name	No	String	Dependence name.
limit	No	String	Maximum number of dependencies that can be obtained in a query. Default value: 400.

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Request Parameters

Table 6-39 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 6-40 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 6-41 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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 6-42 Response body parameters

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

Status code: 403

Table 6-43 Response body parameters

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

Status code: 404

Table 6-44 Response body parameters

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

Status code: 500

Table 6-45 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/dependencies?marker=0&maxitems=400
```

Example Responses

Status code: 200

ok

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```
{
  "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 6-46 Path Parameters

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

Request Parameters

Table 6-47 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 6-48 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.

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Parameter	Mandatory	Type	Description
runtime	Yes	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
name	Yes	String	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.

Parameter	Mandatory	Type	Description
description	No	String	Description of the dependency, which can contain a maximum of 512 characters.

Response Parameters

Status code: 200

Table 6-49 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
etag	String	Dependency ID.
size	Long	Dependency size.
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.

Status code: 400

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Table 6-50 Response body parameters

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

Status code: 401

Table 6-51 Response body parameters

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

Status code: 403

Table 6-52 Response body parameters

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

Status code: 404

Table 6-53 Response body parameters

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

Status code: 500

Table 6-54 Response body parameters

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

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Status code: 503

Table 6-55 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-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"
}
```

Status Codes

Status Code	Description
200	ok
400	Bad request.

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Status Code	Description
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 6-56 Path Parameters

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

Request Parameters

Table 6-57 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).

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Table 6-58 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.

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Parameter	Mandatory	Type	Description
runtime	Yes	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
name	Yes	String	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.

Parameter	Mandatory	Type	Description
description	No	String	Description of the dependency, which can contain a maximum of 512 characters.

Response Parameters

Status code: 200

Table 6-59 Response body parameters

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

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
etag	String	Unique identifier of the dependency.
size	Long	Dependency size.
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.

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Status code: 401

Table 6-60 Response body parameters

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

Status code: 403

Table 6-61 Response body parameters

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

Status code: 404

Table 6-62 Response body parameters

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

Status code: 500

Table 6-63 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.
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.

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URI

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

Table 6-64 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 6-65 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 6-66 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

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Table 6-67 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 6-68 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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.

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

Status code: 401

Table 6-69 Response body parameters

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

Status code: 403

Table 6-70 Response body parameters

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

Status code: 404

Table 6-71 Response body parameters

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

Status code: 500

Table 6-72 Response body parameters

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

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Example Requests

Query dependencies of the current tenant.

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

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Table 6-73 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 6-74 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 6-75 Response body parameters

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

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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.

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Parameter	Type	Description
download_link	String	Temporary download link of a dependency file.
is_shared	Boolean	Whether to share the dependency version. (discarded)

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.

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Parameter	Type	Description
error_msg	String	Error message.

Example Requests

Query dependencies of the current tenant.

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

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.

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URI

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

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.
version	Yes	String	Dependence version.

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.
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 400

Table 6-82 Response body parameters

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

Status code: 401

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Table 6-83 Response body parameters

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

Status code: 403

Table 6-84 Response body parameters

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

Status code: 404

Table 6-85 Response body parameters

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

Status code: 500

Table 6-86 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
400	Bad request.
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 6-87 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.

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Request Parameters

Table 6-88 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: 400

Table 6-89 Response body parameters

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

Status code: 401

Table 6-90 Response body parameters

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

Status code: 403

Table 6-91 Response body parameters

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

Status code: 404

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Table 6-92 Response body parameters

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

Status code: 500

Table 6-93 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
400	Bad request.
401	Unauthorized.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See **Error Codes**.

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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 6-94 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 6-95 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 6-96 Response body parameters

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

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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

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Table 6-97 Response body parameters

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

Status code: 403

Table 6-98 Response body parameters

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

Status code: 404

Table 6-99 Response body parameters

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

Status code: 500

Table 6-100 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(To Be Discarded)

Function

This API is used to update a specified dependency.

URI

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

Table 6-101 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.

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Request Parameters

Table 6-102 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 6-103 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.

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Parameter	Mandatory	Type	Description
runtime	Yes	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
name	Yes	String	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.

Parameter	Mandatory	Type	Description
description	No	String	Description of the dependency, which can contain a maximum of 512 characters.

Response Parameters

Status code: 200

Table 6-104 Response body parameters

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

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
etag	String	Dependency ID.
size	Long	Dependency size.
name	String	Dependency name.
description	String	Dependency description.
file_name	String	Dependency file name.

Status code: 400

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Table 6-105 Response body parameters

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

Status code: 401

Table 6-106 Response body parameters

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

Status code: 403

Table 6-107 Response body parameters

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

Status code: 404

Table 6-108 Response body parameters

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

Status code: 500

Table 6-109 Response body parameters

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

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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.
403	Forbidden.
404	Not found.
500	Internal server error.

Error Codes

See **Error Codes**.

6.4 Test Events

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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 6-110 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 6-111 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 6-112 Response body parameters

Parameter	Type	Description
count	Integer	Total number of test events.
events	Array of **ListEventsResult** objects	Test event list.

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Parameter	Type	Description
next_marker	Long	Next read location.

Table 6-113 ListEventsResult

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

Status code: 400

Table 6-114 Response body parameters

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

Status code: 401

Table 6-115 Response body parameters

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

Status code: 403

Table 6-116 Response body parameters

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

Status code: 404

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Table 6-117 Response body parameters

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

Status code: 500

Table 6-118 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.

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Status Code	Description
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 6-119 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 6-120 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).

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Table 6-121 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 6-122 Response body parameters

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

Status code: 400

Table 6-123 Response body parameters

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

Status code: 401

Table 6-124 Response body parameters

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

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Status code: 403

Table 6-125 Response body parameters

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

Status code: 404

Table 6-126 Response body parameters

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

Status code: 500

Table 6-127 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" : "eyJrIjoidiJ9"
}
```

Example Responses

Status code: 200

OK

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

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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 6-128 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.

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Request Parameters

Table 6-129 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 6-130 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.
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.

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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

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**.

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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 6-135 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).

Response Parameters

Status code: 200

Table 6-137 Response body parameters

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

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

Status code: 400

Table 6-138 Response body parameters

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

Status code: 401

Table 6-139 Response body parameters

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

Status code: 403

Table 6-140 Response body parameters

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

Status code: 404

Table 6-141 Response body parameters

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

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Status code: 500

Table 6-142 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**.

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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 6-143 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 6-144 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 6-145 Request body parameters

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

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Response Parameters

Status code: 200

Table 6-146 Response body parameters

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

Status code: 400

Table 6-147 Response body parameters

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

Status code: 401

Table 6-148 Response body parameters

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

Status code: 403

Table 6-149 Response body parameters

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

Status code: 404

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Table 6-150 Response body parameters

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

Status code: 500

Table 6-151 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" : "eyJrIjoidiJ9"
}
```

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.

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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 6-152 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 6-153 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

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Table 6-154 Response body parameters

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

Status code: 403

Table 6-155 Response body parameters

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

Status code: 404

Table 6-156 Response body parameters

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

Status code: 500

Table 6-157 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 6-158 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 6-159 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 6-160 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 6-161 Response body parameters

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

Status code: 403

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Table 6-162 Response body parameters

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

Status code: 500

Table 6-163 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"
}
```

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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 6-164 Path Parameters

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

Table 6-165 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Final record queried last time.

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Parameter	Mandatory	Type	Description
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 6-166 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 6-167 Response body parameters

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

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Table 6-168 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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**

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Parameter	Type	Description
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	Address of the function code package in OBS.

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Parameter	Type	Description
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.
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.

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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: • **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 6-169 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. • -1: The function has unlimited instances. • 0: The function is disabled.

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Parameter	Type	Description
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 6-170 Response body parameters

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

Status code: 403

Table 6-171 Response body parameters

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

Status code: 404

Table 6-172 Response body parameters

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

Status code: 500

Table 6-173 Response body parameters

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

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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:xxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
    "resource_id" : "0d075978-5a54-4ee1-8e24-ff5bd070xxxx:test",
    "func_name" : "test",
    "domain_id" : "xx",
    "namespace" : "7aad83af3e8d42e99ac194e8419e2c9b",
    "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" :
"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.

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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 6-174 Path Parameters

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

Request Parameters

Table 6-175 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 6-176 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.

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Parameter	Mandatory	Type	Description
package	Yes	String	Group to which the function belongs. This field is defined to group functions.
runtime	Yes	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Yes	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.

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Parameter	Mandatory	Type	Description
handler	Yes	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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.
gpu_memory	No	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. (Available only in **CN East-Shanghai1**)
gpu_type	No	String	GPU type.(Available only in **CN East-Shanghai1**)

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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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	No	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	No	String	Name of a function file. This parameter is mandatory only when code_type is set to jar or zip.
custom_image	No	**CustomImage** object	Container image. This parameter is mandatory only when code_type 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.

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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.

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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: • **v1** • **v2**
log_config	No	**FuncLogConfig** object	Function log configuration.
network_controller	No	**NetworkControlConfig** 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.

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Parameter	Mandatory	Type	Description
lts_custom_tag	No	Map<String,String>	Custom log tag. You can use these tags to filter function logs in LTS.
enable_lts_log	No	Boolean	Indicates whether to enable the log feature. Default: false. If this parameter is set to true and log_config is not passed when a function is created, FunctionGraph automatically creates a log group and log stream.
user_data_encrypt_kms_key_id	No	String	ID of the KMS master key used to encrypt environment variables.
code_encrypt_kms_key_id	No	String	ID of the KMS master key used to encrypt user code.
domain_names	No	String	Private domain names of the VPC. To call a DNS API to resolve private domain names, specify an agency with the permissions to read DNS resources.

Table 6-177 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_groups	No	Array of strings	Security group.

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Table 6-178 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.
is_public	No	Boolean	Whether the image is a public image.

Table 6-179 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.

Table 6-180 MountConfig

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

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Table 6-181 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 6-182 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 6-183 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.

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Table 6-184 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 6-185 VpcConfig

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

Response Parameters

Status code: 200

Table 6-186 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.
namespace	String	Project ID.
project_name	String	Project name.
package	String	Group to which the function belongs. This field is defined to group functions.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.

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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.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type is set to jar or zip.
code_size	Long	Code size in bytes.
domain_names	String	Private domain name configured for resolution.

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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.
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.

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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: • **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.

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Parameter	Type	Description
custom_image	**CustomImage** object	Container image.
is_bridge_function	Boolean	Whether this is a bridge function.
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 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.
gpu_type	String	GPU type.
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: • **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_auth_in_header	Boolean	Whether to add authentication information to request header for custom image-based functions. (This parameter cannot be modified when creating a function.)
lts_custom_tag	Map<String,String>	Custom log tag. You can use these tags to filter function logs in LTS.

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Parameter	Type	Description
enable_lts_log	Boolean	Indicates whether to enable the log feature.
user_data_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt environment variables.
code_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt user code.

Table 6-187 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 6-188 MountConfig

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

Table 6-189 MountUser

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

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

Table 6-190 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 6-191 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. • -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 6-192 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Table 6-193 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.
is_public	Boolean	Whether the image is a public image.

Table 6-194 NetworkControlConfig

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

Table 6-195 VpcConfig

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

Status code: 400

Table 6-196 Response body parameters

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

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Status code: 401

Table 6-197 Response body parameters

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

Status code: 403

Table 6-198 Response body parameters

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

Status code: 404

Table 6-199 Response body parameters

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

Status code: 500

Table 6-200 Response body parameters

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

Status code: 503

Table 6-201 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
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,
```

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```
  "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:xxxxxxxxx:c3b2459a6d5e4b548e6777e57852692d:function:default:TestCreateFunctionInPythonSdk:lat
est",
  "func_name" : "TestCreateFunctionInPythonSdk",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "namespace" : "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name" : "xxxxxxxxxx",
  "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" :
"1c8610d1870731a818a037f1d2adf3223e8ac351aeb293fb1f8eabd2e9820069a61ed8b5d38182e760adc33a30
7d0e957afc357f415cd8c9c3ff6f0426fd85cd",
  "version" : "latest",
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
  }
}
```

Status code: 400

Bad request.

```
{
  "error_code" : "FSS.0400",
  "error_msg" : "invalid parameter"
}
```

Status code: 401

Unauthorized.

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

Status code: 403

Forbidden.

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

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}

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Table 6-202 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 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:xxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test.

Request Parameters

Table 6-203 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 6-204 Response body parameters

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

Status code: 403

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Table 6-205 Response body parameters

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

Status code: 404

Table 6-206 Response body parameters

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

Status code: 500

Table 6-207 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.

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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 6-208 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 6-209 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

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Table 6-210 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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**

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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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.

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Table 6-211 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 6-212 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. ● -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 6-213 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Status code: 400

Table 6-214 Response body parameters

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

Status code: 401

Table 6-215 Response body parameters

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

Status code: 403

Table 6-216 Response body parameters

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

Status code: 404

Table 6-217 Response body parameters

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

Status code: 500

Table 6-218 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
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:xxxxxxxxxx: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.

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Status Code	Description
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 6-219 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 6-220 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).

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Table 6-221 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. For details about how to modify a custom image-based function, see **Modify the configuration of the custom image-based function**. Enumeration values: • **inline** • **zip** • **obs** • **jar**
code_url	No	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	No	String	Name of a function file. This parameter is mandatory only when code_type 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.
code_encrypt_kms_key_id	No	String	ID of the KMS master key used to encrypt user code.

Table 6-222 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.

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Response Parameters

Status code: 200

Table 6-223 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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**

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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. For details about how to modify a custom image-based function, see **Modify the configuration of the custom image-based function**. Enumeration values: • **inline** • **zip** • **obs** • **jar**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.
code_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt user code.

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Table 6-224 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 6-225 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. ● -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 6-226 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Status code: 400

Table 6-227 Response body parameters

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

Status code: 401

Table 6-228 Response body parameters

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

Status code: 403

Table 6-229 Response body parameters

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

Status code: 404

Table 6-230 Response body parameters

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

Status code: 500

Table 6-231 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
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" : "UEsDBAoAAAAIAPQ1M1gNImPLrAAAAAEBAAAIAAAAaW5kZXgucHlNjtEOgjAMRd/
5igVfxDAlxhjDo0S/wB+YrMgMdMvWGYnh390wEfrU3nvb0xXjG85qLRU
+Sk8NP0UhUb3RltjTaUwkNKwVKDuwbA0vQMrDAhK8KSsTFsoCeYvsMw2xUkeCvKu0hLRk
+6LIZ0u5s3BwPFwwUEEG/yo6B4vEXcshyBG
+lb437kfNFpEWhATrQmqGTkYVH0Pit8FEdCqM6VQtSGncxYPpPz5O3fgFUEsBAh4DCgAAAAgA9DUzWA
0iY8usAAAAAQEAAAgAAAAAAAAAAAAAAPMCAAAAAGluZGV4LnB5UEsFBgAAAAABAAEANgAAANIAA
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" : "UEsDBAoAAAAIAPQ1M1gNImPLrAAAAAEBAAAIAAAAaW5kZXgucHlNjtEOgjAMRd/
5igVfxDAlxhjDo0S/wB+YrMgMdMvWGYnh390wEfrU3nvb0xXjG85qLRU
+Sk8NP0UhUb3RltjTaUwkNKwVKDuwbA0vQMrDAhK8KSsTFsoCeYvsMw2xUkeCvKu0hLRk
+6LIZ0u5s3BwPFwwUEEG/yo6B4vEXcshyBG
+lb437kfNFpEWhATrQmqGTkYVH0Pit8FEdCqM6VQtSGncxYPpPz5O3fgFUEsBAh4DCgAAAAgA9DUzWA
0iY8usAAAAAQEAAAgAAAAAAAAAAAAAAPMCAAAAAGluZGV4LnB5UEsFBgAAAAABAAEANgAAANIAA
AAAAA=="
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "func_urn" : "urn:fss:xxxxxxxxxxxx: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" :
"aW1wb3J0IGpzb24KZGVmIGhhbmRsZXIoZXZlbnQsIGNvbnRleHQpOgogICAgb3V0cHV0ID0gJ0hlbGxvIE1zZyB
mb3IgbW9kaWZ5OiAnICsganNvbi5kdW1wcyhldmVudCkKICAgIGFrID0gY29udGV4dC5nZXRBY2Nlc3NLZXkoK
QogICAgc2sgPSBjb250ZXh0LmdldFNlY3JldEtleSgpCiAgICB0b2tlbiA9IGNvbnQgJ2FrOicgKyBhawogICAg
cHJpbnQgJ2FrOicgKyBhawogICAgcHJpbnQgJ3NrOicgKyBzawogICAgcHJpbnQgJ3Rva2VuOicgKyB0b2tlbgogIC
AgcmV0dXJuIG91dHB1dAo+C0NLTqLwKImNCTgBMSn5SC+UbkysuKp1Bj7JQqxds+5p7La/ew4RBTp8IusZ/
```

```
k2qmqvCDdoBY0ywYCl
+RgctnLbTS6hLLj9sNyKoVXiXb1BLAQIeAwoAAAAIAAhYOU8ssPQsgwAAALYAAAAIAAAAAAAAAAAAAADzAgA
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 6-232 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 6-233 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 6-234 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.

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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.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.

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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.
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: • **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.

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Parameter	Type	Description
depend_version_list	Array of strings	Dependency version IDs.
strategy_config	**StrategyConfig** object	Function policy 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.
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: • **v1** • **v2**
enable_cloud_debug	String	Whether to enable cloud debugging to adapt to the CloudDebug scenario. (discarded)

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Parameter	Type	Description
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.
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)

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Parameter	Type	Description
peering_cidr	String	VPC CIDR block. Enter the VPC CIDR block used in the code to check whether it conflicts with FunctionGraph's VPC CIDR block. Separate blocks with semicolons (;) and enter a maximum of 5 blocks.
lts_custom_tag	Map<String,String>	Custom log tag. You can use these tags to filter function logs in LTS.
enable_lts_log	Boolean	Indicates whether to enable the log feature.
user_data_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt environment variables.
code_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt user code.

Table 6-235 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 6-236 MountConfig

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

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Table 6-237 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 6-238 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 6-239 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. • -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 6-240 Dependency

Parameter	Type	Description
id	String	Dependency version ID.
owner	String	Domain ID of the dependency owner.

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Parameter	Type	Description
link	String	URL of the dependency on OBS.
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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.

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Parameter	Type	Description
last_modified	Integer	Time when the function was last updated.

Table 6-241 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.
is_public	Boolean	Whether the image is a public image.

Table 6-242 NetworkControlConfig

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

Table 6-243 VpcConfig

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

Status code: 400

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Table 6-244 Response body parameters

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

Status code: 401

Table 6-245 Response body parameters

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

Status code: 403

Table 6-246 Response body parameters

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

Status code: 404

Table 6-247 Response body parameters

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

Status code: 500

Table 6-248 Response body parameters

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

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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:xxxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test:latest",
  "func_name" : "test",
  "domain_id" : "14ee2e3501124efcbca7998baa24xxxx",
  "namespace" : "46b6f338fc3445b8846c71dfb1fbxxxx",
  "project_name" : "xxxxxxxxx",
  "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" :
"faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9af322c55dabeb16565c386e402413458e6068",
  "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.

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Status Code	Description
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 6-249 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 6-250 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).

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Table 6-251 Request body parameters

Parameter	Mandatory	Type	Description
func_name	Yes	String	Function name.
runtime	Yes	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Yes	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.

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Parameter	Mandatory	Type	Description
handler	Yes	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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.
gpu_memory	No	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. (Available only in **CN East-Shanghai1**)
gpu_type	No	String	GPU type.(Available only in **CN East-Shanghai1**)

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Parameter	Mandatory	Type	Description
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.
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.

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Parameter	Mandatory	Type	Description
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.
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: • **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.

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Parameter	Mandatory	Type	Description
network_controller	No	NetworkControlConfig 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.
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.

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Parameter	Mandatory	Type	Description
peering_cidr	No	String	VPC CIDR block. You can enter the VPC CIDR block used in the code to check whether it conflicts with FunctionGraph's VPC CIDR block. The blocks are separated by semicolons (;) and the number of blocks cannot exceed 5.
lts_custom_tag	No	Map<String,String>	Custom log tag. You can use these tags to filter function logs in LTS.
enable_lts_log	No	Boolean	Indicates whether to enable the log feature.
user_data_encrypt_kms_key_id	No	String	ID of the KMS master key used to encrypt environment variables.

Table 6-252 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_groups	No	Array of strings	Security group.

Table 6-253 MountConfig

Parameter	Mandatory	Type	Description
mount_user	Yes	**MountUser** object	User information.

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Parameter	Mandatory	Type	Description
func_mounts	Yes	Array of **FuncMount** objects	Mounted resources.

Table 6-254 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 6-255 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.

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Table 6-256 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. • -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 6-257 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.
is_public	No	Boolean	Whether the image is a public image.

Table 6-258 FuncLogConfig

Parameter	Mandatory	Type	Description
group_name	No	String	Name of the log group bound to the function.

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Parameter	Mandatory	Type	Description
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 6-259 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 6-260 VpcConfig

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

Response Parameters

Status code: 200

Table 6-261 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.
domain_id	String	Domain ID.
namespace	String	Project ID.

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Parameter	Type	Description
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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.

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Parameter	Type	Description
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.

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Parameter	Type	Description
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.
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.

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Parameter	Type	Description
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: • **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.
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.

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Parameter	Type	Description
log_stream_id	String	Log stream ID.
type	String	v2 indicates an official version, and v1 indicates a deprecated version. Enumeration values: • **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_auth_in_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.
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)
peering_cidr	String	VPC CIDR block. Enter the VPC CIDR block used in the code to check whether it conflicts with FunctionGraph's VPC CIDR block. Seperate blocks with semicolons (;) and enter a maximum of 5 blocks.
lts_custom_tag	Map<String,String>	Custom log tag. You can use these tags to filter function logs in LTS.
enable_lts_log	Boolean	Indicates whether to enable the log feature.
user_data_encrypt_kms_key_id	String	ID of the KMS master key used to encrypt environment variables.

Table 6-262 FuncVpc

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

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Parameter	Type	Description
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 6-263 MountConfig

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

Table 6-264 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 6-265 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.

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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 6-266 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. • -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 6-267 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Table 6-268 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.
is_public	Boolean	Whether the image is a public image.

Status code: 400

Table 6-269 Response body parameters

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

Status code: 401

Table 6-270 Response body parameters

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

Status code: 403

Table 6-271 Response body parameters

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

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Status code: 404

Table 6-272 Response body parameters

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

Status code: 500

Table 6-273 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
}
```

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- Modify the configuration of the custom image-based function.

```
{
  "func_name": "test_function",
  "handler": "-",
  "memory_size": 128,
  "runtime": "Custom Image",
  "timeout": 3,
  "xrole": "xxx",
  "custom_image": {
      "enabled": true,
      "image": "swr.xxx.example.com/xxx/xxx:xxx",
      "working_dir": "/"
  }
}
```

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",
  "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,
  "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" :
"faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9
af322c55dabeb16565c386e402413458e6068",
  "version" : "latest",
  "ephemeral_storage" : 512,
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
  }
}
```

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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 6-274 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.

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Request Parameters

Table 6-275 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 6-276 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 6-277 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.

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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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.

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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.
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.
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.

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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: • **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.
domain_names	String	Private domain name configured for resolution.
is_return_stream	Boolean	Whether to return stream data. (discarded)
enable_auth_in_header	Boolean	Whether to add authentication information to request header for custom image-based functions.

Table 6-278 FuncVpc

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

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Parameter	Type	Description
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 6-279 MountConfig

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

Table 6-280 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 6-281 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.

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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 6-282 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. • -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 6-283 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Status code: 400

Table 6-284 Response body parameters

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

Status code: 401

Table 6-285 Response body parameters

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

Status code: 403

Table 6-286 Response body parameters

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

Status code: 404

Table 6-287 Response body parameters

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

Status code: 500

Table 6-288 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
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:xxxxxxxx: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.

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Status Code	Description
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 6-289 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 6-290 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).

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Response Parameters

Status code: 200

Table 6-291 Response body parameters

Parameter	Type	Description
tags	Array of **KvItem** objects	Tag list.
sys_tags	Array of **KvItem** objects	System tags.

Table 6-292 KvItem

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400

Table 6-293 Response body parameters

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

Status code: 401

Table 6-294 Response body parameters

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

Status code: 403

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Table 6-295 Response body parameters

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

Status code: 500

Table 6-296 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.

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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 6-297 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: • **enable** • **disable**

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).

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Response Parameters

Status code: 400

Table 6-299 Response body parameters

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

Status code: 401

Table 6-300 Response body parameters

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

Status code: 403

Table 6-301 Response body parameters

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

Status code: 404

Table 6-302 Response body parameters

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

Status code: 500

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Table 6-303 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
200	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.

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URI

GET /v2/{project_id}/fgs/functions/{function_urn}/servicebridge/relation

Table 6-304 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 6-305 Query Parameters

Parameter	Mandatory	Type	Description
type	No	String	ServiceBridge type.

Request Parameters

Table 6-306 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 6-307 Response body parameters

Parameter	Type	Description
[items]	Array of **ListFunctionResult** objects	Bridge functions bound to the function.

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Table 6-308 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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**

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Parameter	Type	Description
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.

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Parameter	Type	Description
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.
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.

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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: • **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 6-309 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. • -1: The function has unlimited instances. • 0: The function is disabled.

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Parameter	Type	Description
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 6-310 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.
error_msg	String	Error message.

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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:xxxxxxxxx:7aad83af3e8d42e99ac194e8419e2c9b:function:default:test",
  "func_name" : "bridge-test",
  "domain_id" : "cff01_hk",
  "namespace" : "7aad83af3e8d42e99ac194e8419e2c9b",
  "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" :
"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
} ]
```

Status Codes

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

Error Codes

See **Error Codes**.

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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 6-314 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: • **state** • **enableSnapshot**

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

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Table 6-316 Response body parameters

Parameter	Type	Description
state	String	Snapshot status.
code	String	Snapshot response code.

Status code: 400

Table 6-317 Response body parameters

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

Status code: 401

Table 6-318 Response body parameters

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

Status code: 403

Table 6-319 Response body parameters

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

Status code: 404

Table 6-320 Response body parameters

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

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Status code: 500

Table 6-321 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
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**.

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6.6.13 Querying Resource Tags

Function

This API is used to query resource tags.

URI

GET /v2/{project_id}/{resource_type}/tags

Table 6-322 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.

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).

Response Parameters

Status code: 200

Table 6-324 Response body parameters

Parameter	Type	Description
tags	Array of **TagItem** objects	Tag list.

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Parameter	Type	Description
sys_tags	Array of **TagItem** objects	System tags.

Table 6-325 TagItem

Parameter	Type	Description
key	String	Key.
values	Array of strings	Value.

Status code: 400

Table 6-326 Response body parameters

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

Status code: 401

Table 6-327 Response body parameters

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

Status code: 403

Table 6-328 Response body parameters

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

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Status code: 500

Table 6-329 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
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**.

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6.6.14 Querying Resources

Function

This API is used to query resources.

URI

POST /v2/{project_id}/{resource_type}/resource-instances/{action}

Table 6-330 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: • **filter** • **count**

Request Parameters

Table 6-331 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 6-332 Request body parameters

Parameter	Mandatory	Type	Description
without_any_tag	No	Boolean	Whether to use tag-based filtering.

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Parameter	Mandatory	Type	Description
limit	No	String	Number of records displayed on each page.
offset	No	String	Query offset.
action	No	String	Query an action. Enumeration values: • **count** • **filter**
matches	No	Array of **KvItem** objects	Query a key-value pair.
sys_tags	No	Array of **TagItem** objects	Query system tags.

Table 6-333 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Table 6-334 TagItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
values	No	Array of strings	Value.

Response Parameters

Status code: 200

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Table 6-335 Response body parameters

Parameter	Type	Description
resources	Array of **ListEnterpriseResourceResult** objects	Enterprise projects.
total_count	Long	Number of resources.

Table 6-336 ListEnterpriseResourceResult

Parameter	Type	Description
resource_id	String	Resource ID.
resource_detail	**ListEnterpriseResourceDetail** object	Function details.
tags	Array of **KvItem** objects	Tag list.
sys_tags	Array of **KvItem** objects	System tags.
resource_name	String	Resource name.

Table 6-337 ListEnterpriseResourceDetail

Parameter	Type	Description
detailId	String	Function URN.

Table 6-338 KvItem

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400

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Table 6-339 Response body parameters

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

Status code: 401

Table 6-340 Response body parameters

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

Status code: 403

Table 6-341 Response body parameters

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

Status code: 404

Table 6-342 Response body parameters

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

Status code: 500

Table 6-343 Response body parameters

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

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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}:xxxx: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**.

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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 6-344 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 6-345 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 6-346 Request body parameters

Parameter	Mandatory	Type	Description
action	No	String	Action name. Enumeration values: • **create** • **delete**

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Parameter	Mandatory	Type	Description
tags	No	Array of **KvItem** objects	Tag list.
sys_tags	No	Array of **KvItem** objects	System tags.

Table 6-347 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Response Parameters

Status code: 400

Table 6-348 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

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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 6-349 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 6-350 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).

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Table 6-351 Request body parameters

Parameter	Mandatory	Type	Description
action	No	String	Action name. Enumeration values: • **create** • **delete**
tags	No	Array of **KvItem** objects	Tag list.
sys_tags	No	Array of **KvItem** objects	System tags.

Table 6-352 KvItem

Parameter	Mandatory	Type	Description
key	No	String	Key.
value	No	String	Value.

Response Parameters

Status code: 400

Table 6-353 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"
  } ],
```

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```
 "action" : "create"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content
400	Bad request.

Error Codes

See **Error Codes**.

6.6.17 Creating a VPC Endpoint

Function

This API is used to create a VPC endpoint. (Currently, this API is supported only in CN North-Beijing4 and CN East-Shanghai1.)

URI

POST /v2/{project_id}/fgs/vpc-endpoint

Table 6-354 Path Parameters

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

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Request Parameters

Table 6-355 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 6-356 Request body parameters

Parameter	Mandatory	Type	Description
flavor	No	String	Endpoint specifications. By default, large specifications are used.
xrole	No	String	Agency used to create the endpoint.
vpc_id	Yes	String	ID of the VPC to connect to the endpoint.
subnet_id	Yes	String	ID of the subnet to connect to the endpoint.

Response Parameters

Status code: 200

Table 6-357 Response body parameters

Parameter	Type	Description
endpoints	Array of strings	IP addresses.
address	String	Domain name.

Status code: 400

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Table 6-358 Response body parameters

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

Status code: 401

Table 6-359 Response body parameters

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

Status code: 403

Table 6-360 Response body parameters

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

Status code: 404

Table 6-361 Response body parameters

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

Status code: 500

Table 6-362 Response body parameters

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

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Example Requests

Use an agency to create a VPC endpoint with VPC a938xxxx and subnet a4a1xxxx.

```
POST https://{Endpoint}/v2/{project_id}/fgs/vpc-endpoint

{
  "vpc_id" : "a938xxxx-7xxx-4xxx-bxxx-cee915xxxxxx",
  "subnet_id" : "a4a1xxxx-9xxx-4xxx-8xxx-bb46f7xxxxxx",
  "flavor" : "default",
  "xrole" : "xxx"
}
```

Example Responses

Status code: 200

ok

```
{
  "endpoints" : [ ],
  "address" : "https://xx"
}
```

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**.

6.6.18 Deleting a VPC Endpoint

Function

This API is used to delete a VPC endpoint. (Currently, this API is supported only in CN North-Beijing4 and CN East-Shanghai1.)

URI

DELETE /v2/{project_id}/fgs/vpc-endpoint/{vpc_id}/{subnet_id}

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Table 6-363 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see **Obtaining a Project ID**.
vpc_id	Yes	String	vpc ID
subnet_id	Yes	String	Subnet ID.

Request Parameters

Table 6-364 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 6-365 Response body parameters

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

Example Requests

Delete a VPC endpoint.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/vpc-endpoint/{vpc_id}/{subnet_id}
```

Example Responses

None

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Status Codes

Status Code	Description
204	No Content
400	Bad request.

Error Codes

See **Error Codes**.

6.6.19 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 6-366 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 6-367 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).

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Response Parameters

Status code: 500

Table 6-368 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**.

6.6.20 Querying the Available ServiceBridge Version(Discarded)

Function

This API is used to query the available ServiceBridge version.

URI

GET /v2/{project_id}/fgs/servicebridge/version

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Table 6-369 Path Parameters

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

Table 6-370 Query Parameters

Parameter	Mandatory	Type	Description
type	Yes	String	ServiceBridge type. The value can be rds, mqs, or cache.

Request Parameters

Table 6-371 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 6-372 Response body parameters

Parameter	Type	Description
[items]	Array of **ServiceBridge Version** objects	

Table 6-373 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 6-374 Response body parameters

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

Status code: 401

Table 6-375 Response body parameters

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

Status code: 403

Table 6-376 Response body parameters

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

Status code: 500

Table 6-377 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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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.

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URI

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

Table 6-378 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 6-379 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 6-380 Response body parameters

Parameter	Type	Description
[items]	Array of **ListVersionAliasResult** objects	Function versions and aliases.

Table 6-381 ListVersionAliasResult

Parameter	Type	Description
name	String	Alias to be queried.

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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 6-382 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

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Table 6-385 Response body parameters

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

Status code: 503

Table 6-386 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.

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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 6-387 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 6-388 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).

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Table 6-389 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 6-390 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: • **and** • **or**

Table 6-391 VersionStrategyRules

Parameter	Mandatory	Type	Description
rule_type	No	String	Parameter type. Enumeration values: • **Header**

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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: • **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 6-392 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.

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Table 6-393 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: • **and** • **or**

Table 6-394 VersionStrategyRules

Parameter	Type	Description
rule_type	String	Parameter type. Enumeration values: • **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: • **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 6-395 Response body parameters

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

Status code: 401

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Table 6-396 Response body parameters

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

Status code: 403

Table 6-397 Response body parameters

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

Status code: 404

Table 6-398 Response body parameters

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

Status code: 500

Table 6-399 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}:46b6f338fc3445b8846c71dfb1fbxxxx:function:default:xxxxx:!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.

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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 6-400 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 6-401 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).

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Response Parameters

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

Delete the alias of a function version.

```
DELETE https://{Endpoint}/v2/{project_id}/fgs/functions/{function_urn}/aliases/{alias_name}
```

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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 6-406 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.
alias_name	Yes	String	Alias to be queried.

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Request Parameters

Table 6-407 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 6-408 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 6-409 VersionStrategy

Parameter	Type	Description
rules	Array of **VersionStrategyRules** objects	Rules.

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Parameter	Type	Description
combine_type	String	Rule aggregation mode. and: All rules are met. or: Any rule is met. Enumeration values: • **and** • **or**

Table 6-410 VersionStrategyRules

Parameter	Type	Description
rule_type	String	Parameter type. Enumeration values: • **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: • **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 6-411 Response body parameters

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

Status code: 403

Table 6-412 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.

Status code: 404

Table 6-413 Response body parameters

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

Status code: 500

Table 6-414 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:xxxxxxxxxx: 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 6-415 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.

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Request Parameters

Table 6-416 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 6-417 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 6-418 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: • **and** • **or**

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Table 6-419 VersionStrategyRules

Parameter	Mandatory	Type	Description
rule_type	No	String	Parameter type. Enumeration values: • **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: • **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 6-420 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 6-421 Response body parameters

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

Status code: 401

Table 6-422 Response body parameters

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

Status code: 403

Table 6-423 Response body parameters

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

Status code: 404

Table 6-424 Response body parameters

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

Status code: 500

Table 6-425 Response body parameters

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

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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:xxxxxxxx: 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"
}
```

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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 6-426 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 6-427 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.

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Request Parameters

Table 6-428 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 6-429 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 6-430 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.

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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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.

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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.
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_num	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.

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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.
long_time	Boolean	Whether long-term running is supported.
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 6-431 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. • -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.

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Table 6-432 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 6-433 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 6-434 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**

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Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. • 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 6-435 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.
is_public	Boolean	Whether the image is a public image.

Status code: 400

Table 6-436 Response body parameters

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

Status code: 401

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Table 6-437 Response body parameters

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

Status code: 403

Table 6-438 Response body parameters

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

Status code: 404

Table 6-439 Response body parameters

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

Status code: 500

Table 6-440 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:xxxxxxxxxxx: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" :
"faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9af322c55dabeb16565c386e402413458e6068",
    "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**.

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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 6-441 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 6-442 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 6-443 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

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Table 6-444 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 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**

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Parameter	Type	Description
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type is set to jar or zip.
code_size	Long	Code size in bytes.

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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, 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.
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.

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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: • **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.

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Table 6-445 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 6-446 MountConfig

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

Table 6-447 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 6-448 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.

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Parameter	Type	Description
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 6-449 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. • -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 6-450 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
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	Integer	Time when the function was last updated.

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Table 6-451 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 6-452 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 6-453 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**

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Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. • 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 6-454 Response body parameters

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

Status code: 401

Table 6-455 Response body parameters

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

Status code: 403

Table 6-456 Response body parameters

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

Status code: 404

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Table 6-457 Response body parameters

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

Status code: 500

Table 6-458 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:xxxxxxxxx: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" : "inline.js",
  "code_size" : 272,
  "digest" :
"faa825575c45437cddd4e369bea69893bcbe195d478178462ad90984fe72993f3f59d15f41c5373f807f3e05fb9af322c55dabeb16565c386e402413458e6068",
  "version" : "latest",
  "image_name" : "latest-191025153727@zehht",
  "last_modified" : "2019-10-25 15:37:27",
  "strategy_config" : {
    "concurrency" : 0
```

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```
  }
}
```

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 6-459 Path Parameters

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

Table 6-460 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 6-461 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 6-462 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.

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Table 6-463 FunctionMetric

Parameter	Type	Description
key	String	Function URN.
value	Integer	Metric value.

Status code: 400

Table 6-464 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

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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 6-465 Path Parameters

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

Table 6-466 Query Parameters

Parameter	Mandatory	Type	Description
filter	Yes	String	Parameter filter. • monitor_data: Query detailed statistics. • monthly_report: Query monthly statistics. Enumeration values: • **monitor_data** • **monthly_report**
period	No	String	The unit is minute. This parameter must be used together with the filter parameter metric.

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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. • 0: current month • 1: last month • 2: last three months • 3: 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 6-467 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

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Table 6-468 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 6-469 MonthUsed

Parameter	Type	Description
date	String	Date.
value	Number	Usage.

Table 6-470 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.

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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 6-471 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 6-472 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 6-473 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 6-474 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.

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Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-475 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.

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Table 6-476 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
  } ],
```

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```
 "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 6-477 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 6-478 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 6-479 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

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Table 6-480 Response body parameters

Parameter	Type	Description
instanceNum	Array of **SlaReportsValue** objects	Elastic instance metrics.
reservedInstanceNum	Array of **SlaReportsValue** objects	Reserved instance metrics.

Table 6-481 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 6-482 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,
```

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```
    "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 6-483 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)

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Request Parameters

Table 6-484 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 6-485 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.

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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 6-486 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 6-487 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 6-488 Path Parameters

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

Request Parameters

Table 6-489 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 6-490 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 6-491 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

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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 6-492 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 6-493 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
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 6-495 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

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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 the Function of Reporting Logs to LTS

Function

This API is used to enable log reporting to LTS.

URI

POST /v2/{project_id}/fgs/functions/enable-lts-logs

Table 6-496 Path parameters

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

Request Parameters

Table 6-497 Request header parameters

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

Response Parameters

Status code: 429

Table 6-498 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: 200

None

Status code: 429

Too many requests.

```
{
  "error_code" : "FSS.0429",
  "error_msg" : "api is busy now"
}
```

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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 6-499 Path Parameters

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

Request Parameters

Table 6-500 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

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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 6-501 Path Parameters

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

Table 6-502 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**
maxitems	No	String	Maximum number of templates obtained in each query.
ispublic	No	String	Indicates whether the template is public. To query the public templates of a function, set this parameter to true.
runtime	No	String	Runtime template.
scene	No	String	Scenario template.
service	No	String	Cloud service template.

Request Parameters

Table 6-503 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

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Table 6-504 Response body parameters

Parameter	Type	Description
func_templates	Array of **ShowFunctionTemplateResponseBody** objects	Function templates.
next_marker	Integer	Next read location.

Table 6-505 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.

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Parameter	Type	Description
service	String	Cloud service associated with the template.

Table 6-506 TriggerMetadataList

Parameter	Type	Description
trigger_name	String	Trigger name.
trigger_type	String	Trigger type.
event_type	String	Event type.
event_data	String	Event data.

Table 6-507 TempDetail

Parameter	Type	Description
input	String	Template input.
output	String	Template output.
warning	String	Warning.

Status code: 400

Table 6-508 Response body parameters

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

Status code: 401

Table 6-509 Response body parameters

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

Status code: 403

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Table 6-510 Response body parameters

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

Status code: 500

Table 6-511 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
}
```

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Status Codes

Status Code	Description
200	OK
400	Bad request.
401	Unauthorized.
403	Forbidden.
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 6-512 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 6-513 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.

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Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format).

Response Parameters

Status code: 200

Table 6-514 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.

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Table 6-515 TriggerMetadataList

Parameter	Type	Description
trigger_name	String	Trigger name.
trigger_type	String	Trigger type.
event_type	String	Event type.
event_data	String	Event data.

Table 6-516 TempDetail

Parameter	Type	Description
input	String	Template input.
output	String	Template output.
warning	String	Warning.

Status code: 400

Table 6-517 Response body parameters

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

Status code: 401

Table 6-518 Response body parameters

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

Status code: 403

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Table 6-519 Response body parameters

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

Status code: 404

Table 6-520 Response body parameters

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

Status code: 500

Table 6-521 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" : {
```

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```
    "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 6-522 Path Parameters

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

Table 6-523 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 6-524 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

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Table 6-525 Response body parameters

Parameter	Type	Description
reserved_instances	Array of **ReservedInstanceConfigs** objects	Reserved instances.
page_info	**PageInfo** object	Reading location info.
count	Long	Number of functions.

Table 6-526 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	Reserved instance policy configuration.

Table 6-527 TacticsConfig

Parameter	Type	Description
cron_configs	Array of **CronConfig** objects	Scheduled configuration list.
metric_configs	Array of **MetricConfig** objects	Flow control configuration list.

Table 6-528 CronConfig

Parameter	Type	Description
name	String	Scheduled configuration name.
cron	String	Cron expression.

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Parameter	Type	Description
count	Integer	Number of started reserved instances.
start_time	Long	Start time (epoch format).
expired_time	Long	Expiry time (epoch format).

Table 6-529 MetricConfig

Parameter	Type	Description
name	String	Flow control configuration name.
type	String	Flow control type. Currently, only reserved instance utilization is supported. Enumeration values: • **Concurrency**
threshold	Integer	Flow control threshold.
min	Integer	Minimum value.

Table 6-530 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 6-531 Response body parameters

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

Status code: 401

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Table 6-532 Response body parameters

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

Status code: 403

Table 6-533 Response body parameters

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

Status code: 404

Table 6-534 Response body parameters

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

Status code: 500

Table 6-535 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

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```
{
   "reserved_instances": [
      {
         "function_urn": "urn:fss:{region}:46b6f338fc3445b8846c71dfb1fbxxxx:function:default:xxxxx: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**.

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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 6-536 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 6-537 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 6-538 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	Reserved instance policy configuration.

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Table 6-539 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 6-540 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 6-541 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: • **Concurrency**
threshold	No	Integer	Flow control threshold.
min	No	Integer	Minimum value.

Response Parameters

Status code: 200

Table 6-542 Response body parameters

Parameter	Type	Description
count	Integer	Number of reserved instances.
idle_mode	Boolean	Whether to enable idle mode.
tactics_config	**TacticsConfig** object	Reserved instance policy configuration.

Table 6-543 TacticsConfig

Parameter	Type	Description
cron_configs	Array of **CronConfig** objects	Scheduled configuration list.
metric_configs	Array of **MetricConfig** objects	Flow control configuration list.

Table 6-544 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 6-545 MetricConfig

Parameter	Type	Description
name	String	Flow control configuration name.
type	String	Flow control type. Currently, only reserved instance utilization is supported. Enumeration values: • **Concurrency**
threshold	Integer	Flow control threshold.
min	Integer	Minimum value.

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Status code: 400

Table 6-546 Response body parameters

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

Status code: 401

Table 6-547 Response body parameters

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

Status code: 403

Table 6-548 Response body parameters

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

Status code: 404

Table 6-549 Response body parameters

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

Status code: 500

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Table 6-550 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.

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URI

GET /v2/{project_id}/fgs/functions/reservedinstances

Table 6-551 Path Parameters

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

Table 6-552 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 6-553 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).

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Response Parameters

Status code: 200

Table 6-554 Response body parameters

Parameter	Type	Description
reservedinstances	Array of **FuncReservedInstance** objects	Reserved instances.
page_info	**PageInfo** object	Reading location info.
count	Long	Number of functions.

Table 6-555 FuncReservedInstance

Parameter	Type	Description
func_urn	String	Function URN.
count	Long	Number of reserved instances.

Table 6-556 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 6-557 Response body parameters

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

Status code: 401

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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

Query reserved instances.

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

Example Responses

Status code: 200

OK

```
{
  "reservedinstances" : [ {
    "func_urn" : "urn:fss:xxxxx: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 6-562 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 6-563 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 6-564 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).

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Response Parameters

Status code: 404

Table 6-565 Response body parameters

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

Status code: 500

Table 6-566 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.

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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 6-567 Path Parameters

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

Request Parameters

Table 6-568 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 6-569 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.

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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 6-570 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.

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Parameter	Type	Description
runtime	String	Environment for executing a function. Options: Python2.7 Python 3.6 Python 3.9 Python 3.10 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 Node.js 16.17 Node.js 18.15 C# (.NET Core 2.1) C# (.NET Core 3.1) Custom PHP 7.3 HTTP Custom image-based functions Cangjie1.0 Enumeration values: • **Java8** • **Java11** • **Node.js6.10** • **Node.js8.10** • **Node.js10.16** • **Node.js12.13** • **Node.js14.18** • **Node.js16.17** • **Node.js18.15** • **Python2.7** • **Python3.6** • **Python3.10** • **Go1.x** • **C#(.NET Core 2.1)** • **C#(.NET Core 3.1)** • **Custom** • **PHP7.3** • **Python3.9** • **http** • **Custom Image** • **Cangjie1.0**
timeout	Integer	Maximum duration the function can be executed. Value range: 3s–259,200s.
handler	String	Handler of the function. It must be in the format of "xx.xx" and contain a period (.). For example, for Node.js function myfunction.handler, the file name is myfunction.js, and the handler function is handler. Minimum length: 3 character. Maximum length: 128 characters.

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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.
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: • **inline** • **zip** • **obs** • **jar** • **Custom-Image-Swr**
code_url	String	If code_type is set to obs, enter the OBS URL of the function code package. If code_type is not set to obs, leave this parameter blank.
code_filename	String	Name of a function file. This parameter is mandatory only when code_type 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.

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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, 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.
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.

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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.

Table 6-571 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 6-572 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. • -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.

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Status code: 409

Table 6-573 Response body parameters

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

Status code: 500

Table 6-574 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" : "xxxxxxxxxxxxxxxxxxxxx"
}
```

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",
```

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```
  "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}

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Table 6-575 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 descriptions.

Request Parameters

Table 6-576 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

Response Parameters

Status code: 400

Table 6-577 Response body parameters

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

Status code: 401

Table 6-578 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.

Status code: 403

Table 6-579 Response body parameters

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

Status code: **404**

Table 6-580 Response body parameters

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

Status code: 500

Table 6-581 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

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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**.

6.13.2 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 6-582 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 descriptions.

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Request Parameters

Table 6-583 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

Response Parameters

Status code: 200

Table 6-584 Response body parameters

Parameter	Type	Description
[items]	Array of **ListFunctionTriggerResult** objects	Response body for querying function triggers.

Table 6-585 ListFunctionTriggerResult

Parameter	Type	Description
trigger_id	String	Trigger ID.

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Parameter	Type	Description
trigger_type_code	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS) (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS) (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS) (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka) (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok, AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ) (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok)

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Parameter	Type	Description
		• EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_status	String	Trigger status. • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. Enumerated values: • **ACTIVE** • **DISABLED**
event_data	**TriggerEventDataResponseBody** object	Trigger source event.
last_updated_time	String	Time when the trigger was last updated.
created_time	String	Time when the trigger was created.

Table 6-586 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). • 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. Enumerated values: • **Rate** • **Cron**
schedule	String	Triggering rule. (timer trigger parameter). • When the trigger type is Rate, the scheduled rule is used. • When the trigger type is Cron, the Cron expression is used.

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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	API type (APIG trigger parameter). • **1**: public • **2**: private
path	String	Path of the API (APIG trigger parameter).
protocol	String	Request protocol of the API (APIG trigger parameter). Enumerated values: • **HTTP** • **HTTPS**
req_method	String	Request method of the API (APIG trigger parameter). Enumerated values: • **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).

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Parameter	Type	Description
match_mode	String	Matching mode of the API (APIG trigger parameter). • **SWA**: prefix match • **NORMAL**: exact match Enumerated values: • **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 is published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).
auth	String	API authentication mode (APIG trigger parameter). • **IAM**: IAM authentication. This mode grants access permissions to IAM users only and is of medium security. • **APP**: AppKey and AppSecret authentication. This mode is of high security and is recommended. • **NONE**: Authentication is not required. All users can access this API. This mode is not recommended. Enumerated values: • **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 length: **1** Maximum length: **255**
backend_type	String	API backend type (APIG trigger parameter). Enumerated values: • **FUNCTION**

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Parameter	Type	Description
instance_id	String	Instance ID. This parameter is mandatory for DDS, RabbitMQ, and RocketMQ and Kafka triggers. • APIG trigger: APIG gateway ID. • DDS trigger: DDS instance ID. • Kafka trigger: Kafka instance ID. • RabbitMQ trigger: RabbitMQ instance ID. • RocketMQ trigger: RocketMQ 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	Database password (DDS trigger parameter).
db_user	String	Database username (DDS trigger parameter).
instance_addrs	Array of strings	Database instance address (DDS trigger parameter).
mode	String	Database instance type (DDS trigger parameter). • Sharding: cluster instance • ReplicaSet: replica set instance • Single: single node instance
batch_size	Integer	Batch size, that is, the maximum amount of data that can be processed at a time. This parameter is mandatory for DIS, DDS, Kafka, RocketMQ, and RabbitMQ triggers. • DDS trigger: Enter a value from 1 to 10,000. • DIS trigger: Enter a value from 1 to 10,000. • Kafka trigger: Enter a value from 1 to 1,000. • RabbitMQ trigger: Enter a value from 1 to 1,000. • RocketMQ trigger: Enter a value from 1 to 1,000.

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Parameter	Type	Description
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	Starting position (DIS trigger parameter). • **TRIM_HORIZON**: Data is read from the earliest valid records that are 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. Enumerated values: • **TRIM_HORIZON** • **LATEST**
polling_unit	String	Pull period unit (DIS trigger parameter). • **s**: second • **ms** indicates the millisecond. Enumerated values: • **s** • **ms**
max_fetch_bytes	Integer	Max. fetch bytes (DIS trigger parameter). Minimum value: **0** Maximum value: **4194304**
is_serial	String	Serial data processing (DIS trigger parameter): 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. Enumerated values: • **true** • **false**
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).

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Parameter	Type	Description
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 length: **1** Maximum length: **64**
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum length: **0** Maximum length: **1024**
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum length: **0** Maximum length: **1024**
events	Array of strings	Events (OBS trigger parameter). • **ObjectCreated**: all kinds of object creation operations, including PUT, POST, COPY, and part assembling • **Put**: object upload using PUT • **Post**: object upload using POST • **Copy**: object copying using COPY • **CompleteMultipartUpload**: Assemble parts in a multipart upload. • **ObjectRemoved**: deleting objects • **Delete**: object deletion with a version ID specified • **DeleteMarkerCreated**: object deletion with no version ID specified
topic_urn	String	Topic URN (SMN trigger parameter) Minimum length: **1** Maximum length: **255**
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).

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Parameter	Type	Description
kafka_password	String	Kafka account password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable security authentication (Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).
access_user	String	RabbitMQ account name (RabbitMQ trigger parameter).
connect_address	String	Instance connection IP address (RabbitMQ trigger parameter).
exchange_name	String	Exchange name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable security authentication (RabbitMQ trigger parameter).
enable_acl	Boolean	**Explanation** Whether to enable username and password authentication (RocketMQ trigger parameter). **Value range** • **true**: yes • **false**: no
access_key	String	**Explanation** Connection username (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None
secret_key	String	**Explanation** Connection password (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None

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Table 6-587 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. • sync: synchronous execution • async: asynchronous execution Enumerated values: • **sync** • **async**
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. Unit: millisecond. This parameter is mandatory for APIG triggers. Minimum value: **1** Maximum value: **60000**
version	String	Function version information.

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

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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

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" : "DEDICATEDGATEWAY",
  "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:xxxxx:46b6f338fc3445b8846c71dfb1fbxxxx: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.

- The following types of triggers are supported: timer, API Gateway (Dedicated), APIC, CTS, DDS, GeminiDB Mongo, DIS, LTS, OBS, SMN, KAFKA, Kafka (Open-Source), DMS (for RabbitMQ), IoTDA, EG, and DMS (for RocketMQ).
- By default, DDS and Kafka triggers are in the **DISABLED** state, and other triggers are in the **ACTIVE** state.
- Only Timer, DDS, LTS, and Kafka triggers can be disabled.

URI

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

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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 descriptions.

Request Parameters

Table 6-594 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

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Table 6-595 Request body parameters

Parameter	Mandatory	Type	Description
trigger_type_code	Yes	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS): Enable CTS first. (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS): Configure a VPC for the function first. (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS): Configure an LTS agency first. (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka): Configure a DMS agency first. (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-

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Parameter	Mandatory	Type	Description
			Hong Kong, AP-Bangkok, AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ): Configure a DMS agency first. (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok) • EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_status	No	String	Trigger status. Enumerated values: • **ACTIVE** • **DISABLED**
event_type_code	No	String	Message code.

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Parameter	Mandatory	Type	Description
event_data	Yes	**TriggerEventDataRequestBody** object	Trigger source event.

Table 6-596 TriggerEventDataRequestBody

Parameter	Mandatory	Type	Description
name	No	String	• Timer trigger: trigger name • APIG trigger: API name • CTS trigger: notification name • OBS trigger: event notification name. The default value is the trigger ID.
schedule_type	No	String	Timer trigger type (timer trigger parameter). This parameter is mandatory for timer triggers. • 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. Enumerated values: • **Rate** • **Cron**

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Parameter	Mandatory	Type	Description
schedule	No	String	Triggering rule (timer trigger parameter). This parameter is mandatory for timer triggers. • 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 type (APIG trigger parameter). This parameter is mandatory for APIG triggers. • **1**: public • **2**: 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. Enumerated values: • **HTTP** • **HTTPS**

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Parameter	Mandatory	Type	Description
req_method	No	String	Request method of the API (APIG trigger parameter). This parameter is mandatory for APIG triggers. Enumerated values: • **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 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. • **SWA**: prefix match • **NORMAL**: exact match Enumerated values: • **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 is published (APIG trigger parameter). This parameter is mandatory for APIG triggers.

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Parameter	Mandatory	Type	Description
auth	No	String	API authentication mode (APIG trigger parameter). This parameter is mandatory for APIG triggers. • **IAM**: IAM authentication. This mode grants access permissions to IAM users only and is of medium security. • **APP**: AppKey and AppSecret authentication. This mode is of high security and is recommended. • **NONE**: Authentication is not required. All users can access this API. This mode is not recommended. Enumerated values: • **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	Subdomain name allocated by the APIG system by default (APIG trigger parameter). Minimum length: **1** Maximum length: **255**
backend_type	No	String	API backend type (APIG trigger parameter). Enumerated values: • **FUNCTION**

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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, RabbitMQ, and RocketMQ and Kafka triggers. • APIG trigger: APIG gateway ID. • DDS trigger: DDS instance ID. • Kafka trigger: Kafka instance ID. • RabbitMQ trigger: RabbitMQ instance ID. • RocketMQ trigger: RocketMQ 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	Database password (DDS trigger parameter). This parameter is mandatory for DDS triggers.

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Parameter	Mandatory	Type	Description
batch_size	No	Integer	Batch size, that is, the maximum amount of data that can be processed at a time. This parameter is mandatory for DIS, DDS, Kafka, RocketMQ, and RabbitMQ triggers. • DDS trigger: Enter a value from 1 to 10,000. • DIS trigger: Enter a value from 1 to 10,000. • Kafka trigger: Enter a value from 1 to 1,000. • RabbitMQ trigger: Enter a value from 1 to 1,000. • RocketMQ trigger: Enter a value 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.

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Parameter	Mandatory	Type	Description
sharditerator_type	No	String	Starting position (DIS trigger parameter). This parameter is mandatory for DIS triggers. • **TRIM_HORIZON**: Data is read from the earliest valid records that are 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. Enumerated values: • **TRIM_HORIZON** • **LATEST**
polling_unit	No	String	Pull period unit (DIS trigger parameter). This parameter is mandatory for DIS triggers. • **s**: second • **ms** indicates the millisecond. Enumerated values: • **s** • **ms**
max_fetch_bytes	No	Integer	Max. fetch bytes (DIS trigger parameter). Minimum value: **0** Maximum value: **4194304**
is_serial	No	String	Serial data processing (DIS trigger parameter): 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. This parameter is mandatory for DIS triggers. Enumerated values: • **true** • **false**

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Parameter	Mandatory	Type	Description
log_group_id	No	String	Log group ID (LTS trigger parameter). This parameter is mandatory for LTS triggers.
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 length: **1** Maximum length: **64**
prefix	No	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum length: **0** Maximum length: **1024**
suffix	No	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum length: **0** Maximum length: **1024**

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Parameter	Mandatory	Type	Description
events	No	Array of strings	Events (OBS trigger parameter). This parameter is mandatory for OBS triggers. • **ObjectCreated**: all kinds of object creation operations, including PUT, POST, COPY, and part assembling • **Put**: object upload using PUT • **Post**: object upload using POST • **Copy**: object copying using COPY • **CompleteMultipartUpload**: Assemble parts in a multipart upload. • **ObjectRemoved**: deleting objects • **Delete**: object deletion with a version ID specified • **DeleteMarkerCreated**: object deletion with no version ID specified
topic_urn	No	String	Topic URN (SMN trigger parameter) This parameter is mandatory for SMN triggers. Minimum length: **1** Maximum length: **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 account password (Kafka trigger parameter).
kafka_connect_address	No	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	No	Boolean	Whether to enable security authentication (Kafka trigger parameter).

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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 account name (RabbitMQ trigger parameter).
connect_address	No	String	Instance connection IP address (RabbitMQ trigger parameter).
exchange_name	No	String	Exchange 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 security authentication (RabbitMQ trigger parameter).
enable_acl	No	Boolean	Whether to enable username and password authentication (RocketMQ trigger parameter).
access_key	No	String	Connection username (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true.
secret_key	No	String	Connection password (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true.

Table 6-597 ApigTriggerFuncInfo

Parameter	Mandatory	Type	Description
function_urn	No	String	Function URN. For details, see the function model descriptions.

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Parameter	Mandatory	Type	Description
invocation_type	No	String	Execution mode of a function. • sync: synchronous execution • async: asynchronous execution Enumerated values: • **sync** • **async**
timeout	Yes	Integer	Timeout allowed for APIG to request the FunctionGraph service. Unit: millisecond. This parameter is mandatory for APIG triggers. Minimum value: **1** Maximum value: **60000**
version	No	String	Function version information.

Response Parameters

Status code: 201

Table 6-598 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.

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Parameter	Type	Description
trigger_type_code	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS) (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS) (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS) (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka) (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok, AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ) (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok)

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Parameter	Type	Description
		• EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_status	String	Trigger status. • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. Enumerated values: • **ACTIVE** • **DISABLED**
event_data	**TriggerEventDataResponseBody** object	Trigger source event.
last_updated_time	String	Time when the trigger was last updated.
created_time	String	Time when the trigger was created.

Table 6-599 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). • 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. Enumerated values: • **Rate** • **Cron**
schedule	String	Triggering rule (timer trigger parameter). • When the trigger type is Rate, the scheduled rule is used. • When the trigger type is Cron, the Cron expression is used.

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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	API type (APIG trigger parameter). • **1**: public • **2**: private
path	String	Path of the API (APIG trigger parameter).
protocol	String	Request protocol of the API (APIG trigger parameter). Enumerated values: • **HTTP** • **HTTPS**
req_method	String	Request method of the API (APIG trigger parameter). Enumerated values: • **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).

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Parameter	Type	Description
match_mode	String	Matching mode of the API (APIG trigger parameter). • **SWA**: prefix match • **NORMAL**: exact match Enumerated values: • **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 is published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).
auth	String	API authentication mode (APIG trigger parameter). • **IAM**: IAM authentication. This mode grants access permissions to IAM users only and is of medium security. • **APP**: AppKey and AppSecret authentication. This mode is of high security and is recommended. • **NONE**: Authentication is not required. All users can access this API. This mode is not recommended. Enumerated values: • **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 length: **1** Maximum length: **255**
backend_type	String	API backend type (APIG trigger parameter). Enumerated values: • **FUNCTION**

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Parameter	Type	Description
instance_id	String	Instance ID. This parameter is mandatory for DDS, RabbitMQ, and RocketMQ and Kafka triggers. • APIG trigger: APIG gateway ID. • DDS trigger: DDS instance ID. • Kafka trigger: Kafka instance ID. • RabbitMQ trigger: RabbitMQ instance ID. • RocketMQ trigger: RocketMQ 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	Database password (DDS trigger parameter).
db_user	String	Database username (DDS trigger parameter).
instance_addrs	Array of strings	Database instance address (DDS trigger parameter).
mode	String	Database instance type (DDS trigger parameter). • Sharding: cluster instance • ReplicaSet: replica set instance • Single: single node instance
batch_size	Integer	Batch size, that is, the maximum amount of data that can be processed at a time. This parameter is mandatory for DIS, DDS, Kafka, RocketMQ, and RabbitMQ triggers. • DDS trigger: Enter a value from 1 to 10,000. • DIS trigger: Enter a value from 1 to 10,000. • Kafka trigger: Enter a value from 1 to 1,000. • RabbitMQ trigger: Enter a value from 1 to 1,000. • RocketMQ trigger: Enter a value from 1 to 1,000.

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Parameter	Type	Description
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	Starting position (DIS trigger parameter). • **TRIM_HORIZON**: Data is read from the earliest valid records that are 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. Enumerated values: • **TRIM_HORIZON** • **LATEST**
polling_unit	String	Pull period unit (DIS trigger parameter). • **s**: second • **ms** indicates the millisecond. Enumerated values: • **s** • **ms**
max_fetch_bytes	Integer	Max. fetch bytes (DIS trigger parameter). Minimum value: **0** Maximum value: **4194304**
is_serial	String	Serial data processing (DIS trigger parameter): 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. Enumerated values: • **true** • **false**
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).

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Parameter	Type	Description
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 length: **1** Maximum length: **64**
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum length: **0** Maximum length: **1024**
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum length: **0** Maximum length: **1024**
events	Array of strings	Events (OBS trigger parameter). • **ObjectCreated**: all kinds of object creation operations, including PUT, POST, COPY, and part assembling • **Put**: object upload using PUT • **Post**: object upload using POST • **Copy**: object copying using COPY • **CompleteMultipartUpload**: Assemble parts in a multipart upload. • **ObjectRemoved**: deleting objects • **Delete**: object deletion with a version ID specified • **DeleteMarkerCreated**: object deletion with no version ID specified
topic_urn	String	Topic URN (SMN trigger parameter) Minimum length: **1** Maximum length: **255**
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).

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Parameter	Type	Description
kafka_password	String	Kafka account password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable security authentication (Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).
access_user	String	RabbitMQ account name (RabbitMQ trigger parameter).
connect_address	String	Instance connection IP address (RabbitMQ trigger parameter).
exchange_name	String	Exchange name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable security authentication (RabbitMQ trigger parameter).
enable_acl	Boolean	**Explanation** Whether to enable username and password authentication (RocketMQ trigger parameter). **Value range** • **true**: yes • **false**: no
access_key	String	**Explanation** Connection username (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None
secret_key	String	**Explanation** Connection password (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None

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Table 6-600 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. • sync: synchronous execution • async: asynchronous execution Enumerated values: • **sync** • **async**
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. Unit: millisecond. This parameter is mandatory for APIG triggers. Minimum value: **1** Maximum value: **60000**
version	String	Function version information.

Status code: 400

Table 6-601 Response body parameters

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

Status code: 401

Table 6-602 Response body parameters

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

Status code: 403

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Table 6-603 Response body parameters

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

Status code: **404**

Table 6-604 Response body parameters

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

Status code: 500

Table 6-605 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 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
    },
```

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```
  "name" : "API_test_function",
  "env_id" : "DEFAULT_ENVIRONMENT_RELEASE_ID",
  "env_name" : "RELEASE",
  "protocol" : "HTTPS",
  "auth" : "IAM",
  "group_id" : "5106210cf79e4xxxx",
  "sl_domain" : "5106210cf79e4xxxx.apic.{region_id}.example.com",
  "match_mode" : "SWA",
  "req_method" : "ANY",
  "backend_type" : "FUNCTION",
  "type" : 1,
  "path" : "/test_gxz_v1_billing"
 }
}
```

- Create a Kafka trigger named 86ad3efcxx 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

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```
{
  "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 6-606 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 descriptions.

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Parameter	Mandatory	Type	Description
trigger_type_code	Yes	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS): Enable CTS first. (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS): Configure a VPC for the function first. (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS): Configure an LTS agency first. (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka): Configure a DMS agency first. (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok,

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Parameter	Mandatory	Type	Description
			AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ): Configure a DMS agency first. (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok) • EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_id	Yes	String	Trigger ID.

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Request Parameters

Table 6-607 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

Response Parameters

Status code: 400

Table 6-608 Response body parameters

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

Status code: 401

Table 6-609 Response body parameters

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

Status code: 403

Table 6-610 Response body parameters

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

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Status code: **404**

Table 6-611 Response body parameters

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

Status code: 500

Table 6-612 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.

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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 6-613 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 descriptions.

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Parameter	Mandatory	Type	Description
trigger_type_code	Yes	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS): Enable CTS first. (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS): Configure a VPC for the function first. (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS): Configure an LTS agency first. (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka): Configure a DMS agency first. (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok,

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Parameter	Mandatory	Type	Description
			AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ): Configure a DMS agency first. (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok) • EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_id	Yes	String	Trigger ID.

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Request Parameters

Table 6-614 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

Response Parameters

Status code: 200

Table 6-615 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.

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Parameter	Type	Description
trigger_type_code	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS) (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS) (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS) (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka) (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok, AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ) (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok)

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Parameter	Type	Description
		• EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_status	String	Trigger status. • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. Enumerated values: • **ACTIVE** • **DISABLED**
event_data	**TriggerEventDataResponseBody** object	Trigger source event.
last_updated_time	String	Time when the trigger was last updated.
created_time	String	Time when the trigger was created.

Table 6-616 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). • 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. Enumerated values: • **Rate** • **Cron**
schedule	String	Triggering rule (timer trigger parameter). • When the trigger type is Rate, the scheduled rule is used. • When the trigger type is Cron, the Cron expression is used.

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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	API type (APIG trigger parameter). • **1**: public • **2**: private
path	String	Path of the API (APIG trigger parameter).
protocol	String	Request protocol of the API (APIG trigger parameter). Enumerated values: • **HTTP** • **HTTPS**
req_method	String	Request method of the API (APIG trigger parameter). Enumerated values: • **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).

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Parameter	Type	Description
match_mode	String	Matching mode of the API (APIG trigger parameter). • **SWA**: prefix match • **NORMAL**: exact match Enumerated values: • **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 is published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).
auth	String	API authentication mode (APIG trigger parameter). • **IAM**: IAM authentication. This mode grants access permissions to IAM users only and is of medium security. • **APP**: AppKey and AppSecret authentication. This mode is of high security and is recommended. • **NONE**: Authentication is not required. All users can access this API. This mode is not recommended. Enumerated values: • **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 length: **1** Maximum length: **255**
backend_type	String	API backend type (APIG trigger parameter). Enumerated values: • **FUNCTION**

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Parameter	Type	Description
instance_id	String	Instance ID. This parameter is mandatory for DDS, RabbitMQ, and RocketMQ and Kafka triggers. • APIG trigger: APIG gateway ID. • DDS trigger: DDS instance ID. • Kafka trigger: Kafka instance ID. • RabbitMQ trigger: RabbitMQ instance ID. • RocketMQ trigger: RocketMQ 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	Database password (DDS trigger parameter).
db_user	String	Database username (DDS trigger parameter).
instance_addrs	Array of strings	Database instance address (DDS trigger parameter).
mode	String	Database instance type (DDS trigger parameter). • Sharding: cluster instance • ReplicaSet: replica set instance • Single: single node instance
batch_size	Integer	Batch size, that is, the maximum amount of data that can be processed at a time. This parameter is mandatory for DIS, DDS, Kafka, RocketMQ, and RabbitMQ triggers. • DDS trigger: Enter a value from 1 to 10,000. • DIS trigger: Enter a value from 1 to 10,000. • Kafka trigger: Enter a value from 1 to 1,000. • RabbitMQ trigger: Enter a value from 1 to 1,000. • RocketMQ trigger: Enter a value from 1 to 1,000.

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Parameter	Type	Description
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	Starting position (DIS trigger parameter). • **TRIM_HORIZON**: Data is read from the earliest valid records that are 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. Enumerated values: • **TRIM_HORIZON** • **LATEST**
polling_unit	String	Pull period unit (DIS trigger parameter). • **s**: second • **ms** indicates the millisecond. Enumerated values: • **s** • **ms**
max_fetch_bytes	Integer	Max. fetch bytes (DIS trigger parameter). Minimum value: **0** Maximum value: **4194304**
is_serial	String	Serial data processing (DIS trigger parameter): 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. Enumerated values: • **true** • **false**
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).

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Parameter	Type	Description
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 length: **1** Maximum length: **64**
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum length: **0** Maximum length: **1024**
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum length: **0** Maximum length: **1024**
events	Array of strings	Events (OBS trigger parameter). • **ObjectCreated**: all kinds of object creation operations, including PUT, POST, COPY, and part assembling • **Put**: object upload using PUT • **Post**: object upload using POST • **Copy**: object copying using COPY • **CompleteMultipartUpload**: Assemble parts in a multipart upload. • **ObjectRemoved**: deleting objects • **Delete**: object deletion with a version ID specified • **DeleteMarkerCreated**: object deletion with no version ID specified
topic_urn	String	Topic URN (SMN trigger parameter) Minimum length: **1** Maximum length: **255**
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).

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Parameter	Type	Description
kafka_password	String	Kafka account password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable security authentication (Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).
access_user	String	RabbitMQ account name (RabbitMQ trigger parameter).
connect_address	String	Instance connection IP address (RabbitMQ trigger parameter).
exchange_name	String	Exchange name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable security authentication (RabbitMQ trigger parameter).
enable_acl	Boolean	**Explanation** Whether to enable username and password authentication (RocketMQ trigger parameter). **Value range** • **true**: yes • **false**: no
access_key	String	**Explanation** Connection username (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None
secret_key	String	**Explanation** Connection password (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None

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Table 6-617 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. • sync: synchronous execution • async: asynchronous execution Enumerated values: • **sync** • **async**
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. Unit: millisecond. This parameter is mandatory for APIG triggers. Minimum value: **1** Maximum value: **60000**
version	String	Function version information.

Status code: 400

Table 6-618 Response body parameters

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

Status code: 401

Table 6-619 Response body parameters

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

Status code: 403

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Table 6-620 Response body parameters

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

Status code: **404**

Table 6-621 Response body parameters

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

Status code: 500

Table 6-622 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" : "2019-10-29171553"
}
```

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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 6-623 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 descriptions.

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Parameter	Mandatory	Type	Description
trigger_type_code	Yes	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS): Enable CTS first. (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS): Configure a VPC for the function first. (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS): Configure an LTS agency first. (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka): Configure a DMS agency first. (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok,

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Parameter	Mandatory	Type	Description
			AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ): Configure a DMS agency first. (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok) • EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_id	Yes	String	Trigger ID.

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Request Parameters

Table 6-624 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. The token can be obtained by calling the IAM API. The value of X-Subject-Token in the response header is the user token.
Content-Type	Yes	String	Message body type or format. Default value: **application/json**

Table 6-625 Request body parameters

Parameter	Mandatory	Type	Description
trigger_status	No	String	Trigger status. Enumerated values: • **ACTIVE** • **DISABLED**
event_data	No	Array of **UpdateriggerEventData** objects	Trigger update event.

Table 6-626 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. Enumerated values: • **ms** • **s**

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Response Parameters

Status code: 200

Table 6-627 Response body parameters

Parameter	Type	Description
trigger_id	String	Trigger ID.

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Parameter	Type	Description
trigger_type_code	String	Trigger type. • TIMER • APIC: API Connect (APIC) (only available in AP-Singapore) • DEDICATEDGATEWAY: API Gateway (Dedicated) • CTS: Cloud Trace Service (CTS) (available in CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, TR-Istanbul, LA-Mexico City2, and LA-Sao Paulo1) • DDS: Document Database Service (DDS) (available in CN North-Beijing4, CN East-Shanghai1, and CN-Hong Kong) • DMS: Distributed Message Service (DMS) • GAUSSMONGO: GeminiDB Mongo (available in CN North-Beijing4, CN East-Shanghai1, and AP-Singapore) • DIS: Data Ingestion Service (DIS) (available in CN East-Shanghai1, CN-Hong Kong, and AP-Singapore) • LTS: Log Tank Service (LTS) (available at all regions except LA-Sao Paulo1) • KAFKA: DMS (for Kafka) (available at all regions except LA-Sao Paulo1) • OBS: Object Storage Service (OBS) (available at CN-Hong Kong, AP-Bangkok, AP-Singapore, AP-Jakarta, TR-Istanbul, and LA-Mexico City2) • SMN: Simple Message Notification (SMN) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, TR-Istanbul, LA-Sao Paulo1, and LA-Santiago) • OPENSOURCEKAFKA: Kafka (Open-Source) (available at CN North-Beijing4, CN East-Shanghai1, CN-Hong Kong, AP-Bangkok, AP-Singapore, and LA-Santiago) • RABBITMQ: DMS (for RabbitMQ) (available at CN North-Beijing4, CN East-Shanghai1, AP-Bangkok, AP-Singapore, LA-Mexico City2, and LA-Sao Paulo1) • IOTDA: IoT Device Access (IoTDA) (available at CN North-Beijing4, CN-Hong Kong, and AP-Bangkok)

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Parameter	Type	Description
		• EVENTGRID: EventGrid (EG) (available at AP-Bangkok, AP-Singapore, AF-Johannesburg, LA-Mexico City2, and LA-Santiago) • ROCKETMQ: Distributed Message Service (DMS) for RocketMQ
trigger_status	String	Trigger status. • ACTIVE: The trigger is enabled. • DISABLED: The trigger is disabled. Enumerated values: • **ACTIVE** • **DISABLED**
event_data	**TriggerEventDataResponseBody** object	Trigger source event.
last_updated_time	String	Time when the trigger was last updated.
created_time	String	Time when the trigger was created.

Table 6-628 TriggerEventDataResponseBody

Parameter	Type	Description
name	String	Trigger name.
schedule_type	String	Timer trigger type (timer trigger parameter). • 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. Enumerated values: • **Rate** • **Cron**
schedule	String	Triggering rule (timer trigger parameter). • When the trigger type is Rate, the scheduled rule is used. • When the trigger type is Cron, the Cron expression is used.

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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	API type (APIG trigger parameter). • **1**: public • **2**: private
path	String	Path of the API (APIG trigger parameter).
protocol	String	Request protocol of the API (APIG trigger parameter). Enumerated values: • **HTTP** • **HTTPS**
req_method	String	Request method of the API (APIG trigger parameter). Enumerated values: • **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).

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Parameter	Type	Description
match_mode	String	Matching mode of the API (APIG trigger parameter). • **SWA**: prefix match • **NORMAL**: exact match Enumerated values: • **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 is published (APIG trigger parameter).
api_id	String	API ID (APIG trigger parameter).
api_name	String	API name (APIG trigger parameter).
auth	String	API authentication mode (APIG trigger parameter). • **IAM**: IAM authentication. This mode grants access permissions to IAM users only and is of medium security. • **APP**: AppKey and AppSecret authentication. This mode is of high security and is recommended. • **NONE**: Authentication is not required. All users can access this API. This mode is not recommended. Enumerated values: • **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 length: **1** Maximum length: **255**
backend_type	String	API backend type (APIG trigger parameter). Enumerated values: • **FUNCTION**

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Parameter	Type	Description
instance_id	String	Instance ID. This parameter is mandatory for DDS, RabbitMQ, and RocketMQ and Kafka triggers. • APIG trigger: APIG gateway ID. • DDS trigger: DDS instance ID. • Kafka trigger: Kafka instance ID. • RabbitMQ trigger: RabbitMQ instance ID. • RocketMQ trigger: RocketMQ 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	Database password (DDS trigger parameter).
db_user	String	Database username (DDS trigger parameter).
instance_addrs	Array of strings	Database instance address (DDS trigger parameter).
mode	String	Database instance type (DDS trigger parameter). • Sharding: cluster instance • ReplicaSet: replica set instance • Single: single node instance
batch_size	Integer	Batch size, that is, the maximum amount of data that can be processed at a time. This parameter is mandatory for DIS, DDS, Kafka, RocketMQ, and RabbitMQ triggers. • DDS trigger: Enter a value from 1 to 10,000. • DIS trigger: Enter a value from 1 to 10,000. • Kafka trigger: Enter a value from 1 to 1,000. • RabbitMQ trigger: Enter a value from 1 to 1,000. • RocketMQ trigger: Enter a value from 1 to 1,000.

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Parameter	Type	Description
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	Starting position (DIS trigger parameter). • **TRIM_HORIZON**: Data is read from the earliest valid records that are 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. Enumerated values: • **TRIM_HORIZON** • **LATEST**
polling_unit	String	Pull period unit (DIS trigger parameter). • **s**: second • **ms** indicates the millisecond. Enumerated values: • **s** • **ms**
max_fetch_bytes	Integer	Max. fetch bytes (DIS trigger parameter). Minimum value: **0** Maximum value: **4194304**
is_serial	String	Serial data processing (DIS trigger parameter): 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. Enumerated values: • **true** • **false**
log_group_id	String	Log group ID (LTS trigger parameter).
log_topic_id	String	Log stream ID (LTS trigger parameter).

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Parameter	Type	Description
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 length: **1** Maximum length: **64**
prefix	String	Prefix (OBS trigger parameter). Enter a prefix to limit notifications to objects whose names start with the matching characters. Minimum length: **0** Maximum length: **1024**
suffix	String	Suffix (OBS trigger parameter). Enter a suffix to limit notifications to objects whose names end with the matching characters. Minimum length: **0** Maximum length: **1024**
events	Array of strings	Events (OBS trigger parameter). • **ObjectCreated**: all kinds of object creation operations, including PUT, POST, COPY, and part assembling • **Put**: object upload using PUT • **Post**: object upload using POST • **Copy**: object copying using COPY • **CompleteMultipartUpload**: Assemble parts in a multipart upload. • **ObjectRemoved**: deleting objects • **Delete**: object deletion with a version ID specified • **DeleteMarkerCreated**: object deletion with no version ID specified
topic_urn	String	Topic URN (SMN trigger parameter) Minimum length: **1** Maximum length: **255**
topic_ids	Array of strings	The Kafka topic ID list (Kafka trigger parameter).
kafka_user	String	Kafka account name (Kafka trigger parameter).

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Parameter	Type	Description
kafka_password	String	Kafka account password (Kafka trigger parameter).
kafka_connect_address	String	Kafka instance connection address (Kafka trigger parameter).
kafka_ssl_enable	Boolean	Whether to enable security authentication (Kafka trigger parameter).
access_password	String	RabbitMQ account password (RabbitMQ trigger parameter).
access_user	String	RabbitMQ account name (RabbitMQ trigger parameter).
connect_address	String	Instance connection IP address (RabbitMQ trigger parameter).
exchange_name	String	Exchange name (RabbitMQ trigger parameter).
vhost	String	Virtual host (RabbitMQ trigger parameter).
ssl_enable	Boolean	Whether to enable security authentication (RabbitMQ trigger parameter).
enable_acl	Boolean	**Explanation** Whether to enable username and password authentication (RocketMQ trigger parameter). **Value range** • **true**: yes **false**: no
access_key	String	**Explanation** Connection username (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None
secret_key	String	**Explanation** Connection password (RocketMQ trigger parameter). This parameter is mandatory when enable_acl is set to true. **Value range** None

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Table 6-629 ApigTriggerFuncInfo

Parameter	Type	Description
function_urn	String	Function URN. For details, see the function model descriptions.
invocation_type	String	Execution mode of a function. • sync: synchronous execution • async: asynchronous execution Enumerated values: • **sync** • **async**
timeout	Integer	Timeout allowed for APIG to request the FunctionGraph service. Unit: millisecond. This parameter is mandatory for APIG triggers. Minimum value: **1** Maximum value: **60000**
version	String	Function version information.

Status code: **404**

Table 6-630 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",
```

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```
 "event_data" : {
   "name" : "Timer-cpg3",
   "schedule" : "3m",
   "schedule_type" : "Rate"
 },
 "last_updated_time" : "2022-11-09 16:37:24",
 "created_time" : "2019-10-29171553"
}
```


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 6-631 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see **Obtaining a Project ID**. Minimum: **1** Maximum: **64**

Parameter	Mandatory	Type	Description
workflow_id	Yes	String	Flow definition ID. Minimum: **1** Maximum: **512**

Request Parameters

Table 6-632 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 6-633 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: • **success** • **fail** • **timeout**
output	Object	Flow execution result in JSON format. This parameter has a value only when the status is success.

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Parameter	Type	Description
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 6-634 SyncExecutionNodeErrorDetail

Parameter	Type	Description
node_id	String	Flow node ID. Minimum: **1** Maximum: **64**
error_message	String	Error details. Minimum: **1** Maximum: **2048**
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

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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**

Status code: 404

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**

Status code: 500

Table 6-637 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
```

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```
{
  "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
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.

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URI

POST /v2/{project_id}/fgs/workflows/{workflow_id}/executions

Table 6-638 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 6-639 Request header parameters

Parameter	Mandatory	Type	Description
X-Create-Time	No	String	workflowRun task create time
X-WorkflowRun-ID	No	String	workflowRun id
X-WorkflowRun-MergeFnParameters	No	String	Combines the output of the previous node with the input of the next node into an input.

Table 6-640 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.

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Response Parameters

Status code: 200

Table 6-641 Response body parameters

Parameter	Type	Description
execution_id	String	Error code. Minimum: **1** Maximum: **64**

Status code: 400

Table 6-642 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 6-643 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

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Table 6-644 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**.

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6.14.3 Deleting Flows

Function

This API is used to delete a flow.

URI

DELETE /v2/{project_id}/fgs/workflows

Table 6-645 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 6-646 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 6-647 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**

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Table 6-648 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 6-649 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 6-650 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: **1** Maximum: **36**
error_msg	String	Error description. Minimum: **2** Maximum: **512**

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Parameter	Type	Description
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

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Table 6-651 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see **Obtaining a Project ID**. Minimum: **1** Maximum: **64**

Table 6-652 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: • NORMAL • EXPRESS

Request Parameters

None

Response Parameters

Status code: 200

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Table 6-653 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 6-654 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**
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**

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Parameter	Type	Description
created_by	String	Flow creator. Minimum: **0** Maximum: **64**
enable_stream_response	Boolean	Whether to return stream data. Default: **false**

Status code: 400

Table 6-655 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 6-656 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**

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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

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Table 6-657 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 6-658 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**
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**

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Parameter	Mandatory	Type	Description
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: • **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 6-659 Trigger

Parameter	Mandatory	Type	Description
trigger_name	Yes	String	Trigger name. Minimum: **1** Maximum: **256**

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Parameter	Mandatory	Type	Description
trigger_type	Yes	String	Trigger type. Options: • FLOWTIMER • SMN • APIG_DE (dedicated) • OBS (OBS triggers are not available in the International regions.) Minimum: **1** Maximum: **32** Enumeration values: • **FLOWTIMER** • **SMN** • **APIG_DE** • **OBS**
enabled	No	Boolean	Whether to enable the trigger. Default: **true** Enumeration values: • **true** • **false**
trigger_config	No	**OBSTriggerConfig** object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-660 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**
events	Yes	Array of strings	OBS events. This parameter is mandatory when trigger_type is set to OBS. Array Length: **1 - 64**

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Parameter	Mandatory	Type	Description
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 6-661 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 6-662 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: • **sequential** • **parallel**
actions	Yes	Array of **Action** objects	Operations to be performed. Array Length: **1 - 10**

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Parameter	Mandatory	Type	Description
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: • **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.
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 6-663 Action

Parameter	Mandatory	Type	Description
function_ref	No	**FunctionRef** object	Function invocation information.

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Table 6-664 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: • **synchronize** • **asynchronous**
arguments	Yes	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 6-665 OnError

Parameter	Mandatory	Type	Description
error	No	String	Error matching expression, which is used to filter exceptions. Minimum: **0** Maximum: **256**

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Parameter	Mandatory	Type	Description
transition	No	String	ID of the next node. Minimum: **0** Maximum: **256**
retry_ref	No	String	Retry policy name. Minimum: **0** Maximum: **256**

Table 6-666 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 6-667 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**

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Table 6-668 ExpressConfig

Parameter	Mandatory	Type	Description
log_level	No	String	Execution log level, which is valid only when mode is set to EXPRESS. Options: • 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. To set this parameter to ALL or ERROR, enable LTS first. Minimum: **1** Maximum: **5** Enumeration values: • **ALL** • **ERROR** • **NONE**

Response Parameters

Status code: 201

Table 6-669 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.
name	String	Flow name. Minimum: **1** Maximum: **64**

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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 6-670 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

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Table 6-671 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:{regin}: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"
  } ]
}
```

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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 6-672 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**

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Table 6-673 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: • **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 6-674 Response body parameters

Parameter	Type	Description
executions	Array of **FlowExecutionBrief** objects	Flow execution information. Array Length: **0 - 999**

Table 6-675 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: • **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

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Table 6-676 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 6-677 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",
```

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```
  "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 6-678 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**

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Request Parameters

Table 6-679 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 6-680 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>: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: • **success** • **fail** • **running** • **timeout** • **cancel**
headers	Object	Headers for function execution.
input	Object	Input parameters for function execution.
output	Object	Function execution result.

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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 6-681 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 **NodeExecution** objects	Node execution records. Array Length: **0 - 200**

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Table 6-682 NodeExecution

Parameter	Type	Description
status	String	Flow node execution status. Minimum: **1** Maximum: **32** Enumeration values: • **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: **99999999999999999**
end_time	Long	Node end time (UTC), precise to milliseconds. Minimum: **0** Maximum: **99999999999999999**
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 6-683 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**

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Status code: 404

Table 6-684 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 6-685 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" : {
```

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```
  "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 6-686 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 6-687 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**

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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 6-688 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**

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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: • **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 6-689 Trigger

Parameter	Type	Description
trigger_name	String	Trigger name. Minimum: **1** Maximum: **256**

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Parameter	Type	Description
trigger_type	String	Trigger type. Options: • FLOWTIMER • SMN • APIG_DE (dedicated) • OBS (OBS triggers are not available in the International regions.) Minimum: **1** Maximum: **32** Enumeration values: • **FLOWTIMER** • **SMN** • **APIG_DE** • **OBS**
enabled	Boolean	Whether to enable the trigger. Default: **true** Enumeration values: • **true** • **false**
trigger_config	**OBSTriggerConfig** object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-690 OBSTriggerConfig

Parameter	Type	Description
bucket	String	OBS bucket name. This parameter is mandatory when trigger_type is set to OBS. Minimum: **1** Maximum: **64**
events	Array of strings	OBS events. This parameter is mandatory when trigger_type is set to OBS. Array Length: **1 - 64**
prefix	String	Object name prefix, which is mandatory when trigger_type is set to OBS. Minimum: **1** Maximum: **1024**

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Parameter	Type	Description
suffix	String	Object name suffix, which is mandatory when trigger_type is set to OBS. Minimum: **1** Maximum: **1024**

Table 6-691 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 6-692 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: • **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**

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Parameter	Type	Description
name	String	Node name. Minimum: **1** Maximum: **256**
type	String	Node type. Minimum: **1** Maximum: **32** Enumeration values: • **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 6-693 Action

Parameter	Type	Description
function_ref	**FunctionRef** object	Function invocation information.

Table 6-694 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**

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Parameter	Type	Description
invoke_mode	String	Function invocation mode. Currently, only synchronous invocation is supported. Minimum: **1** Maximum: **32** Enumeration values: • **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 6-695 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**

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Table 6-696 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 6-697 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**

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Table 6-698 ExpressConfig

Parameter	Type	Description
log_level	String	Execution log level, which is valid only when mode is set to EXPRESS. Options: • 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. To set this parameter to ALL or ERROR, enable LTS first. Minimum: **1** Maximum: **5** Enumeration values: • **ALL** • **ERROR** • **NONE**

Status code: 400

Table 6-699 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

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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**

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**.

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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 6-701 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 6-702 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**

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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: • **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**

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Table 6-703 Trigger

Parameter	Mandatory	Type	Description
trigger_name	Yes	String	Trigger name. Minimum: **1** Maximum: **256**
trigger_type	Yes	String	Trigger type. Options: • FLOWTIMER • SMN • APIG_DE (dedicated) • OBS (OBS triggers are not available in the International regions.) Minimum: **1** Maximum: **32** Enumeration values: • **FLOWTIMER** • **SMN** • **APIG_DE** • **OBS**
enabled	No	Boolean	Whether to enable the trigger. Default: **true** Enumeration values: • **true** • **false**
trigger_config	No	**OBSTriggerConfig** object	OBS trigger configuration. This parameter is mandatory when trigger_type is set to OBS.

Table 6-704 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**

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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 6-705 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.

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Table 6-706 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: • **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: • **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.

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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 6-707 Action

Parameter	Mandatory	Type	Description
function_ref	No	**FunctionRef** object	Function invocation information.

Table 6-708 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: • **synchronize** • **asynchronous**

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Parameter	Mandatory	Type	Description
arguments	Yes	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 6-709 OnError

Parameter	Mandatory	Type	Description
error	No	String	Error matching expression, which is used to filter exceptions. Minimum: **0** Maximum: **256**
transition	No	String	ID of the next node. Minimum: **0** Maximum: **256**
retry_ref	No	String	Retry policy name. Minimum: **0** Maximum: **256**

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Table 6-710 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 6-711 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**

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Table 6-712 ExpressConfig

Parameter	Mandatory	Type	Description
log_level	No	String	Execution log level, which is valid only when mode is set to EXPRESS. Options: • 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. To set this parameter to ALL or ERROR, enable LTS first. Minimum: **1** Maximum: **5** Enumeration values: • **ALL** • **ERROR** • **NONE**

Response Parameters

Status code: 200

Table 6-713 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.
name	String	Flow name. Minimum: **1** Maximum: **64**

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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 6-714 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: **1** Maximum: **36**
error_msg	String	Error description. Minimum: **2** Maximum: **512**
request_id	String	Request ID. Minimum: **2** Maximum: **512**

Status code: 500

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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

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:{regin}: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"
  } ]
}
```

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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 6-716 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details, see **Obtaining a Project ID**. Minimum: **1** Maximum: **64**

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Table 6-717 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 6-718 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.

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Table 6-719 SlaReportsValue

Parameter	Type	Description
timestamp	Long	Timestamp.
value	Double	Value.

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**

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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}

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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_urn	Yes	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. Minimum: **1** Maximum: **128**

Table 6-723 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 6-724 Response body parameters

Parameter	Type	Description
count	Array of **SlaReportsValue** objects	Number of executions.
duration	Array of **SlaReportsValue** objects	Average latency, in milliseconds.

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Parameter	Type	Description
fail_count	Array of **SlaReportsValue** objects	Number of errors.
running_count	Array of **SlaReportsValue** objects	Number of running flows.

Table 6-725 SlaReportsValue

Parameter	Type	Description
timestamp	Long	Timestamp.
value	Double	Value.

Status code: 400

Table 6-726 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 6-727 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: **1** Maximum: **36**

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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**.

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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 6-728 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 6-729 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: **1** Maximum: **36**
error_msg	String	Error description. Minimum: **2** Maximum: **512**

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Parameter	Type	Description
request_id	String	Request ID. Minimum: **2** Maximum: **512**

Status code: 404

Table 6-730 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 6-731 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
```

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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 6-732 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**

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Request Parameters

None

Response Parameters

Status code: 400

Table 6-733 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 6-734 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

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Table 6-735 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.

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URI

GET /v2/{project_id}/fgs/workflows/{workflow_id}/executions-history

Table 6-736 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 6-737 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.

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Request Parameters

None

Response Parameters

Status code: 200

Table 6-738 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 6-739 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: • **success** • **fail** • **running** • **timeout** • **cancel**

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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 6-740 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

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Table 6-741 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-eaead00cd6b9",
    "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
}
```

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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 6-742 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 6-743 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

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Table 6-744 Request body parameters

Parameter	Mandatory	Type	Description
result	Yes	String	Execution result. Minimum: **1** Maximum: **64** Enumeration values: • **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 6-745 Response body parameters

Parameter	Type	Description
execution_id	String	Error code. Minimum: **1** Maximum: **64**

Status code: 400

Table 6-746 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum: **1** Maximum: **36**

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Parameter	Type	Description
error_msg	String	Error description. Minimum: **2** Maximum: **512**

Status code: 404

Table 6-747 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 6-748 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/{workflow_id}/callback
{
  "result": "success",
  "output": {}
}
```

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 6-749 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.

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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
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.

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Table 6-752 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 6-753 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**
param	String	Parameters (in JSON format) corresponding to the target service. • 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

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Table 6-754 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:xxxxxxxxx:7aad83af3e8d42e99ac194xxxxxxxxxx: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}:5691ba790e2b46ceb38316xxxxxxxxxx:function:default:testPython:latest\"}"
    },
    "on_failure" : {
      "destination" : "FunctionGraph",
      "param" : "{\"func_urn\":\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxxxx: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**.

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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 6-755 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 6-756 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 6-757 Response body parameters

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

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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 6-758 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.

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Request Parameters

Table 6-759 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 6-760 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 6-761 FuncAsyncDestinationConfig

Parameter	Mandatory	Type	Description
on_success	No	**FuncDestinationConfig** object	Target to be invoked when a function is successfully executed.

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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 6-762 FuncDestinationConfig

Parameter	Mandatory	Type	Description
destination	No	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**
param	No	String	Parameters (in JSON format) corresponding to the target service. • 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

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Table 6-763 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 6-764 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.

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Table 6-765 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**
param	String	Parameters (in JSON format) corresponding to the target service. • 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 6-766 Response body parameters

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

Status code: 404

Table 6-767 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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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:xxxxxxxxx:7aad83af3e8d42e99ac194xxxxxxxxxx: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}:5691ba790e2b46ceb38316xxxxxxxxxx:function:default:testPython:latest\"}"
    },
    "on_failure" : {
      "destination" : "FunctionGraph",
      "param" : "{\"func_urn\":\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxxxx: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**.

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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 6-768 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 6-769 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. • 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**

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Request Parameters

Table 6-770 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 6-771 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	Reading location info.

Table 6-772 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.

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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 6-773 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 6-774 FuncDestinationConfig

Parameter	Type	Description
destination	String	Object type. • OBS • SMN • DIS • FunctionGraph Enumeration values: • **OBS** • **SMN** • **DIS** • **FunctionGraph**

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Parameter	Type	Description
param	String	Parameters (in JSON format) corresponding to the target service. • 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 6-775 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.

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}:5691ba790e2b46ceb38316xxxxxxxxxx: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}:5691ba790e2b46ceb38316xxxxxxxxxx:function:default:testPython:latest\"}"
      },
      "on_failure" : {
        "destination" : "FunctionGraph",
        "param" : "{\"func_urn\":\"urn:fss:
{region}:5691ba790e2b46ceb38316xxxxxxxxxx:function:default:testPython:latest\"}"
      }
```

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```
    },
    "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 6-776 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 6-777 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. • 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.

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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 6-778 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 6-779 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 6-780 ListFunctionAsyncInvocationsResult

Parameter	Type	Description
request_id	String	Asynchronous invocation request ID.

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Parameter	Type	Description
status	String	Asynchronous invocation status. Options: • WAIT • RUNNING • SUCCESS • FAIL • DISCARD Enumeration values: • **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 6-781 Response body parameters

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

Status code: 404

Table 6-782 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.

Status code: 500

Table 6-783 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.

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```
{
  "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 6-784 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.

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Table 6-785 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.

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Request Parameters

Table 6-786 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 6-787 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 6-788 ListFunctionAsyncInvocationsResult

Parameter	Type	Description
request_id	String	Asynchronous invocation request ID.

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Parameter	Type	Description
status	String	Asynchronous invocation status. Options: • WAIT • RUNNING • SUCCESS • FAIL • DISCARD Enumeration values: • **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 6-789 Response body parameters

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

Status code: 404

Table 6-790 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.

Status code: 500

Table 6-791 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

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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 6-792 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.

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Request Parameters

Table 6-793 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 6-794 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: • **force** • **recursive**

Response Parameters

Status code: 400

Table 6-795 Response body parameters

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

Status code: 403

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Table 6-796 Response body parameters

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

Status code: 404

Table 6-797 Response body parameters

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

Status code: 500

Table 6-798 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"
}
```

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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 Codes

See **Error Codes**.

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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.

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- 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	√	√

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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 of 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	√	√

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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:deleteSpecified-FunctionTriggers	√	√
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	√	√

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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.

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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.

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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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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 functionAccessor.	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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.1417	Invalid APIG Exclusive trigger parameters.	Invalid APIG (dedicated) trigger parameters.	Check the APIG (dedicated) trigger parameters.
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.1501	The delegate not exist.	The agency does not exist.	Check the xrole parameter of the request body.
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.

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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.

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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.

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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.

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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.

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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.
404	FSS.1135	The DMS queue does not exist.	The DMS queue cannot be found.	Check whether the DMS queue exists.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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.

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Status Code	Error Code	Error Message	Description	Solution
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 authenticatio n failed.	Check the authentication information.
500	FSS.4014	reading the storeObject timeout.Use larger memory	Dependency loading timed out.	Increase the function memory.
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.

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Status Code	Error Code	Error Message	Description	Solution
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.
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 usage exceed limit	The disk usage is too high.	Check the disk usage. If the problem persists, contact technical support.

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Status Code	Error Code	Error Message	Description	Solution
500	FSS.4208	function invocation canceled	The request is canceled.	The request is canceled. Try again.
500	FSS.4218	the function fails to be started for multiple times	The function fails to be started for multiple times.	Check the function code.
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.
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.

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8.3 Obtaining Account, IAM User, Project, User Group, Region, and Agency Information

Obtaining Account, IAM User, and Project Information

- Using the console

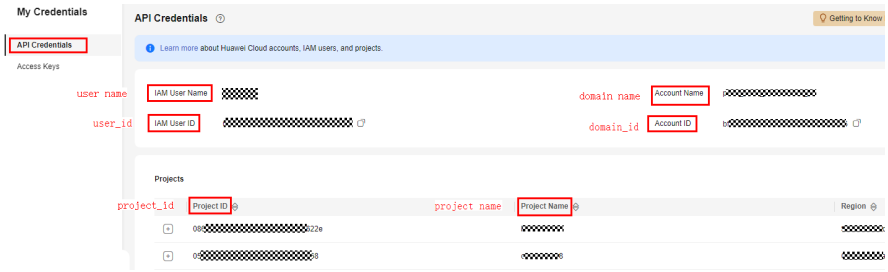
  Your username, user ID, account name, account ID, project name, and project ID need to be specified in the URL and request body for calling certain APIs. Obtain these parameters on the **My Credentials** page.

  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 pop-up bubble box.

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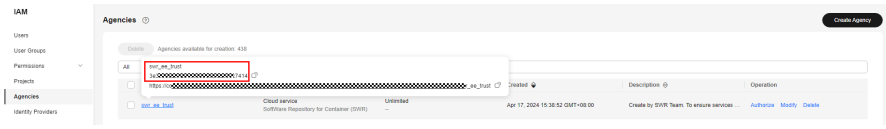
Figure 8-2 Viewing an agency ID



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

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Metric	Display Name	Description	Unit	Upper Limit	Lower Limit	Recommended Threshold	Value Type	Meaning	Dimension
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
minDuration	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
2022-11-21	Added the following APIs: Creating a Dependency Version Querying Dependency Versions Querying a Dependency Version Deleting a dependency version Querying Top Functions for a Specified Metric Querying Reserved Instances of a Function Querying the Number of Reserved Instances Modified the following API: Removed the API "Executing a Function Asynchronously and Returning Reserved Instance IDs".
2022-07-29	Added the following APIs: Executing a Function Asynchronously and Returning Reserved Instance IDs Updating Max. Instances of a Function Configuring Asynchronous Execution Notification Stopping an Asynchronous Invocation Request
2022-01-21	Modified the following content: Function management domain • Added the API for querying asynchronous invocation requests of a function. • Added the API for modifying tracing configuration. • Added the API for querying tracing configuration.

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Date	Description
2019-05-27	Optimized this document according to the V3.0 template. No API changes are involved.
2018-11-16	Added descriptions about FunctionGraph metrics monitored on Cloud Eye.
2018-08-29	Added descriptions about function disabling.
2018-08-20	1. Added descriptions about Node.js 8.10.
2018-05-15	Modified the document structure.
2018-02-28	This issue is the first official release.

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