API Reference

Issue 01

Date 2025-09-11

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1 Before You Start

Overview

Concepts

1.1 Overview

Resource Formation Service (RFS) provides the latest **resource formation APIs**.

RFS is a new final-state resource formation engine for cloud services and fully supports Terraform (HCL and Provider), which is a de facto standard. It is an upgrade of the Application Orchestration Service (AOS) in terms of the ecosystem, experience, and features. Based on HCL syntax template, RFS automatically builds cloud service resources in batches to help you create, manage, and upgrade cloud service resources in an efficient, secure, and consistent manner, improving resource management efficiency and reducing security risks caused by resource management changes.

This document describes how to use APIs to perform operations on RFS, such as template creation, deletion, and query.

Before calling RFS APIs, ensure that you are familiar with RFS concepts. For details, see **Service Overview**.

1.2 Concepts

- Account

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

- User

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

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

- Region

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

  For details, see **Region and AZ**.

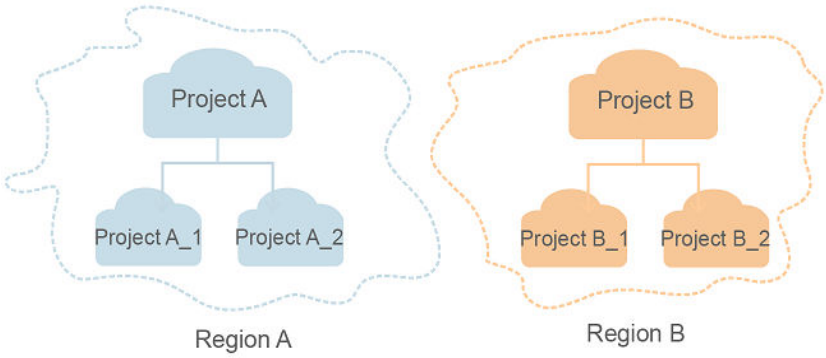
- AZ

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

- Project

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

  Figure 1-1 Project isolation model

- Enterprise project

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

  For details about enterprise projects and about how to obtain enterprise project IDs, see ***Enterprise Management User Guide***.

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2 API

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 Code**.

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

Response Header

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

Figure 2-1 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

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

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(Optional) Response Body

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

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

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

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

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

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

Calling APIs

Resource Formation-Stacks

Resource Formation-Execution Plans

Resource Formation-Template Analysis

Resource Formation-Template Management

Resource Formation - Stack Sets

Resource Formation - Customized Providers

Resource Formation - Hook

Resource Formation - Module Management

Permissions and Supported Actions

2.1 Calling APIs

2.1.1 Making an API Request

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

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Request URI

The format of a request URI is as follows:

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

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

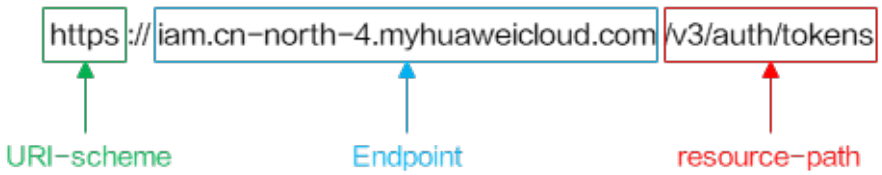
Table 2-1 Parameters in a URI

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use **HTTPS**.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**. For example, the endpoint of IAM in region **CN North-Beijing4** is **iam.cn-north-4.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. Not all APIs have a query parameter. 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 **CN North-Beijing4** region, obtain the endpoint of IAM (**iam.cn-north-4.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.cn-north-4.myhuaweicloud.com/v3/auth/tokens
```

Figure 2-2 Example URI



NOTE

To simplify the URI display, 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.

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Request Methods

HTTP-based request methods, which are also called operations or actions, specifying the type of operations that you are requesting.

Table 2-2 HTTP methods

Method	Description
GET	Requests a server to return a specified resource.
PUT	Requests the server to update a specified resource.
POST	Requests a server to add a resource or perform a special operation.
DELETE	Requests a server to delete a specified resource (for example, an object).
HEAD	Requests a server resource header.
PATCH	Requests a server to update partial contents of a specified resource. If the resource does not exist, a new resource will be created.

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

```
POST https://iam.cn-north-4.myhuaweicloud.com/v3/auth/tokens
```

Request Header

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

Table 2-3 lists common request header fields.

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Table 2-3 Common request headers

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

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

NOTE

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

For more information, see "AK/SK-based Authentication" in **Authentication**.

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

```
POST https://iam.cn-north-4.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

The request body is optional. A request body is often sent in a structured format (for example, JSON or XML) as defined in the **Content-Type** header field. If the request body contains full-width characters, these characters must be coded in UTF-8.

Request bodies vary with APIs. Some APIs do not require a request body, such as the APIs requested using the GET and DELETE methods.

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

NOTE

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

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```
POST https://iam.cn-north-4.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json

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

If all data required by a request is available, you can send the request to call the API through **curl**, **Postman**, or coding. For the API of obtaining a user token, **x-subject-token** in the response header is the required user token. Use the token to authenticate the calling of other APIs.

2.1.2 Authentication

You can use either of the following authentication methods to call APIs:

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

Token Authentication

NOTE

A token is valid for 24 hours. If a token is required, the system caches the token to avoid frequent calling.

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

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

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

```
                "password": "********",
                "domain": {
                    "name": "domainname"
                }
            }
        }
    },
    "scope": {
        "project": {
            "name": "xxxxxxxx"
        }
    }
  }
}
```

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

```
POST https://iam.cn-north-4.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

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

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

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

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

NOTE

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

2.1.3 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 Code**.

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

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Response Header

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

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

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

(Optional) Response Body

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

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

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

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

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

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

2.2 Resource Formation-Stacks

2.2.1 Listing Events of a Stack

Function

ListStackEvents

This API lists all deployment events of a stack.

- If deployment_id is assigned, deployment_id is used as a query criterion and the stack events corresponding to a specific deployment are returned. If no deployment_id is assigned, all of the stack events are returned.
- If the deployment corresponding to the given deployment_id does not exist, 404 is returned.
- You can use filter to query stack events by specifying the event type (event_type), resource type (resource_type), and resource name (resource_name).
- You can use field to set the attributes to be returned. The attribute event type (event_type) cannot be configured and it is returned by default. The available attributes are elapsed time (elapsed_seconds), event message (event_message), resource ID key (resource_id_key), resource ID value (resource_id_value), resource key (resource_key), resource type (resource_type), resource name (resource_name), and timestamp (timestamp).
- The returned events are arranged in descending order of time.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/{project_id}/stacks/{stack_name}/events

Table 2-4 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**

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Parameter	Mandatory	Type	Description
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Table 2-5 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
deployment_id	No	String	Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered.

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Parameter	Mandatory	Type	Description
filter	No	String	Filter criteria. • The AND operator is defined using a comma (,). • The OR operator is defined using a vertical bar (|). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • Only equal signs (==) are supported as the filter operator. • Filter parameter names and values can contain only letters, digits, and underscores (_). • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter parameter. Semicolons (;) are not allowed in filter criteria. If semicolons are used, the filter criteria will be ignored.
field	No	String	Specified attribute name. • The attribute name can contain only letters, digits, and underscores (_). • Multiple attribute names are separated by commas (,).

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Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-6 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-7 Response body parameters

Parameter	Type	Description
stack_events	Array of **StackEvent** objects	List of stack events.
page_info	**page_info** object	Pagination information

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Table 2-8 StackEvent

Parameter	Type	Description

resource_type	String	Resource type.
		For example, in the following HCL template, the value of resource_type is huaweicloud_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_type is huaweicloud_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

resource_name	String	Resource name. The default value is the logical name of a resource.
		For example, in the following HCL template, the value of resource_name is my_hello_world_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_name is my_hello_world_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

resource_id_key	String	Name of resource ID. If a resource is not created, resource_id_key is not returned. The ID is defined by a provider. Different providers may comply with different naming rules. For details about the naming rules, contact provider developers or read provider's documentation.
resource_id_value	String	Resource ID value. If a resource is not created, resource_id_value is not returned.

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Parameter	Type	Description

resource_key	String	Resource key. If count or for_each is used in a template, resource_key will be returned.
		If count is used in a template, resource_key is a number starting from 0.
		For example, in the following HCL template, if the count is 2, two resources will be generated and the value of resource_key is 0 and 1.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }`
		In a JSON template, the value of resource_key is 0 and 1.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc", "count": 2 } } } }`
		If for_each is used in a template, resource_key is a user-defined string.
		In the following HCL template, the value of resource_key is vpc1 and vpc2.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { for_each = { "vpc1" = "test_vpc" "vpc2" = "test_vpc" } name = each.value }`
		In the following JSON template, the value of resource_key is vpc1 and vpc2.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "for_each": { "vpc1": "test_vpc", "vpc2": "test_vpc" } "name": "${each.value}" } } } }`

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Parameter	Type	Description
time	String	Occurrence time of an event. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
event_type	String	Event types may include: • LOG: records status information, such as the current status and target status. • ERROR: records failure information. • DRIFT: records resource deviation information. • SUMMARY: records summary of resource change results. • CREATION_IN_PROGRESS: The event is being created. • CREATION_FAILED: Failed to create the event. • CREATION_COMPLETE: Event created. • DELETION_IN_PROGRESS: The event is being deleted. • DELETION_FAILED: Delete event failed. • DELETION_COMPLETE: Event deleted. • UPDATE_IN_PROGRESS: The event is being updated. The update is not a replacement. In the case of a replacement update, a replacement event is created and then the old event is deleted. • UPDATE_FAILED: Update event failed. The update is not a replacement. In the case of a replacement update, a replacement event is created and then the old event is deleted. • UPDATE_COMPLETE: Event updated. The update is not a replacement. In the case of a replacement update, a replacement event is created and then the old event is deleted.
event_message	String	Details about a stack event.

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Parameter	Type	Description
elapsed_seconds	Integer	Event execution duration (Unit: seconds)

Table 2-9 page_info

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-10 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-11 Detail

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

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Status code: 401

Table 2-12 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-13 Detail

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

Status code: 403

Table 2-14 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-15 Detail

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

Status code: 404

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Table 2-16 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-17 Detail

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

Status code: 429

Table 2-18 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-19 Detail

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

Status code: 500

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Table 2-20 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-21 Detail

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

Example Requests

- Use filter to obtain stack events with the specified event_type and resource_name.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?filter=event_type==LOG,resource_name==my_hello_world_resource
  ```

- Use field to select the following returned attributes: resource_key, resource_name, and event_type. The event_type attribute is automatically selected even if you do not select it.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?field=resource_key,resource_name
  ```

- Obtain stack events of a specified deployment using deployment_id.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?deployment_id=81edbb3e-00d9-42fd-94c8-59c7525d0f28
  ```

- Obtain stack events of a specified deployment using stack_id.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

Status code: 200

Stack events listed.

```
{
  "stack_events" : [ {
    "event_message" : "Apply required resource success. ",
    "event_type" : "LOG",
    "time" : "2023-05-17T11:56:47Z"
  }, {
    "event_message" : "Apply complete! Resources: 1 added, 0 changed, 0 destroyed.",
    "event_type" : "SUMMARY",
```

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```
    "time" : "2023-05-17T11:56:45Z"
  }, {
    "resource_type" : "huaweicloud_vpc",
    "resource_name" : "vpc",
    "elapsed_seconds" : 8,
    "event_message" : "huaweicloud_vpc.vpc: Creation complete after 8s [id=38d617da-9b7f-4550-9ff7-
d0e271dd4735]",
    "event_type" : "CREATION_COMPLETE",
    "resource_id_key" : "id",
    "resource_id_value" : "38d617da-9b7f-4550-9ff7-d0e271dd4735",
    "time" : "2023-05-17T11:56:40Z"
  }, {
    "resource_type" : "huaweicloud_vpc",
    "resource_name" : "vpc",
    "event_message" : "huaweicloud_vpc.vpc: Creating...",
    "event_type" : "CREATION_IN_PROGRESS",
    "time" : "2023-05-17T11:56:32Z"
  }, {
    "event_message" : "Creating required resource now",
    "event_type" : "LOG",
    "time" : "2023-05-17T11:56:31Z"
  } ],
  "page_info" : {
    "current_count" : 5,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Stack events listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack or the specified deployment does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.2 Obtaining Stack Metadata

Function

GetStackMetadata

This API obtains the metadata of a stack, including the stack ID, stack name, stack description, creation time, update time, stack status, and agency.

You can obtain details by referring to GetStackMetadataResponseBody.

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If a stack is in a non-final state (The state ends with IN_PROGRESS. Details are shown in the following description.), its metadata is in a transition phase, which may be a state before or after deployment. The metadata of the stack is in a state after deployment only when the stack is in a final state (ending with *COMPLETE* or *FAILED*).

The non-final states may include:

- DEPLOYMENT_IN_PROGRESS
- ROLLBACK_IN_PROGRESS
- DELETION_IN_PROGRESS

The final states may include:

- CREATION_COMPLETE
- DEPLOYMENT_FAILED
- DEPLOYMENT_COMPLETE
- ROLLBACK_FAILED
- ROLLBACK_COMPLETE
- DELETION_FAILED

URI

GET /v1/{project_id}/stacks/{stack_name}/metadata

Table 2-22 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-23 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

Request Parameters

Table 2-24 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-25 Response body parameters

Parameter	Type	Description
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
stack_name	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
description	String	Description of a stack. It can be used by customers to identify their own stacks.

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Parameter	Type	Description
vars_structure	Array of **VarsStructure** objects	HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • var_structure allows string variables. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • vars_structure only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use vars_uri and vars_body, which support various types and complex structures supported by HCL. • If vars_structure is too large, you can use vars_uri. • Note: vars_structure cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to set the encryption field.

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Parameter	Type	Description
vars_body	String	Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • If vars_body is too large, you can use vars_uri. • If the content in vars is simple strings, you can use var_structure. • vars_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.
enable_deletion_protection	Boolean	Deletion protection flag. If this variable is not assigned, the default value is false, indicating that deletion protection is disabled by default. (After deletion protection is enabled, stacks cannot be deleted.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.

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Parameter	Type	Description
enable_auto_rollback	Boolean	Auto-rollback flag. If this variable is not assigned, the default value is false, indicating that auto-rollback is disabled by default. (After auto-rollback is enabled, if the deployment fails, the stack is automatically rolled back and returns to the previous stable status.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated. This property is mutually exclusive with the import resources using templates feature, which does not allow the deployment of templates containing imported resources if the stack's auto-rollback is set to true.

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Parameter	Type	Description
status	String	Status of a stack. • CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. • DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. • DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. • DEPLOYMENT_COMPLETE indicates the deployment completed. • ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. • ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. • ROLLBACK_COMPLETE indicates the rollback completed. • DELETION_IN_PROGRESS indicates the deletion is in progress. • DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.
agencies	Array of **Agency** objects	Agency information. RFS uses an agency only in requests that involve resource operations, such as creating a stack (triggering deployment), creating an execution plan, deploying a stack, and deleting a stack. In addition, the agency applies only to resource operations performed by the provider bound to the agency. If the permissions provided by the agency are insufficient, operations on related resources may fail. **Creating Delegation and Authorisation Methods**

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Parameter	Type	Description
status_message	String	If a stack is in a failure state (ending with FAILED), a brief error information summary is displayed for debugging.
vars_uri_content	String	File content corresponding to vars_uri.
create_time	String	Creation time of a stack. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
update_time	String	Update time of a stack (applied to the metadata update and deployment). The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

Table 2-26 VarsStructure

Parameter	Type	Description
var_key	String	Variable name.
var_value	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body.
encryption	**EncryptionStructure** object	If a transferred var_value has been encrypted, you can declare this variable to require RFS to decrypt the var_value before using it. Currently, only KMS encryption and decryption are supported.

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Table 2-27 EncryptionStructure

Parameter	Type	Description
kms	**KmsStructure** object	If an assigned var_value is encrypted by KMS, related encryption information can be transferred. RFS will help you decrypt the var_value by KMS. For more details about KMS encryption and its sample code, refer to **KMS Application Scenarios**. **Note:** • The agency you specify for RFS should have the operation permissions on the specified key ID. • KMS provides a quota for free trial every month. If the quota is exceeded, you will be billed for KMS. The fee is not billed by RFS. **More details** • KMS encryption only indicates that RFS uses ciphertext for storage and transmission. However, RFS still uses plaintext in stack-events. If you want RFS to use ciphertext in logs, you can declare sensitive in templates. For more information about sensitive, refer to **https://developer.hashicorp.com/terraform/tutorials/configuration-language/sensitive-variables**

Table 2-28 KmsStructure

Parameter	Type	Description
id	String	KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.
cipher_text	String	Ciphertext of data encryption key.

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Table 2-29 Agency

Parameter	Type	Description
provider_name	String	Name of the provider used by a user. If the provider_name value given by the user is duplicate, 400 is returned.
agency_name	String	IAM agency used by the corresponding provider. RFS uses this agency to access and create resources of the provider. Either agency_name or agency_urn must be specified.
agency_urn	String	Agency URN When a user defines an agency, either agency_name or agency_urn must be specified. You are advised to set agency_urn when using the trust agency.

Status code: 400

Table 2-30 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-31 Detail

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

Status code: 401

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Table 2-32 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-33 Detail

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

Status code: 403

Table 2-34 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-35 Detail

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

Status code: 404

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Table 2-36 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-37 Detail

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

Status code: 429

Table 2-38 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-39 Detail

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

Status code: 500

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Table 2-40 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-41 Detail

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

Example Requests

- Obtain stack metadata.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/metadata
  ```

- Obtain stack metadata, with a stack ID provided to check whether the stack ID matches the current stack.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/metadata?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

Status code: 200

Stack metadata obtained.

```
{
  "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
  "stack_name" : "my_hello_world_stack",
  "description" : "my hello world stack",
  "enable_deletion_protection" : false,
  "enable_auto_rollback" : false,
  "status" : "DEPLOYMENT_COMPLETE",
  "agencies" : [ {
    "agency_name" : "rf_admin_trust",
    "provider_name" : "huaweicloud"
  } ],
  "create_time" : "2023-03-16T03:28:20Z",
  "update_time" : "2023-05-24T08:56:10Z"
}
```

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Status Codes

Status Code	Description
200	Stack metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.3 Listing Stacks

Function

ListStacks

This API lists all stacks in current region.

- Stacks are sorted by creation time in descending order so that the stack created latest is displayed at the front.
- If no stacks are available, a list of empty value will be returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListStacks returns only the summary information, ListStacksResponseBody returns details, and GetStackMetadata returns detailed metadata of stacks.

URI

GET /v1/{project_id}/stacks

Table 2-42 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**

Table 2-43 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-44 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-45 Response body parameters

Parameter	Type	Description
stacks	Array of **Stack** objects	Stack list. Stacks are sorted by creation time in descending order. The one created latest is displayed on the top.
page_info	**page_info** object	Pagination information

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Table 2-46 Stack

Parameter	Type	Description
stack_name	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
description	String	Description of a stack. It can be used by customers to identify their own stacks.
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Type	Description
status	String	Status of a stack. • CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. • DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. • DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. • DEPLOYMENT_COMPLETE indicates the deployment completed. • ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. • ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. • ROLLBACK_COMPLETE indicates the rollback completed. • DELETION_IN_PROGRESS indicates the deletion is in progress. • DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.
create_time	String	Creation time of a stack. The format complies with the RFC 3339 format (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
update_time	String	Update time of a stack (applied to the metadata update and deployment scenarios). The format complies with the RFC 3339 format (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
status_message	String	If a stack is in a failure state (ending with FAILED), a brief error information summary is displayed for debugging.

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Table 2-47 page_info

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-48 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-49 Detail

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

Status code: 401

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Table 2-50 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-51 Detail

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

Status code: 403

Table 2-52 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-53 Detail

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

Status code: 429

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Table 2-54 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-55 Detail

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

Status code: 500

Table 2-56 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-57 Detail

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

Example Requests

List stacks.

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```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks
```

Example Responses

Status code: 200

Stacks listed.

```
{
  "stacks" : [ {
    "stack_name" : "my_second_stack",
    "description" : "my second stack",
    "stack_id" : "4d4f4ece-b291-4c71-8083-bec9b8a44de0",
    "status" : "DEPLOYMENT_COMPLETE",
    "create_time" : "2023-05-17T07:34:22Z",
    "update_time" : "2023-05-17T07:34:44Z"
  }, {
    "stack_name" : "my_first_stack",
    "description" : "my second stack",
    "stack_id" : "e830c288-ee34-48c0-ba6b-a0e6f6b48d3e",
    "status" : "CREATION_COMPLETE",
    "create_time" : "2023-05-17T07:34:06Z",
    "update_time" : "2023-05-17T07:34:28Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```

Status Codes

Status Code	Description
200	Stacks listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

2.2.4 Creating a Stack

Function

CreateStack creates a stack.

- If template, vars, and other information are not included in the request, an empty stack will be created and stack_id will be returned.

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- If template, vars, and other information are included in the request, a stack will be created and stack_id and deployment_id will be returned.

URI

POST /v1/{project_id}/stacks

Table 2-58 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**

Request Parameters

Table 2-59 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Table 2-60 Request body parameters

Parameter	Mandatory	Type	Description
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Parameter	Mandatory	Type	Description
agencies	No	Array of **Agency** objects	Agency information. RFS uses an agency only in requests that involve resource operations, such as creating a stack (triggering deployment), creating an execution plan, deploying a stack, and deleting a stack. In addition, the agency applies only to resource operations performed by the provider bound to the agency. If the permissions provided by the agency are insufficient, operations on related resources may fail. **Creating Delegation and Authorisation Methods**
description	No	String	Description of a stack. It can be used by customers to identify their own stacks.
enable_deletion_protection	No	Boolean	Deletion protection flag. If this variable is not assigned, the default value is false, indicating that deletion protection is disabled by default. (After deletion protection is enabled, stacks cannot be deleted.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.

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Parameter	Mandatory	Type	Description
enable_auto_rollback	No	Boolean	Auto-rollback flag. If this variable is not assigned, the default value is false, indicating that auto-rollback is disabled by default. (After auto-rollback is enabled, if the deployment fails, the stack is automatically rolled back and returns to the previous stable status.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated. This property is mutually exclusive with the import resources using templates feature, which does not allow the deployment of templates containing imported resources if the stack's auto-rollback is set to true.

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Parameter	Mandatory	Type	Description
template_body	No	String	HCL template. It describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Either template_body or template_uri must be specified but they both cannot be specified together. In the CreateStack API, template_body and template_uri are optional. **Note:** • template_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding template_body in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed file cannot contain the .tfvars file and must be encoded in UTF8 format (the .tf.json file cannot contain the BOM header). The .zip package supports a maximum of 100 subfiles. Either template_body or template_uri must be specified. In the CreateStack API, template_body and template_uri are optional. **Note**: • The template file corresponds to template_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the content of the template file in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
			• If the template file corresponding to template_uri is of zip type, the length of the internal file or folder name must not exceed 255 bytes, the length of the deepest path must not exceed 2048 bytes, and the size of the zip package must not exceed 1MB.
vars_body	No	String	Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • If vars_body is too large, you can use vars_uri. • If the content in vars is simple strings, you can use var_structure. • vars_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

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Parameter	Mandatory	Type	Description
vars_structure	No	Array of VarsStructure objects	HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • var_structure allows string variables. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • vars_structure only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use vars_uri and vars_body, which support various types and complex structures supported by HCL. • If vars_structure is too large, you can use vars_uri. • Note: vars_structure cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to set the encryption field.

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Parameter	Mandatory	Type	Description
vars_uri	No	String	OBS address of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. Ensure that the OBS address is located in the same region as the RFS. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. • vars_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

Table 2-61 Agency

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Name of the provider used by a user. If the provider_name value given by the user is duplicate, 400 is returned.

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Parameter	Mandatory	Type	Description
agency_name	No	String	IAM agency used by the corresponding provider. RFS uses this agency to access and create resources of the provider. Either agency_name or agency_urn must be specified.
agency_urn	No	String	Agency URN When a user defines an agency, either agency_name or agency_urn must be specified. You are advised to set agency_urn when using the trust agency.

Table 2-62 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	Variable name.
var_value	Yes	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body.
encryption	No	**EncryptionStructure** object	If a transferred var_value has been encrypted, you can declare this variable to require RFS to decrypt the var_value before using it. Currently, only KMS encryption and decryption are supported.

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Table 2-63 EncryptionStructure

Parameter	Mandatory	Type	Description
kms	Yes	**KmsStructure** object	If an assigned var_value is encrypted by KMS, related encryption information can be transferred. RFS will help you decrypt the var_value by KMS. For more details about KMS encryption and its sample code, refer to **KMS Application Scenarios**. **Note:** • The agency you specify for RFS should have the operation permissions on the specified key ID. • KMS provides a quota for free trial every month. If the quota is exceeded, you will be billed for KMS. The fee is not billed by RFS. **More details** • KMS encryption only indicates that RFS uses ciphertext for storage and transmission. However, RFS still uses plaintext in stack-events. If you want RFS to use ciphertext in logs, you can declare sensitive in templates. For more information about sensitive, refer to **https://developer.hashicorp.com/terraform/tutorials/configuration-language/sensitive-variables**

Table 2-64 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.

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Parameter	Mandatory	Type	Description
cipher_text	Yes	String	Ciphertext of data encryption key.

Response Parameters

Status code: 201

Table 2-65 Response body parameters

Parameter	Type	Description
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Type	Description
deployment_id	String	Deployment ID Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status. **Note:** • The RFS will persist the deployment request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous deployment requests and processes them in order. The maximum waiting time for each deployment is 6 hours.

Status code: 400

Table 2-66 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-67 Detail

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

Status code: 401

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Table 2-68 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-69 Detail

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

Status code: 403

Table 2-70 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-71 Detail

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

Status code: 409

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Table 2-72 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-73 Detail

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

Status code: 429

Table 2-74 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-75 Detail

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

Status code: 500

Table 2-76 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-77 Detail

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

Example Requests

- Create a stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks

{
  "stack_name" : "my_first_stack",
  "description" : "my first stack"
}
```

- Create a stack using an agency.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks

{
  "stack_name" : "my_second_stack",
  "description" : "my second stack",
  "agencies" : [ {
    "provider_name" : "huaweicloud",
    "agency_name" : "my_agency"
  } ]
}
```

- Create and deploy a stack using the URI of a template.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks

{
  "stack_name" : "my_third_stack",
  "template_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/my-hello-world-template.tf",
  "description" : "my third stack"
}
```

- Create and deploy a stack using a template. RFS supports the HCL syntax, and source field of required_providers module, which is used to define provider path, should be as the format of huawei.com/provider/{provider_name} (for example: huawei.com/provider/huaweicloud).

```
{
  "stack_name" : "my_fourth_stack",
```

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```
 "template_body" : "terraform {\n    required_providers {\n      huaweicloud = {\n        source = \"huawei.com/provider/huaweicloud\"\n        version = \"1.41.0\"\n        }\n    }\n}\nprovider \"huaweicloud\"{\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n    endpoints = {\n        iam = \"{iam_endpoint}\"\n    }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}",
 "description" : "my fourth stack"
}
```

Example Responses

Status code: 201

Stack created.

```
{
 "stack_id" : "ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2"
}
```

Status Codes

Status Code	Description
201	Stack created.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. Too many stacks.
409	Request conflict. Another stack with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.2.5 Obtaining a Stack Template

Function

GetStackTemplate

This API obtains the template used for the current deployment if the stack is in the final state.

Note:

When a stack is in a non-final state (ending with IN_PROGRESS), the stack is in the transition phase. This API obtains the template used for the last deployment of the stack.

Only when the stack is in the final state (ending with COMPLETE or FAILED), this API obtains the template used for the current deployment. CREATION_COMPLETE is an exception because there is no template yet and 404 is returned, indicating that the template does not exist.

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The non-final states may include:

- DEPLOYMENT_IN_PROGRESS
- ROLLBACK_IN_PROGRESS
- DELETION_IN_PROGRESS

The final states may include:

- CREATION_COMPLETE (an empty stack has been created)
- DEPLOYMENT_FAILED
- DEPLOYMENT_COMPLETE
- ROLLBACK_FAILED
- ROLLBACK_COMPLETE
- DELETION_FAILED

If the template is successfully obtained, the template download link (OBS presigned URL, valid for 5 minutes) is returned in temporary redirection mode. Most clients automatically redirect and download the template.

If automatic redirection is not performed, refer to the HTTP redirection rule and manually download the template.

URI

GET /v1/{project_id}/stacks/{stack_name}/templates

Table 2-78 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-79 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
access_control_source_ips	No	Array of strings	The array of source ips that are allowed to access the stack template, the source ip must be an IPv4 address with a subnet mask in CIDR notation.
access_control_source_vpc_ids	No	Array of strings	The array of source vpc ids that are allowed to access the stack template, the source vpc id should only contain lowercase letters, digits, and hyphens (-).

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Request Parameters

Table 2-80 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 307

Table 2-81 Response header parameters

Parameter	Type	Description
Location	String	HTTP redirect header. The client can use this header to redirect to a template download link (OBS presigned URL, valid for 5 minutes).

Status code: 400

Table 2-82 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-83 Detail

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

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Status code: 401

Table 2-84 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-85 Detail

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

Status code: 403

Table 2-86 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-87 Detail

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

Status code: 404

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Table 2-88 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-89 Detail

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

Status code: 429

Table 2-90 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-91 Detail

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

Status code: 500

Table 2-92 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-93 Detail

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

Example Requests

- Obtain a stack template.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/templates
  ```

- Obtain a stack template and check whether the stack ID matches the current stack.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/templates?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

- Obtain a stack template and provide access_control_source_ips to control the source ips that are allowed to access the stack template.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/templates?access_control_source_ips=100.11.5.100/24&access_control_source_ips=100.22.5.100/24
  ```

- Obtain a stack template and provide access_control_source_vpc_ids to control the source vpc ids that are allowed to access the stack template.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/templates?access_control_source_vpc_ids=d42a8768-ad3c-4bca-91t8-53870f3402a9&access_control_source_vpc_ids=d42a8768-ad3c-4bca-91t8-53870f3402a8
  ```

Example Responses

None

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Status Codes

Status Code	Description
307	Stack template obtained. Temporary redirect.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack or template does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.6 Listing Stack Resources

Function

ListStackResources

This API lists the information about all resources managed by a stack.

When the stack is in a non-final state, only brief information about the resources in the stack is output, including logical_resource_name, logical_resource_type, physical_resource_id, physical_resource_name, and status. When the stack is in the final status, additional detailed information is output. For example, the resource_attributes.

The non-final states may include:

- DEPLOYMENT_IN_PROGRESS
- DELETION_IN_PROGRESS
- ROLLBACK_IN_PROGRESS

Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/{project_id}/stacks/{stack_name}/resources

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Table 2-94 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Table 2-95 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-96 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-97 Response body parameters

Parameter	Type	Description
stack_resources	Array of **StackResource** objects	List of resources managed by a stack.
page_info	**page_info** object	Pagination information

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Table 2-98 StackResource

Parameter	Type	Description
physical_resource_id	String	Physical ID of a resource, generated by the resource provider, cloud service provider, or other service providers during resource deployment.
physical_resource_name	String	Physical name of the resource, defined by the resource provider, cloud service provider, or other service providers during resource deployment.

logical_resource_name	String	Logical name of the resource, defined in a template.
		Logical variables are only used as identifiers of the resource in the template.
		For example, in the following HCL template, the value of logical_resource_name is my_hello_world_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  name = "test_vpc"`
		`}`
		In a JSON template, the value of logical_resource_name is my_hello_world_vpc.
		`{`
		`  "resource": {`
		`  "huaweicloud_vpc": {`
		`  "my_hello_world_vpc": {`
		`  "name": "test_vpc"`
		`  }`
		`  }`
		`  }`
		`}`

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Parameter	Type	Description

logical_resource_type	String	Resource type.
		Logical variables are only used as identifiers of the resource in the template.
		For example, in the following HCL template, the value of logical_resource_type is huaweicloud_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  name = "test_vpc"`
		`}`
		In a JSON template, the value of logical_resource_type is huaweicloud_vpc.
		`{`
		`  "resource": {`
		`  "huaweicloud_vpc": {`
		`  "my_hello_world_vpc": {`
		`  "name": "test_vpc"`
		`  }`
		`  }`
		`  }`
		`}`

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Parameter	Type	Description

index_key	String	Resource index. If count or for_each is used in a template, index_key is returned. If index_key appears, logical_resource_name + index_key can be used as an identifier of the resource.
		If count is used in a template, index_key is a number starting from 0.
		For example, in the following HCL template, you can use huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] to identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  count = 2`
		`  name = "test_vpc"`
		`}`
		In a JSON template, you can use huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] to identify two resources.
		`{`
		`  "resource": {`
		`  "huaweicloud_vpc": {`
		`  "my_hello_world_vpc": {`
		`  "name": "test_vpc",`
		`  "count": 2`
		`  }`
		`  }`
		`  }`
		`}`
		If for_each is used in a template, index_key is a user-defined string.
		For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  for_each = {`
		`  "vpc1" = "test_vpc"`
		`  "vpc2" = "test_vpc"`
		`  }`
		`  name = each.value`
		`}`
		In a JSON template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and

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Parameter	Type	Description

		huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.
		{
		"resource": {
		"huaweicloud_vpc": {
		"my_hello_world_vpc": {
		"for_each": {
		"vpc1": "test_vpc",
		"vpc2": "test_vpc"
		}
		"name": "${each.value}"
		}
		}
		}
		}

resource_status	String	Status of the resource. • CREATION_IN_PROGRESS: The resource is being created. • CREATION_FAILED: Create resource failed. • CREATION_COMPLETE: Resource created. • DELETION_IN_PROGRESS: The resource is being deleted. • DELETION_FAILED: Delete resource failed. • DELETION_COMPLETE: Resource deleted. • UPDATE_IN_PROGRESS: The resource is being updated. The update is not a replacement. In the case of a replacement update, a replacement resource is created and then the old resource is deleted. • UPDATE_FAILED: Update resource failed. The update is not a replacement. In the case of a replacement update, a replacement resource is created and then the old resource is deleted. • UPDATE_COMPLETE: Resource updated. The update is not a replacement. In the case of a replacement update, a replacement resource is created and then the old resource is deleted.

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Parameter	Type	Description
status_message	String	If the resource is in a failure state (ending with FAILED), a summary of the error information is displayed for debugging.
resource_attributes	Array of **ResourceAttribute** objects	Resource attribute list.

Table 2-99 ResourceAttribute

Parameter	Type	Description
key	String	Resource attribute key.
value	String	Resource attribute value.

Table 2-100 page_info

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-101 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-102 Detail

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

Status code: 401

Table 2-103 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-104 Detail

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

Status code: 403

Table 2-105 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-106 Detail

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

Status code: 404

Table 2-107 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-108 Detail

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

Status code: 429

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Table 2-109 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-110 Detail

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

Status code: 500

Table 2-111 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-112 Detail

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

Example Requests

- List the stack resources.

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```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
resources
```

- List the stack resources and check whether the stack ID matches the current stack.

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
resources?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
```

Example Responses

Status code: 200

Stack resources listed.

```
{
  "stack_resources" : [ {
    "logical_resource_name" : "vpc",
    "logical_resource_type" : "huaweicloud_vpc",
    "physical_resource_id" : "38d617da-9b7f-4550-9ff7-d0e271dd4735",
    "physical_resource_name" : "my_vpc",
    "resource_attributes" : [ {
      "key" : "cidr",
      "value" : "172.16.0.0/16"
    }, {
      "key" : "description",
      "value" : ""
    }, {
      "key" : "enterprise_project_id",
      "value" : "0"
    }, {
      "key" : "id",
      "value" : "38d617da-9b7f-4550-9ff7-d0e271dd4735"
    }, {
      "key" : "name",
      "value" : "test_name"
    }, {
      "key" : "region",
      "value" : "cn-north-7"
    }, {
      "key" : "routes",
      "value" : "[]"
    }, {
      "key" : "secondary_cidr",
      "value" : "null"
    }, {
      "key" : "status",
      "value" : "OK"
    }, {
      "key" : "tags",
      "value" : "null"
    }, {
      "key" : "timeouts",
      "value" : "null"
    } ],
    "resource_status" : "CREATION_COMPLETE"
  } ],
  "page_info" : {
    "current_count" : 1,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```

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Status Codes

Status Code	Description
200	Stack resources listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.7 Listing Stack Outputs

Function

ListStackOutputs

This API lists all outputs of a stack.

The stack output is the return information generated after the deployment of the output statement block defined in the template is complete. After the deployment is complete, you can call this API to obtain the specific output information.

If the stack is in a non-final state (ending with IN_PROGRESS), this API returns empty value. The non-final states may include:

- DEPLOYMENT_IN_PROGRESS
- DELETION_IN_PROGRESS
- ROLLBACK_IN_PROGRESS

Output is defined in the HCL syntax. The returned information is similar to the return value programmatically. For details, refer to the HCL documentation.

Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/{project_id}/stacks/{stack_name}/outputs

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Table 2-113 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Table 2-114 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-115 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-116 Response body parameters

Parameter	Type	Description
outputs	Array of **StackOutput** objects	Stack output list.
page_info	**page_info** object	Pagination information

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Table 2-117 StackOutput

Parameter	Type	Description

name	String	Name of a stack output, defined in a template.
		For example, in the following HCL template, the value of name is vpc_id.
		`output "vpc_id" {`
		`  value = huaweicloud_vpc.my_hello_world_vpc.id`
		`}`
		In a JSON template, the value of name is vpc_id.
		`{`
		`  "output": {`
		`  "vpc_id": [`
		`  {`
		`  "value": "$ {huaweicloud_vpc.my_hello_world_vpc.id}"`
		`  }`
		`  ]`
		`  }`
		`}`

description	String	Description of a stack output, defined in a template.
type	String	Output type of a stack.
value	String	Output value of a stack.
sensitive	Boolean	Whether a stack output is sensitive. This is defined in a template. If an output is defined as sensitive in a template, the actual value and type of the output will not be returned in the response body. Instead, will be returned.

Table 2-118 page_info

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.

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Parameter	Type	Description
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-119 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-120 Detail

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

Status code: 401

Table 2-121 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-122 Detail

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

Status code: 403

Table 2-123 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-124 Detail

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

Status code: 404

Table 2-125 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-126 Detail

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

Status code: 429

Table 2-127 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-128 Detail

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

Status code: 500

Table 2-129 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-130 Detail

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

Example Requests

- List the stack outputs.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/outputs
  ```

- List the stack outputs and check whether the stack ID matches the current stack.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/outputs?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

Status code: 200

The stack outputs listed.

```
{
  "outputs" : [ {
    "name" : "my_first_vpc",
    "sensitive" : true,
    "type" : "<sensitive>",
    "value" : "<sensitive>",
    "description" : "type and value is invisible when sensitive is true."
  }, {
    "name" : "my_second_vpc",
    "type" : "string",
    "value" : "\"huaweicloud_vpc.my_second_vpc\"",
    "description" : "type and value is real when sensitive not set or is false."
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```

Status Codes

Status Code	Description
200	The stack outputs listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.

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Status Code	Description
404	The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.8 Continuing to Deploy a Stack

Function

ContinueDeployStack

This API continues to deploy an existing stack.

- If a stack is in the DEPLOYMENT_FAILED status, it can continue to be deployed, then 202 and the deploymentId will return. If it is in other statuses, deployment is not allowed and the corresponding error code is returned.
- If the deployment still fails, you can obtain the logs by calling the ListStackEvents API. Fix the problems and call this API again to continue to deploy.

URI

POST /v1/{project_id}/stacks/{stack_name}/continuations

Table 2-131 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Request Parameters

Table 2-132 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Table 2-133 Request body parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

Response Parameters

Status code: 202

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Table 2-134 Response body parameters

Parameter	Type	Description
deployment_id	String	Deployment ID Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status. **Note:** • The RFS will persist the deployment request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous deployment requests and processes them in order. The maximum waiting time for each deployment is 6 hours.

Status code: 400

Table 2-135 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-136 Detail

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

Status code: 401

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Table 2-137 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-138 Detail

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

Status code: 403

Table 2-139 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-140 Detail

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

Status code: 404

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Table 2-141 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-142 Detail

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

Status code: 409

Table 2-143 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-144 Detail

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

Status code: 429

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Table 2-145 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-146 Detail

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

Status code: 500

Table 2-147 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-148 Detail

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

Example Requests

- Continue to deploy a stack.

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```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
continuations
```

- Continue to deploy a stack and check whether the stack ID matches the current stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
continuations

{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "deployment_id" : "3fef5d3e-27b6-44e8-9769-1d7262bd9430"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack status, cannot continue to be deployed. 2. The user does not have the permission to call this API.
404	The stack does not exist.
409	Request conflict. Another request is being processed on the current stack.
429	Too frequent requests.
500	Internal server error.

2.2.9 Deploying a Stack

Function

DeployStack

This API deploys a created stack.

- You can call this API to update the template and parameters and trigger a new deployment.

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- This API triggers deployment directly. If users want to confirm deployment details in advance, create an execution plan by calling CreateExecutionPlan and get the execution plan by calling GetExecutionPlan.
- Assign all the templates and vars and then call this API.
- If resources defined in template (including imported resources) are deleted, the actual resources will be deleted when stack is deployed. It is recommended to use CreateExecutionPlan to ensure there is no unexpected operation to resources.
- If automatic rollback is enabled, the stack rolls back once its deployment fails. If automatic rollback is disabled, the stack stays in the current status when the deployment fails.

URI

POST /v1/{project_id}/stacks/{stack_name}/deployments

Table 2-149 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Request Parameters

Table 2-150 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-151 Request body parameters

Parameter	Mandatory	Type	Description
template_body	No	String	HCL template. It describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Either template_body or template_uri must be specified but they both cannot be specified together. In the CreateStack API, template_body and template_uri are optional. **Note:** • template_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding template_body in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed file cannot contain the .tfvars file and must be encoded in UTF8 format (the .tf.json file cannot contain the BOM header). The .zip package supports a maximum of 100 subfiles. Either template_body or template_uri must be specified. In the CreateStack API, template_body and template_uri are optional. **Note**: • The template file corresponds to template_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the content of the template file in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
			• If the template file corresponding to template_uri is of zip type, the length of the internal file or folder name must not exceed 255 bytes, the length of the deepest path must not exceed 2048 bytes, and the size of the zip package must not exceed 1MB.
vars_structure	No	Array of **VarsStructure** objects	HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • var_structure allows string variables. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • vars_structure only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use vars_uri and vars_body, which support various types and complex structures supported by HCL. • If vars_structure is too large, you can use vars_uri. • Note: vars_structure cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to set the encryption field.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • If vars_body is too large, you can use vars_uri. • If the content in vars is simple strings, you can use var_structure. • vars_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

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Parameter	Mandatory	Type	Description
vars_uri	No	String	OBS address of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. Ensure that the OBS address is located in the same region as the RFS. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. • vars_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

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Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

Table 2-152 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	Variable name.
var_value	Yes	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body.
encryption	No	**EncryptionStructure** object	If a transferred var_value has been encrypted, you can declare this variable to require RFS to decrypt the var_value before using it. Currently, only KMS encryption and decryption are supported.

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Table 2-153 EncryptionStructure

Parameter	Mandatory	Type	Description
kms	Yes	**KmsStructure** object	If an assigned var_value is encrypted by KMS, related encryption information can be transferred. RFS will help you decrypt the var_value by KMS. For more details about KMS encryption and its sample code, refer to **KMS Application Scenarios**. **Note:** • The agency you specify for RFS should have the operation permissions on the specified key ID. • KMS provides a quota for free trial every month. If the quota is exceeded, you will be billed for KMS. The fee is not billed by RFS. **More details** • KMS encryption only indicates that RFS uses ciphertext for storage and transmission. However, RFS still uses plaintext in stack-events. If you want RFS to use ciphertext in logs, you can declare sensitive in templates. For more information about sensitive, refer to **https://developer.hashicorp.com/terraform/tutorials/configuration-language/sensitive-variables**

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Table 2-154 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.
cipher_text	Yes	String	Ciphertext of data encryption key.

Response Parameters

Status code: 202

Table 2-155 Response body parameters

Parameter	Type	Description
deployment_id	String	Deployment ID Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status. **Note:** • The RFS will persist the deployment request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous deployment requests and processes them in order. The maximum waiting time for each deployment is 6 hours.

Status code: 400

Table 2-156 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-157 Detail

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

Status code: 401

Table 2-158 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-159 Detail

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

Status code: 403

Table 2-160 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-161 Detail

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

Status code: 404

Table 2-162 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-163 Detail

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

Status code: 409

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Table 2-164 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-165 Detail

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

Status code: 429

Table 2-166 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-167 Detail

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

Status code: 500

Table 2-168 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-169 Detail

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

Example Requests

Transfer template and variable information using OBS signed URL.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/deployments

{
  "template_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/my-hello-world-template.tf",
  "vars_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/my-hello-world-vars.tfvars",
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "deployment_id" : "3fef5d3e-27b6-44e8-9769-1d7262bd9430"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.

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Status Code	Description
403	1. Invalid stack status. 2. The user does not have the permission to call this API.
404	The stack does not exist.
409	Request conflict. Another request is being processed on the current stack.
429	Too frequent requests.
500	Internal server error.

2.2.10 Deleting a Stack

Function

DeleteStack

This API deletes a stack.

Exercise caution when performing this operation. Deleting a stack will delete all data related to the stack by default, such as execution plans, stack events, stack outputs, and resources.

- This API triggers the deletion of a stack, and all data (including resources created by template or imported by import blocks) of the stack is deleted for eventual consistency. You can call GetStackMetadata or ListStacks to track the deletion.
- A stack cannot be deleted if it is in a non-final state (ending with *IN_PROGRESS*). The states may include:
  - DEPLOYMENT_IN_PROGRESS
  - DELETION_IN_PROGRESS
  - ROLLBACK_IN_PROGRESS
- If deletion protection is enabled for a stack, the stack cannot be deleted. You can call GetStackMetadata and view the *enable_deletion_protection* field in the returned result to check whether deletion protection is enabled. You can call UpdateStack to disable deletion protection.
- If the deletion of a stack fails, you can correct the current template based on the information in StackEvents, and delete the stack again after completing deployment. Deployment can be triggered in either of the following ways:
  - Call CreateExecutionPlan to create an execution plan. After the execution plan is created, call ApplyExecutionPlan to deploy the stack.
  - Call DeployStack to deploy the stack.

URI

DELETE /v1/{project_id}/stacks/{stack_name}

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Table 2-170 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Table 2-171 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Request Parameters

Table 2-172 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 202

The request is accepted and processed asynchronously.

Status code: 400

Table 2-173 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-174 Detail

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

Status code: 401

Table 2-175 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-176 Detail

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

Status code: 403

Table 2-177 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-178 Detail

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

Status code: 404

Table 2-179 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-180 Detail

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

Status code: 429

Table 2-181 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-182 Detail

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

Status code: 500

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Table 2-183 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-184 Detail

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

Example Requests

- Delete a specified stack.

  ```
  DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack
  ```

- Delete a specified stack and check whether the provided stack ID matches the current stack.

  ```
  DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

None

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack status. 2. The user does not have the permission to call this API.
404	The stack does not exist.
429	Too frequent requests.

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Status Code	Description
500	Internal server error.

2.2.11 Updating a Stack

Function

This API updates the attributes of a stack based on the information provided by users. One or more of the following attributes can be updated: **description**, **enable_deletion_protection**, **enable_auto_rollback**, and **agencies**.

This API updates only the fields contained in the information assigned by the user.

Note: All attributes are overwritten once updated. New parameters will overwrite original attributes of a stack.

For example, if you want to add agencies, call GetStackMetadata to obtain the original agencies, integrate the information of old and new agencies, and then call UpdateStack.

- A stack cannot be updated if it is in a non-final state (ending with *IN_PROGRESS*). The states may include:
  - DEPLOYMENT_IN_PROGRESS
  - DELETION_IN_PROGRESS
  - ROLLBACK_IN_PROGRESS
- If the value of enable_auto_rollback is changed from false to true, the stack state is determined more strictly. A stack cannot be updated if it is in a state ending with *_FAILED*. The states may include:
  - DEPLOYMENT_FAILED
  - ROLLBACK_FAILED
  - DELETION_FAILED

URI

PATCH /v1/{project_id}/stacks/{stack_name}

Table 2-185 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**

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Parameter	Mandatory	Type	Description
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Request Parameters

Table 2-186 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Table 2-187 Request body parameters

Parameter	Mandatory	Type	Description
description	No	String	Description of a stack. It can be used by customers to identify their own stacks.

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Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
enable_deletion_protection	No	Boolean	Deletion protection flag. If this variable is not assigned, the default value is false, indicating that deletion protection is disabled by default. (After deletion protection is enabled, stacks cannot be deleted.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.

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Parameter	Mandatory	Type	Description
enable_auto_rollback	No	Boolean	Auto-rollback flag. If this variable is not assigned, the default value is false, indicating that auto-rollback is disabled by default. (After auto-rollback is enabled, if the deployment fails, the stack is automatically rolled back and returns to the previous stable status.) In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated. This property is mutually exclusive with the import resources using templates feature, which does not allow the deployment of templates containing imported resources if the stack's auto-rollback is set to true.
agencies	No	Array of **Agency** objects	Agency information. RFS uses an agency only in requests that involve resource operations, such as creating a stack (triggering deployment), creating an execution plan, deploying a stack, and deleting a stack. In addition, the agency applies only to resource operations performed by the provider bound to the agency. If the permissions provided by the agency are insufficient, operations on related resources may fail. **Creating Delegation and Authorisation Methods**

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Table 2-188 Agency

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Name of the provider used by a user. If the provider_name value given by the user is duplicate, 400 is returned.
agency_name	No	String	IAM agency used by the corresponding provider. RFS uses this agency to access and create resources of the provider. Either agency_name or agency_urn must be specified.
agency_urn	No	String	Agency URN When a user defines an agency, either agency_name or agency_urn must be specified. You are advised to set agency_urn when using the trust agency.

Response Parameters

Status code: 204

Updated.

Status code: 400

Table 2-189 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-190 Detail

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

Status code: 401

Table 2-191 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-192 Detail

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

Status code: 403

Table 2-193 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-194 Detail

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

Status code: 404

Table 2-195 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-196 Detail

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

Status code: 409

Table 2-197 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-198 Detail

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

Status code: 429

Table 2-199 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-200 Detail

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

Status code: 500

Table 2-201 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-202 Detail

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

Example Requests

- Update the description of a stack.

```
PATCH https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack

{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "description" : "my hello world stack"
}
```

- Disable deletion protection and auto-rollback of a stack.

```
PATCH https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack

{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "enable_deletion_protection" : false,
  "enable_auto_rollback" : false
}
```

- Update agency information of a stack.

```
PATCH https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack

{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "agencies" : {
    "provider_name" : "my_hello_world_provider",
    "agency_name" : "my_agency"
  }
}
```

Example Responses

None

Status Codes

Status Code	Description
204	Updated.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack status. 2. The user does not have the permission to call this API.
404	The stack does not exist.

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Status Code	Description
409	Request conflict. Another request is being processed on the current stack.
429	Too frequent requests.
500	Internal server error.

2.2.12 Deleting a Stack with Conditions

Function

This API deletes a stack with conditions. You can determine whether to retain resources.

Exercise caution when performing this operation. Deleting a stack will delete all data related to the stack by default, such as execution plans, stack events, stack outputs, and resources.

If you want to retain stack resources when deleting the stack, specify *retain_all_resources* in the request.

- This API triggers the deletion of a stack, and all data of the stack is deleted for eventual consistency. You can call GetStackMetadata or ListStacks to track the deletion. After the deletion is complete, the deleted stack will not be returned in the preceding API.
- A stack cannot be deleted if it is in a non-final state (ending with *IN_PROGRESS*). The states may include:
- DEPLOYMENT_IN_PROGRESS
- DELETION_IN_PROGRESS
- ROLLBACK_IN_PROGRESS
- If deletion protection is enabled for a stack, the stack cannot be deleted. You can call GetStackMetadata and view the *enable_deletion_protection* field in the returned result to check whether deletion protection is enabled. You can call UpdateStack to disable deletion protection.
- If the deletion of a stack fails, you can correct the current template based on the information in StackEvents, and delete the stack again after completing deployment. Deployment can be triggered in either of the following ways:
- Call CreateExecutionPlan to create an execution plan. After the execution plan is created, call ApplyExecutionPlan to deploy the stack.
- Call DeployStack to deploy the stack.

URI

POST /v1/{project_id}/stacks/{stack_name}/deletion

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Table 2-203 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Request Parameters

Table 2-204 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-205 Request body parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
retain_all_resources	No	Boolean	Indicates whether to retain resources when deleting a stack. If this variable is not assigned, the default value **false** is used, indicating that resources are not retained by default. (After a stack is deleted, resources in the stack are deleted.) In the DeleteStackEnhanced API, if this variable is not assigned in the RequestBody, the resources in the stack are not retained during deletion.

Response Parameters

Status code: 202

The request is accepted and processed asynchronously.

Status code: 400

Table 2-206 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-207 Detail

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

Status code: 401

Table 2-208 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-209 Detail

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

Status code: 403

Table 2-210 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-211 Detail

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

Status code: 404

Table 2-212 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-213 Detail

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

Status code: 429

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Table 2-214 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-215 Detail

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

Status code: 500

Table 2-216 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-217 Detail

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

Example Requests

- Delete a stack without retaining resources.

```
POST https://{endpoint}/v1/{project_id}/stacks/{stack_name}/deletion
```

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```
{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

- Delete a stack while retaining resources.

```
POST https://{endpoint}/v1/{project_id}/stacks/{stack_name}/deletion

{
  "stack_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "retain_all_resources" : true
}
```

Example Responses

None

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack status. 2. The user does not have the permission to call this API.
404	The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.2.13 Continuing to Roll Back a Stack

Function

ContinueRollbackStack

This API continues to roll back an existing stack.

If auto-rollback is enabled for a stack, the stack automatically rolls back when its deployment fails. However, the auto-rollback may fail. You can troubleshoot the issues based on the error message and then call ContinueRollbackStack to trigger the continuation of the rollback, which means retrying rollback.

- If the stack is in the *ROLLBACK_FAILED* state, indicating that it can be rolled back, 202 and deploymentId are returned. Otherwise, the stack cannot be rolled back and a response error code is returned.
- The continuation of rollback may also fail. If it fails, you can obtain the corresponding logs by calling ListStackEvents and troubleshoot the issues. Once the issues are resolved, you can call ContinueRollbackStack again to trigger the rollback.

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URI

POST /v1/{project_id}/stacks/{stack_name}/rollbacks

Table 2-218 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Request Parameters

Table 2-219 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-220 Request body parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

Response Parameters

Status code: 202

Table 2-221 Response body parameters

Parameter	Type	Description
deployment_id	String	Unique ID of the deployment triggered by continuing rollback. The ID is generated by RFS and is usually a UUID. Rollback request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the rollback status for the stack. **Note:** • RFS queues these asynchronous rollback requests and processes them in order when the sever is idle. The maximum waiting time for each rollback is 6 hours.

Status code: 400

Table 2-222 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-223 Detail

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

Status code: 401

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Table 2-224 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-225 Detail

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

Status code: 403

Table 2-226 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-227 Detail

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

Status code: 404

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Table 2-228 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-229 Detail

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

Status code: 409

Table 2-230 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-231 Detail

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

Status code: 429

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Table 2-232 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-233 Detail

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

Status code: 500

Table 2-234 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-235 Detail

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

Example Requests

- Continue to roll back a stack.

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```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
rollbacks
```

- Continue to roll back a stack and check whether the provided stack ID matches the current stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
rollbacks

{
  "stack_id" : "8592967b-18b0-421b-b6c1-079c9ded3931"
}
```

Example Responses

Status code: 202

The request is accepted. The stack continues to roll back.

```
{
  "deployment_id" : "8592967b-18b0-421b-b6c1-079c9ded3931"
}
```

Status Codes

Status Code	Description
202	The request is accepted. The stack continues to roll back.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack status. 2. The user does not have the permission to call this API.
404	The stack does not exist.
409	Request conflict. Another request is being processed on the current stack.
429	Too frequent requests.
500	Internal server error.

2.3 Resource Formation-Execution Plans

2.3.1 Listing Execution Plans

Function

ListExecutionPlans

This API lists all execution plans of a specified stack in the current region.

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- By default, the execution plans are sorted by creation time in descending order. The one created latest is displayed on the top.
- If the specified stack does not have any execution plan, an empty list is returned.
- If the specified stack does not exist, 404 is returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListExecutionPlans returns only the summary information. You can obtain details about the summary information by referring to ListExecutionPlansResponseBody. For detailed execution plan metadata, call GetExecutionPlanMetadata.

URI

GET /v1/{project_id}/stacks/{stack_name}/execution-plans

Table 2-236 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-237 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-238 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-239 Response body parameters

Parameter	Type	Description
execution_plans	Array of **ExecutionPlan** objects	Execution plan list, sorted by creation time in descending order. The one created latest is displayed on the top.
page_info	**page_info** object	Pagination information

Table 2-240 ExecutionPlan

Parameter	Type	Description
stack_name	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Parameter	Type	Description
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Type	Description
execution_plan_id	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned. **Note:** • The RFS will persist the request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous requests and processes them in order when the sever is idle. The maximum waiting time for each request is 1 hours.
execution_plan_name	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
description	String	Execution plan description. It is used to identify your own execution plans.

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Parameter	Type	Description
status	String	Status of an execution plan. • CREATION_IN_PROGRESS indicates that creation is in progress. • CREATION_FAILED indicates the creation failed. You can obtain the error information summary from status_message. • AVAILABLE indicates the creation completed. You can call ApplyExecutionPlan to apply the plan. • APPLY_IN_PROGRESS indicates the execution is in progress. You can call GetStackMetadata to query the stack status, or call ListStackEvents to obtain the stack events generated during the execution. • APPLIED indicates the plan has been applied.
status_message	String	If an execution plan is in a CREATION_FAILED status, a brief error information summary is displayed for debugging.
create_time	String	Creation time of an execution plan. The format complies with the RFC 3339 format (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
apply_time	String	Time when an execution plan was applied. The format complies with the RFC 3339 format (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

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Table 2-241 page_info

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-242 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-243 Detail

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

Status code: 401

Table 2-244 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-245 Detail

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

Status code: 403

Table 2-246 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-247 Detail

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

Status code: 404

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Table 2-248 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-249 Detail

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

Status code: 429

Table 2-250 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-251 Detail

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

Status code: 500

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Table 2-252 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-253 Detail

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

Example Requests

- List all execution plans of a specified stack.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans
  ```

- List all execution plans of a specified stack with a stack ID to check whether the stack ID matches the current stack.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans?stack_id=f689e9fd-97e7-4185-bd8a-7d5f708d45d7
  ```

Example Responses

Status code: 200

Execution plans listed.

```
{
  "execution_plans" : [ {
    "stack_name" : "my_hello_world_stack",
    "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "execution_plan_id" : "b3e7e15f-f96b-4190-94f4-bb8120f8c4dc",
    "execution_plan_name" : "my_third_execution_plan",
    "description" : "my third execution plan",
    "status" : "AVAILABLE",
    "create_time" : "2023-05-15T15:39:25Z"
  }, {
    "stack_name" : "my_hello_world_stack",
    "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "execution_plan_id" : "3ca87537-8d5c-4c9d-9292-d19068aaacbb",
    "execution_plan_name" : "my_second_execution_plan",
    "description" : "my second execution plan",
    "status" : "APPLIED",
    "create_time" : "2023-05-15T15:32:45Z"
  }, {
    "stack_name" : "my_hello_world_stack",
```

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```
    "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "execution_plan_id" : "8c1fb31d-9eec-4ce3-a4e6-fd07059cec83",
    "execution_plan_name" : "my_first_execution_plan",
    "description" : "my first execution plan",
    "status" : "CREATION_FAILED",
    "status_message" : "Failed to init workflow due to bad template. Error: Invalid variable name A name
must start with a letter or underscore and may contain only letters, digits, underscores, and dashes.",
    "create_time" : "2023-05-15T12:23:38Z"
  } ],
  "page_info" : {
    "current_count" : 3,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Execution plans listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.3.2 Creating an Execution Plan

Function

CreateExecutionPlan

This API creates an execution plan in a specified stack. An execution plan describes the differences between the resource status recorded in the current stack and the target resource status described in the template. For example, resource A will be generated according to the following configuration file, and resource B will change the following parameters from XXX to YYY.

After an execution plan is created by calling this API, you can query the execution plan status by calling GetExecutionPlanMetadata. Once the execution plan is in an AVAILABLE state, you can call GetExecutionPlan to obtain the execution result.

An execution plan does not support in-depth checks and verification, such as whether the user has the permission to generate or modify resources.

Note:

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- When creating an execution plan, the specified resource stack must exist. If the specified resource stack does not exist, 404 is returned, and the user can create a resource stack by calling the CreateStack API.
- If the request does not contain template_body or template_uri, 400 is returned.
- Once a stack is deployed, all execution plans created before this deployment becomes invalid.
- An execution plan indicates only the resource configurations at the creation time. Once created, it will not automatically update upon your manual changes to the resource status.
- If the stack is in a DEPLOYMENT_IN_PROGRESS, ROLLBACK_IN_PROGRESS, or DELETION_IN_PROGRESS state, execution plans cannot be created and 403 is returned.

URI

POST /v1/{project_id}/stacks/{stack_name}/execution-plans

Table 2-254 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Request Parameters

Table 2-255 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-256 Request body parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
template_body	No	String	HCL template. It describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Either template_body or template_uri must be specified but they both cannot be specified together. In the CreateStack API, template_body and template_uri are optional. **Note:** • template_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding template_body in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed file cannot contain the .tfvars file and must be encoded in UTF8 format (the .tf.json file cannot contain the BOM header). The .zip package supports a maximum of 100 subfiles. Either template_body or template_uri must be specified. In the CreateStack API, template_body and template_uri are optional. **Note**: • The template file corresponds to template_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the content of the template file in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
			• If the template file corresponding to template_uri is of zip type, the length of the internal file or folder name must not exceed 255 bytes, the length of the deepest path must not exceed 2048 bytes, and the size of the zip package must not exceed 1MB.
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
description	No	String	Execution plan description. It is used to identify your own execution plans.

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Parameter	Mandatory	Type	Description
vars_structure	No	Array of VarsStructure objects	HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • var_structure allows string variables. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • vars_structure only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use vars_uri and vars_body, which support various types and complex structures supported by HCL. • If vars_structure is too large, you can use vars_uri. • Note: vars_structure cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to set the encryption field.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • If vars_body is too large, you can use vars_uri. • If the content in vars is simple strings, you can use var_structure. • vars_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

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Parameter	Mandatory	Type	Description
vars_uri	No	String	OBS address of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. Ensure that the OBS address is located in the same region as the RFS. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. • vars_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.

Table 2-257 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	Variable name.

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Parameter	Mandatory	Type	Description
var_value	Yes	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body.
encryption	No	**EncryptionStructure** object	If a transferred var_value has been encrypted, you can declare this variable to require RFS to decrypt the var_value before using it. Currently, only KMS encryption and decryption are supported.

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Table 2-258 EncryptionStructure

Parameter	Mandatory	Type	Description
kms	Yes	**KmsStructure** object	If an assigned var_value is encrypted by KMS, related encryption information can be transferred. RFS will help you decrypt the var_value by KMS. For more details about KMS encryption and its sample code, refer to **KMS Application Scenarios**. **Note:** • The agency you specify for RFS should have the operation permissions on the specified key ID. • KMS provides a quota for free trial every month. If the quota is exceeded, you will be billed for KMS. The fee is not billed by RFS. **More details** • KMS encryption only indicates that RFS uses ciphertext for storage and transmission. However, RFS still uses plaintext in stack-events. If you want RFS to use ciphertext in logs, you can declare sensitive in templates. For more information about sensitive, refer to **https://developer.hashicorp.com/terraform/tutorials/configuration-language/sensitive-variables**

Table 2-259 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.

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Parameter	Mandatory	Type	Description
cipher_text	Yes	String	Ciphertext of data encryption key.

Response Parameters

Status code: 202

Table 2-260 Response body parameters

Parameter	Type	Description
execution_plan_id	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned. **Note:** • The RFS will persist the request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous requests and processes them in order when the sever is idle. The maximum waiting time for each request is 1 hours.

Status code: 400

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Table 2-261 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-262 Detail

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

Status code: 401

Table 2-263 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-264 Detail

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

Status code: 403

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Table 2-265 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-266 Detail

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

Status code: 409

Table 2-267 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-268 Detail

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

Status code: 429

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Table 2-269 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-270 Detail

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

Status code: 500

Table 2-271 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-272 Detail

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

Example Requests

- Create an execution plan in a specified stack based on the template URI.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans
```

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```
{
  "execution_plan_name" : "my_first_execution_plan",
  "template_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/vpc.tf"
}
```

- Create an execution plan in a specified stack based on the template. RFS supports the HCL syntax, and source field of required_providers module, which is used to define provider path, should be as the format of huawei.com/provider/{provider_name} (for example: huawei.com/provider/huaweicloud).

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans

{
  "execution_plan_name" : "my_second_execution_plan",
  "template_body" : "terraform {\n    required_providers {\n      huaweicloud = {\n        source = \"huawei.com/provider/huaweicloud\"\n        version = \"1.41.0\"\n      }\n    }\n}\nprovider \"huaweicloud\"{\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n endpoints = {\n        iam = \"{iam_endpoint}\"\n    }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "execution_plan_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of execution plans has been reached.
409	Creation requests conflict. An execution plan with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.3.3 Obtaining Execution Plans

Function

GetExecutionPlan

This API obtains the details (items) of a specified execution plan. By calling this API, you can check the changes of resources in a stack once the specified execution plan is applied.

If the execution plan is in a CREATION_IN_PROGRESS or CREATION_FAILED state, the list of execution plan items will not be returned.

URI

GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}

Table 2-273 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-274 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned.

Request Parameters

Table 2-275 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-276 Response body parameters

Parameter	Type	Description
execution_plan_items	Array of **ExecutionPlanItem** objects	Item list of an execution plan.

Table 2-277 ExecutionPlanItem

Parameter	Type	Description

resource_type	String	Resource type.
		For example, in the following HCL template, the value of resource_type is huaweicloud_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_type is huaweicloud_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

resource_name	String	Resource name. The default value is the logical name of a resource.
		For example, in the following HCL template, the value of resource_name is my_hello_world_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_name is my_hello_world_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

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Parameter	Type	Description

index	String	Resource index. If count or for_each is used in a template, index is returned. If index appears, resource_name and index can be used to identify a resource.
		If count is used in a template, index is a number starting from 0.
		For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  count = 2`
		`  name = "test_vpc"`
		`}`
		In a JSON template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.
		`{`
		`  "resource": {`
		`  "huaweicloud_vpc": {`
		`  "my_hello_world_vpc": {`
		`  "name": "test_vpc",`
		`  "count": 2`
		`  }`
		`  }`
		`  }`
		`}`
		If for_each is used in a template, index is a user-defined string.
		For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  for_each = {`
		`  "vpc1" = "test_vpc"`
		`  "vpc2" = "test_vpc"`
		`  }`
		`  name = each.value`
		`}`
		In a JSON template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.

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Parameter	Type	Description

		{
		"resource": {
		"huaweicloud_vpc": {
		"my_hello_world_vpc": {
		"for_each": {
		"vpc1": "test_vpc",
		"vpc2": "test_vpc"
		}
		"name": "${each.value}"
		}
		}
		}
		}

action	String	Resource change types may include: • ADD: adds a resource. • ADD_THEN_DELETE: creates a resource and then deletes the old one. It is returned by resources those cannot be updated. • DELETE: deletes a resource. • DELETE_THEN_ADD: deletes the old resource and then creates a new one. It is returned by resources those cannot be updated. • UPDATE: updates a resource. • NO_OPERATION: only changes the dependencies of a resource. The resource itself is not changed.
action_reason	String	Reason for triggering project changes, for example, a user updates a template or a resource is deleted remotely.
provider_name	String	Name of the provider to which the project belongs.
mode	String	Resource modes may include: • DATA: a type of resource that can run and obtain server data during template parsing. Operations on infrastructure components are not involved. • RESOURCE: important infrastructure objects defined by services and managed by templates. It can be physical resources or logical resources.

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Parameter	Type	Description
drifted	Boolean	Whether the change of the current resource is caused by deviation. Deviation, also called drift. After a resource is created by RFS but not modified by RFS, for example, modified manually or by SDK, the resource configuration will be inconsistent with that recorded by RFS. This inconsistency is called deviation. After a resource deviation occurs: ● If you attempt to create an execution plan, a message is displayed, indicating that a deviation occurs. ● If you directly deploy an execution plan, the deviation may be overwritten. RFS only ensures that the resources are configured as written in the template. The resource deviation types may include: ● Modification of resource location attribute: mostly happens after a resource is deleted and then a new one is created. The new resource is not the same one before modification. In this case, RFS considers that the original resource has been deleted and attempts to create a new resource. ● Modification of resource common attribute: RFS can still find the resource, but it will attempt to rectify the deviation during the next deployment to make the resource configuration be consistent with that written in the template. **Note: It is advised to use RFS to maintain and update resources created on RFS to ensure that resource configurations are consistent with those written in your templates. Avoid modifying resources manually except for emergencies.**
imported	Boolean	Whether changes to the current resource are imported.

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Parameter	Type	Description
resource_id	String	Unique resource physical ID. It is generated by the resource provider, cloud service provider, or other service providers during resource deployment.
attributes	Array of **ExecutionPlanDiffAttribute** objects	Execution plan item attributes that are changed. If no attribute is changed, this value is an empty list.

Table 2-278 ExecutionPlanDiffAttribute

Parameter	Type	Description
name	String	Name of the to-be-modified parameter of the current resource.
previous_value	String	Original value of the modified parameter of the current resource. During resource creation, previous_value is empty. If a deviation occurs in a remote resource, the resource returns two ExecutionPlanItems, the drifted values of which are true and false, respectively. • The previous_value whose drifted is true indicates the original resource attribute and status in the stack. • The previous_value whose drifted is false indicates the resource attribute and status returned by the remote resource after the provider requests the remote resource. If no deviation occurs in a remote resource, only one ExecutionPlanItem whose drifted is false is returned. • The previous_value whose drifted is false indicates the original resource attribute and status in the stack.

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Parameter	Type	Description
target_value	String	Target value of the modified parameter of the current resource. During resource deletion, target_value is empty. If a deviation occurs in a remote resource, the resource returns two ExecutionPlanItems, the drifted values of which are true and false, respectively. • The target_value whose drifted is true indicates the resource attribute and status returned by the remote resource after the provider requests the remote resource. • The target_value whose drifted is false indicates the resource attribute and status updated based on your template. If no deviation occurs in a remote resource, only one ExecutionPlanItem whose drifted is false is returned. • The target_value whose drifted is false indicates the resource attribute and status updated based on your template.

Status code: 400

Table 2-279 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-280 Detail

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

Status code: 401

Table 2-281 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-282 Detail

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

Status code: 403

Table 2-283 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-284 Detail

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

Status code: 404

Table 2-285 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-286 Detail

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

Status code: 429

Table 2-287 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-288 Detail

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

Status code: 500

Table 2-289 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-290 Detail

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

Example Requests

- Obtain the details (items) of a specified execution plan.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan
  ```

- Obtain the details (items) of a specified execution plan, with a stack ID and an execution plan ID provided to check whether they match the current stack and execution plan.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f
  ```

Example Responses

Status code: 200

Execution plan details obtained.

```
{
  "execution_plan_items" : [ {
```

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```
  "resource_type" : "huaweicloud_iec_vpc_subnet",
  "resource_name" : "subnet",
  "action" : "ADD",
  "attributes" : [ {
    "name" : "cidr",
    "target_value" : "172.16.0.0/16"
  }, {
    "name" : "dhcp_enable",
    "target_value" : "true"
  }, {
    "name" : "dns_list",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "gateway_ip",
    "target_value" : "192.168.128.1"
  }, {
    "name" : "id",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "name",
    "target_value" : "subnet_demo"
  }, {
    "name" : "region"
  }, {
    "name" : "site_id",
    "target_value" : "mock_site_id"
  }, {
    "name" : "site_info",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "status",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "timeouts"
  }, {
    "name" : "vpc_id",
    "target_value" : "mock_vpc_id"
  } ],
  "mode" : "RESOURCE",
  "provider_name" : "huawei.com/provider/huaweicloud"
}, {
  "resource_type" : "huaweicloud_vpc",
  "resource_name" : "vpc",
  "action" : "ADD",
  "attributes" : [ {
    "name" : "cidr",
    "target_value" : "172.16.0.0/16"
  }, {
    "name" : "description"
  }, {
    "name" : "enterprise_project_id",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "id",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "name",
    "target_value" : "test_name"
  }, {
    "name" : "region",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "routes",
    "target_value" : "(will be generated after apply)"
  }, {
    "name" : "secondary_cidr"
  }, {
    "name" : "status",
    "target_value" : "(will be generated after apply)"
```

```
    }, {
      "name" : "tags"
    }, {
      "name" : "timeouts"
    } ],
    "mode" : "RESOURCE",
    "provider_name" : "huawei.com/provider/huaweicloud"
  } ]
}
```

Status Codes

Status Code	Description
200	Execution plan details obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	1. The stack does not exist. 2. The execution plan does not exist.
429	Too frequent requests.
500	Internal server error.

2.3.4 Applying an Execution Plan

Function

ApplyExecutionPlan

This API applies an execution plan.

- Once the execution request is received, the state of the execution plan changes to APPLY_IN_PROGRESS, and the request is processed asynchronously in the background.
- Once the execution is completed, the state of the execution plan changes to APPLIED.
- You can call GetStackMetadata to query the stack status to trace the stack deployment status and check whether the execution is successful.
- If resources defined in template (including imported resources) are deleted, the actual resources will be deleted when execution plan is applied. You can call GetStackMetadata or ListStacks to track the deletion.

If you do not want to deploy a stack using an execution plan, you can call DeployStack for direct deployment.

Expiration of execution plans:

1. If a stack has multiple execution plans, all the remaining plans will expire once any of them is applied (regardless of whether the execution is successful).
2. If the specified execution plan has expired when you call ApplyExecutionPlan, 403 is returned.

If a stack is in a non-final state (ending with IN_PROGRESS), its execution plans cannot be applied and 403 is returned. The non-final states may include:

- DEPLOYMENT_IN_PROGRESS
- DELETION_IN_PROGRESS
- ROLLBACK_IN_PROGRESS

URI

POST /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}

Table 2-291 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Request Parameters

Table 2-292 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-293 Request body parameters

Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned. **Note:** • The RFS will persist the request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous requests and processes them in order when the sever is idle. The maximum waiting time for each request is 1 hours.

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Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

Response Parameters

Status code: 202

Table 2-294 Response body parameters

Parameter	Type	Description
deployment_id	String	Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered. Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status. **Note:** • The RFS will persist the deployment request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous deployment requests and processes them in order. The maximum waiting time for each deployment is 6 hours.

Status code: 400

Table 2-295 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-296 Detail

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

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Status code: 401

Table 2-297 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-298 Detail

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

Status code: 403

Table 2-299 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-300 Detail

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

Status code: 404

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Table 2-301 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-302 Detail

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

Status code: 409

Table 2-303 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-304 Detail

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

Status code: 429

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Table 2-305 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-306 Detail

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

Status code: 500

Table 2-307 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-308 Detail

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

Example Requests

- Apply an execution plan of a specified stack.

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```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
execution-plans/my_first_execution_plan
```

- Apply an execution plan of a specified stack, with a stack ID provided to check whether the stack ID matches the current stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
execution-plans/my_first_execution_plan

{
  "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7"
}
```

- Apply an execution plan of a specified stack, with an execution plan ID provided to check whether the execution plan ID matches the current execution plan.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
execution-plans/my_first_execution_plan

{
  "execution_plan_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

- Apply an execution plan of a specified stack, with a stack ID and an execution plan ID provided to check whether the stack ID matches the current stack and the execution plan ID matches the current execution plan.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/
execution-plans/my_first_execution_plan

{
  "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
  "execution_plan_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "deployment_id" : "07e21c3e-d33c-4513-9d0f-e9e673817772"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. Invalid stack status. 3. The execution plan has expired.
404	1. The stack does not exist. 2. The execution plan does not exist.

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Status Code	Description
409	Execution requests conflict. Another request is being processed on the execution plan.
429	Too frequent requests.
500	Internal server error.

2.3.5 Deleting an Execution Plan

Function

DeleteExecutionPlan

This API deletes an execution plan.

If an execution plan is in a CREATION_IN_PROGRESS or APPLY_IN_PROGRESS state, the execution plan cannot be deleted and 403 is returned.

URI

DELETE /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}

Table 2-309 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-310 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned.

Request Parameters

Table 2-311 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 204

Execution plan deleted.

Status code: 400

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Table 2-312 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-313 Detail

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

Status code: 401

Table 2-314 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-315 Detail

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

Status code: 403

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Table 2-316 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-317 Detail

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

Status code: 404

Table 2-318 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-319 Detail

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

Status code: 500

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Table 2-320 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-321 Detail

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

Example Requests

- Delete an execution plan of a specified stack.

  ```
  DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan
  ```

- Delete an execution plan of a specified stack, with a stack ID and an execution plan ID provided to check whether they match the current stack and execution plan.

  ```
  DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Execution plan deleted.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The execution plan cannot be deleted due to its invalid status.

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Status Code	Description
404	1. The stack does not exist. 2. The execution plan does not exist.
500	Internal server error.

2.3.6 Obtaining Execution Plan Metadata

Function

GetExecutionPlanMetadata

This API obtains the metadata of a specified execution plan, including the ID and name of the stack and the ID, name, description, creation time, execution time, and status of the execution plan.

You can obtain details by referring to GetExecutionPlanMetadataResponseBody.

To obtain the details of an execution plan, call GetExecutionPlan.

URI

GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}/metadata

Table 2-322 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Parameter	Mandatory	Type	Description
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

Table 2-323 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned.

Request Parameters

Table 2-324 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-325 Response body parameters

Parameter	Type	Description
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.
stack_name	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Parameter	Type	Description
execution_plan_id	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned. **Note:** • The RFS will persist the request and return the response immediately. Clients do not need to wait for the request to be processed. Therefore, users cannot detect the result in real-time. • RFS queues these asynchronous requests and processes them in order when the sever is idle. The maximum waiting time for each request is 1 hours.
execution_plan_name	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
description	String	Execution plan description. It is used to identify your own execution plans.

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Parameter	Type	Description
vars_structure	Array of **VarsStructure** objects	HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. • var_structure allows string variables. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. • vars_structure only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use vars_uri and vars_body, which support various types and complex structures supported by HCL. • If vars_structure is too large, you can use vars_uri. • Note: vars_structure cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to set the encryption field.
vars_uri_content	String	File content corresponding to vars_uri.

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Parameter	Type	Description
vars_body	String	Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes. ● The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. ● RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error code 400 will be reported. ● If vars_body is too large, you can use vars_uri. ● If the content in vars is simple strings, you can use var_structure. ● vars_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding vars in plaintext. If the information is sensitive, you are advised to use vars_structure and set the encryption field for transmission.
status	String	Status of an execution plan. ● CREATION_IN_PROGRESS indicates that creation is in progress. ● CREATION_FAILED indicates the creation failed. You can obtain the error information summary from status_message. ● AVAILABLE indicates the creation completed. You can call ApplyExecutionPlan to apply the plan. ● APPLY_IN_PROGRESS indicates the execution is in progress. You can call GetStackMetadata to query the stack status, or call ListStackEvents to obtain the stack events generated during the execution. ● APPLIED indicates the plan has been applied.

Parameter	Type	Description
status_message	String	If an execution plan is in a CREATION_FAILED status, a brief error information summary is displayed for debugging.
create_time	String	Creation time of an execution plan. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
apply_time	String	Time of applying an execution plan. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
summary	**ExecutionPlanSummary** object	Summary of the execution plan result may include: • Number of resources to be added. • Number of resources to be updated. • Number of resources to be deleted. • The summary is returned only when the execution plan is in the following states: *AVAILABLE*, *APPLY_IN_PROGRESS* or *APPLIED*. • The summary also includes resource changes brought by a drift. The resource status drift is caused by inconsistency between the resource status recorded in the stack and the remote resource status. **Note:**

Table 2-326 VarsStructure

Parameter	Type	Description
var_key	String	Variable name.
var_value	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body.

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Parameter	Type	Description
encryption	**EncryptionStructure** object	If a transferred var_value has been encrypted, you can declare this variable to require RFS to decrypt the var_value before using it. Currently, only KMS encryption and decryption are supported.

Table 2-327 EncryptionStructure

Parameter	Type	Description
kms	**KmsStructure** object	If an assigned var_value is encrypted by KMS, related encryption information can be transferred. RFS will help you decrypt the var_value by KMS. For more details about KMS encryption and its sample code, refer to **KMS Application Scenarios**. **Note:** • The agency you specify for RFS should have the operation permissions on the specified key ID. • KMS provides a quota for free trial every month. If the quota is exceeded, you will be billed for KMS. The fee is not billed by RFS. **More details** • KMS encryption only indicates that RFS uses ciphertext for storage and transmission. However, RFS still uses plaintext in stack-events. If you want RFS to use ciphertext in logs, you can declare sensitive in templates. For more information about sensitive, refer to **https://developer.hashicorp.com/terraform/tutorials/configuration-language/sensitive-variables**

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Table 2-328 KmsStructure

Parameter	Type	Description
id	String	KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.
cipher_text	String	Ciphertext of data encryption key.

Table 2-329 ExecutionPlanSummary

Parameter	Type	Description
resource_add	Integer	Number of new resources.
resource_update	Integer	Number of updated resources.
resource_delete	Integer	Number of deleted resources.
resource_import	Integer	Number of imported resources.

Status code: 400

Table 2-330 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-331 Detail

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

Status code: 401

Table 2-332 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-333 Detail

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

Status code: 403

Table 2-334 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-335 Detail

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

Status code: 404

Table 2-336 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-337 Detail

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

Status code: 429

Table 2-338 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-339 Detail

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

Status code: 500

Table 2-340 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-341 Detail

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

Example Requests

- Obtain the metadata of a specified execution plan.

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan/metadata
```

- Obtain the metadata of a specified execution plan, with a stack ID and an execution plan ID provided to check whether they match the current stack and execution plan.

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan/metadata?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f
```

Example Responses

Status code: 200

Execution plan metadata obtained.

```
{
  "stack_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
  "stack_name" : "my_hello_world_stack",
  "execution_plan_id" : "ebc0979a-c617-4382-9147-57fc83a634aa",
  "execution_plan_name" : "my_first_execution_plan",
  "status" : "APPLIED",
  "apply_time" : "2023-05-17T11:56:40Z",
  "create_time" : "2023-05-16T03:37:24Z",
  "summary" : {
    "resource_add" : 2
  }
}
```

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Status Codes

Status Code	Description
200	Execution plan metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	1. The execution plan does not exist. 2. The stack does not exist.
429	Too frequent requests.
500	Internal server error.

2.3.7 Estimating the Price of an Execution Plan

Function

EstimateExecutionPlanPrice

This API queries the price of new resources in an existing execution plan. Currently, price inquiry is supported in the following billing modes: yearly/monthly, pay-per-use, and free. Other billing modes, such as spot pricing, do not support price inquiry.

Note:

- Some resource attributes may contain default values and are related to price inquiry parameters. If they are not declared for the resources in your template, the inquiry result may be inaccurate.
  - The price inquiry result is an estimation for reference only.
  - If the **depends_on** variable is used in the template, for example, the mandatory fields for price inquiry of resource A depend on the creation of resource B, resource A does not support price query.
  - Price inquiry is not supported for when a data source's **flavor.id** is transferred.
- Price inquiry is not supported for images.
- Price inquiry is not supported for resource A if the required field "sensitive" of resource A is set to true.
  - Price inquiry is supported for a limited number of resources in the template. Currently, a maximum of 12 yearly/monthly-billed resources and 24 pay-per-use resources are supported.
  - Resources that support price inquiry and parameters required for price inquiry:

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- huaweicloud_cce_cluster:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_css_cluster:
  - Supported billing mode: pay-per-use
- huaweicloud_evs_volume:
  - Supported billing modes: yearly/monthly and pay-per-use
  - Parameter required for price inquiry: **size** (disk specifications)
- huaweicloud_compute_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
  - Parameters required for price inquiry: **flavor_id**, **flavor_name** (either **flavor_id** or **flavor_name** must be specified.), and **system_disk_size**.
- huaweicloud_vpc_bandwidth:
  - Supported billing mode: pay-per-use
  - Parameter required for price inquiry: **charge_mode** supports only **bandwidth**.
- huaweicloud_vpc_eip:
  - Supported billing modes: yearly/monthly and pay-per-use
  - Parameter required for price inquiry: **bandwidth.size**
- huaweicloud_gaussdb_redis_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_nat_gateway:
  - Supported billing mode: pay-per-use
- huaweicloud_rds_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
  - Supported database type: MySQL, PostgreSQL, Microsoft SQL Server
- huaweicloud_sfs_turbo:
  - Supported billing mode: pay-per-use
  - Parameter required for price inquiry: **share_type** (file system type)
- huaweicloud_dms_kafka_instance:
  - Supported billing mode: pay-per-use
  - Parameters required for price inquiry: either **flavor_id** or **product_id**, and **storage_space**
- huaweicloud_dcs_instance:
  - Supported billing modes: yearly/monthly and pay-per-use

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- huaweicloud_gaussdb_mysql_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
  - Parameters required for price inquiry: **proxy_node_number** (number of proxy nodes) and **volume_size** (storage space of mounted volumes)
- huaweicloud_vpc:
  - Supported billing mode: free
- huaweicloud_drs_job:
  - Supported billing mode: pay-per-use
- huaweicloud_apig_instance:
  - Supported billing mode: pay-per-use
- huaweicloud_dms_rabbitmq_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_hss_quota:
  - Supported billing modes: yearly/monthly
- huaweicloud_hss_host_protection:
  - Supported billing modes: pay-per-use
- huaweicloud_cbr_vault:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_cbh_instance:
  - Supported billing modes: yearly/monthly
- huaweicloud_cbh_ha_instance:
  - Supported billing modes: yearly/monthly
- huaweicloud_waf_cloud_instance:
  - Supported billing modes: yearly/monthly
- huaweicloud_lb_loadbalancer:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_elb_loadbalancer:
  - Supported billing modes: pay-per-use
- huaweicloud_modelarts_resource_pool:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_cnad_advanced_black_white_list:
  - Supported billing mode: free
- huaweicloud_cnad_advanced_policy:
  - Supported billing mode: free

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- huaweicloud_cnad_advanced_protected_object:
  - Supported billing mode: free
- huaweicloud_antiddos_basic:
  - Supported billing mode: free
- huaweicloud_obs_bucket:
  - Supported billing mode: free
- huaweicloud_obs_bucket_replication:
  - Supported billing mode: free
- huaweicloud_workspace_desktop:
  - Supported billing modes: pay-per-use
- huaweicloud_dws_cluster:
  - Supported billing modes: pay-per-use
- huaweicloud_dws_ext_data_source:
  - Supported billing mode: free
- huaweicloud_dws_snapshot:
  - Supported billing mode: free
- huaweicloud_dds_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_rds_read_replica_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_cce_node:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_dms_rocketmq_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_gaussdb_opengauss_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_gaussdb_opengauss_instance:
  - Supported billing modes: yearly/monthly and pay-per-use
- huaweicloud_vpcep_endpoint:
  - Supported billing modes: pay-per-use
- huaweicloud_kms_key:
  - Supported billing modes: pay-per-use

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URI

GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}/prices

Table 2-342 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**
stack_name	Yes	String	A stack name is unique within its domain (domain_id), region, and project (project_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.

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Table 2-343 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned.

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Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned.

Request Parameters

Table 2-344 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-345 Response body parameters

Parameter	Type	Description
currency	String	Currency, which can be: • USD: used on Huawei Cloud International website.
items	Array of **ItemsResponse** objects	Inquiry results of all resources in an execution plan.

Table 2-346 ItemsResponse

Parameter	Type	Description

resource_type	String	Resource type.
		For example, in the following HCL template, the value of resource_type is huaweicloud_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_type is huaweicloud_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

resource_name	String	Resource name. The default value is the logical name of a resource.
		For example, in the following HCL template, the value of resource_name is my_hello_world_vpc.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }`
		In a JSON template, the value of resource_name is my_hello_world_vpc.
		`{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }`

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Parameter	Type	Description

index	String	Resource index. If count or for_each is used in a template, index is returned. If index appears, resource_name and index can be used to identify a resource.
		If count is used in a template, index is a number starting from 0.
		For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  count = 2`
		`  name = "test_vpc"`
		`}`
		In a JSON template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.
		`{`
		`  "resource": {`
		`  "huaweicloud_vpc": {`
		`  "my_hello_world_vpc": {`
		`  "name": "test_vpc",`
		`  "count": 2`
		`  }`
		`  }`
		`  }`
		`}`
		If for_each is used in a template, index is a user-defined string.
		For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.
		`resource "huaweicloud_vpc" "my_hello_world_vpc" {`
		`  for_each = {`
		`  "vpc1" = "test_vpc"`
		`  "vpc2" = "test_vpc"`
		`  }`
		`  name = each.value`
		`}`
		In a JSON template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.

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Parameter	Type	Description

		{
		"resource": {
		"huaweicloud_vpc": {
		"my_hello_world_vpc": {
		"for_each": {
		"vpc1": "test_vpc",
		"vpc2": "test_vpc"
		}
		"name": "${each.value}"
		}
		}
		}
		}

module_address	String	Module address of the resource.
supported	Boolean	Whether price inquiry is supported for the resource or its variables.
unsupported_message	String	Causes for not supporting price inquiry.
resource_price	Array of **ResourcePriceResponse** objects	Price inquiry information of the resource. If the resource supports yearly/monthly or pay-per-use billing, or the resource is free of charge, this field is returned. If the resource does not support price inquiry, this field is not returned.

Table 2-347 ResourcePriceResponse

Parameter	Type	Description
charge_mode	String	Billing mode. • PRE_PAID: yearly/monthly • POST_PAID: pay-per-use • FREE: free of charge
sale_price	Double	Final price of the resource (only website, commercial, and partner discounts are considered, and promotion discounts and coupons are excluded). The value is rounded up to two decimal places. The default currency is USD.
discount	Double	Total discounted price of the resource. The value is rounded up to two decimal places. The default currency is USD.

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Parameter	Type	Description
original_price	Double	Original price of the resource. The value is rounded up to two decimal places. The default currency is USD.
period_type	String	Billing unit. If the resource supports yearly/monthly or pay-per-use billing, this field is returned. If the resource is free of charge, this field is not returned. • HOUR: hour, unit of the pay-per-use billing mode. • DAY: day, unit of the pay-per-use billing mode. • MONTH: month, unit of the yearly/monthly billing mode. • YEAR: year, unit of the yearly/monthly billing mode. • BYTE: byte, unit of the pay-per-use billing mode. • MB: megabyte, unit of the yearly/monthly and pay-per-use billing modes. • GB: gigabyte, unit of the yearly/monthly and pay-per-use billing modes.
period_count	Integer	Billed amount of the resource. This parameter must be used together with period_type. If the resource is billed in yearly/monthly or pay-per-use mode, this field is returned. If the resource is free of charge, this field is not returned. • For pay-per-use resources, 1 is returned by default, indicating the price of the resource in one billing unit. • For yearly/monthly-billed resources, the value of this parameter is the same as that of the period field in the template.

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Parameter	Type	Description
best_discount_type	Integer	Max. discount type for the resource. Options for pay-per-use resources: Contract commercial discount: **605** (Huawei Cloud commercial discount - percentage off, fixed price, Huawei Cloud user) and **606** (channel-specific commercial discount - percentage off, fixed price, BP user) Partner discount: **607** (Partner-authorized discount - percentage off) Options for yearly/monthly resources: Contract commercial discount: **605** (Huawei Cloud BE) and **606** (distributor BE) Partner-authorized discount: **607** Promotional discount: **700** Included in the request response if the resource is eligible for a discount.
best_discount_price	Double	Max. discount, rounded up to two decimal places, in USD by default. Included in the request response if the resource is eligible for a discount.
official_website_discount_price	Double	Discount amount available on the official website, rounded up to two decimal places, in USD by default. Included in the request response if the resource is eligible for a discount amount listed on the official website.

Status code: 400

Table 2-348 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-349 Detail

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

Status code: 401

Table 2-350 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-351 Detail

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

Status code: 403

Table 2-352 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-353 Detail

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

Status code: 404

Table 2-354 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-355 Detail

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

Status code: 429

Table 2-356 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-357 Detail

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

Status code: 500

Table 2-358 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-359 Detail

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

Example Requests

- Estimate the price of an execution plan. The execution plan contains a new VPC resource.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan/prices
  ```

- Estimate the price of an execution plan. The execution plan contains a new VPC resource. A stack ID and an execution plan ID are provided to check whether they match the current stack and execution plan.

  ```
  GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan/prices?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f
  ```

Example Responses

Status code: 200

Price inquired.

```
{
  "currency" : "USD",
```

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```
 "items" : [ {
   "resource_type" : "huaweicloud_vpc",
   "resource_name" : "vpc",
   "resource_price" : [ {
     "charge_mode" : "FREE",
     "discount" : 0,
     "original_price" : 0,
     "sale_price" : 0
   } ],
   "supported" : true
 } ]
}
```

Status Codes

Status Code	Description
200	Price inquired.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The execution plan does not exist.
429	Too frequent requests.
500	Internal server error.

2.4 Resource Formation-Template Analysis

2.4.1 Parsing Template Variables

Function

ParseTemplateVariables

This API parses variables in your input template and returns all variable blocks in the template.

- If variables are defined in the input template, 200 and all variables are returned.
- If variables are not defined in the input template, 200 and an empty object are returned.
- If your request or the input template is invalid, 400 is returned.

URI

POST /v1/{project_id}/template-analyses/variables

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Table 2-360 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	A project ID is obtained by calling an API or from the console. **Obtaining a Project ID**

Request Parameters

Table 2-361 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-362 Request body parameters

Parameter	Mandatory	Type	Description
template_body	No	String	HCL template. It describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Either template_body or template_uri must be specified but they both cannot be specified together. In the CreateStack API, template_body and template_uri are optional. **Note:** • template_body cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the corresponding template_body in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the differences between the statuses of this template and the current remote resources. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed file cannot contain the .tfvars file and must be encoded in UTF8 format (the .tf.json file cannot contain the BOM header). The .zip package supports a maximum of 100 subfiles. Either template_body or template_uri must be specified. In the CreateStack API, template_body and template_uri are optional. **Note**: • The template file corresponds to template_uri cannot contain any sensitive information. RFS directly uses, logs, displays, and stores the content of the template file in plaintext. If the information is sensitive, you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.

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Parameter	Mandatory	Type	Description
			• If the template file corresponding to template_uri is of zip type, the length of the internal file or folder name must not exceed 255 bytes, the length of the deepest path must not exceed 2048 bytes, and the size of the zip package must not exceed 1MB.

Response Parameters

Status code: 200

Table 2-363 Response body parameters

Parameter	Type	Description
variables	Array of **VariableResponse** objects	Variables parsed from a template.

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Table 2-364 VariableResponse

Parameter	Type	Description
name	String	Variable name. For example, in the following HCL template, the value of name is my_hello_world_variable. `variable "my_hello_world_variable" { type = string description = "this is a variable" default = "hello world" sensitive = false nullable = false validation { condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello" error_message = "my_hello_world_variable should start with 'hello'." } }` In a JSON template, the value of name is my_hello_world_variable. `{ "variable": { "my_hello_world_variable": [{ "default": "hello world", "description": "this is a variable", "nullable": false, "sensitive": false, "type": "string", "validation": [{ "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}", "error_message": "my_hello_world_variable should start with 'hello'." }] }] } }`

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Parameter	Type	Description

type	String	Variable type.
		For example, in the following HCL template, the value of type is string.
		`variable "my_hello_world_variable" {`
		`  type = string`
		`  description = "this is a variable"`
		`  default = "hello world"`
		`  sensitive = false`
		`  nullable = false`
		`  validation {`
		`  condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello"`
		`  error_message = "my_hello_world_variable should start with 'hello'."`
		`  }`
		`}`
		In a JSON template, the value of type is string.
		`{`
		`  "variable": {`
		`  "my_hello_world_variable": [`
		`  {`
		`  "default": "hello world",`
		`  "description": "this is a variable",`
		`  "nullable": false,`
		`  "sensitive": false,`
		`  "type": "string",`
		`  "validation": [`
		`  {`
		`  "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}",`
		`  "error_message": "my_hello_world_variable should start with 'hello'."`
		`  }`
		`  ]`
		`  }`
		`  ]`
		`  }`
		`}`

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Parameter	Type	Description

description	String	Variable description.
		For example, in the following HCL template, the value of description is *this is a variable*.
		`variable "my_hello_world_variable" {`
		`  type = string`
		`  description = "this is a variable"`
		`  default = "hello world"`
		`  sensitive = false`
		`  nullable = false`
		`  validation {`
		`  condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello"`
		`  error_message = "my_hello_world_variable should start with 'hello'."`
		`  }`
		`}`
		In a JSON template, the value of description is *this is a variable*.
		`{`
		`  "variable": {`
		`  "my_hello_world_variable": [`
		`  {`
		`  "default": "hello world",`
		`  "description": "this is a variable",`
		`  "nullable": false,`
		`  "sensitive": false,`
		`  "type": "string",`
		`  "validation": [`
		`  {`
		`  "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}",`
		`  "error_message": "my_hello_world_variable should start with 'hello'."`
		`  }`
		`  ]`
		`  }`
		`  ]`
		`  }`
		`}`

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Parameter	Type	Description
default	Object	Default variable value. The type of the return value is the same as that defined in the type field. For example, for a variable whose type is string, the type of the return value is string; for a variable whose type is number, the type of the return value is number. For example, in the following HCL template, the value of default is *hello world*. `variable "my_hello_world_variable" { type = string description = "this is a variable" default = "hello world" sensitive = false nullable = false validation { condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello" error_message = "my_hello_world_variable should start with 'hello'." } }` In a JSON template, the value of default is *hello world*. `{ "variable": { "my_hello_world_variable": [{ "default": "hello world", "description": "this is a variable", "nullable": false, "sensitive": false, "type": "string", "validation": [{ "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}", "error_message": "my_hello_world_variable should start with 'hello'." }] }] } }`

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Parameter	Type	Description
sensitive	Boolean	Whether the variable is sensitive. If sensitive is not defined in the variable, false is returned by default. For example, in the following HCL template, the value of sensitive is false. `variable "my_hello_world_variable" { type = string description = "this is a variable" default = "hello world" sensitive = false nullable = false validation { condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello" error_message = "my_hello_world_variable should start with 'hello'." } }` In a JSON template, the value of sensitive is false. `{ "variable": { "my_hello_world_variable": [{ "default": "hello world", "description": "this is a variable", "nullable": false, "sensitive": false, "type": "string", "validation": [{ "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}", "error_message": "my_hello_world_variable should start with 'hello'." }] }] } }`

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Parameter	Type	Description
nullable	Boolean	Whether the variable can be set to null. If nullable is not defined in the variable, true is returned by default. For example, in the following HCL template, the value of nullable is false. `variable "my_hello_world_variable" { type = string description = "this is a variable" default = "hello world" sensitive = false nullable = false validation { condition = length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == "hello" error_message = "my_hello_world_variable should start with 'hello'." } }` In a JSON template, the value of nullable is false. `{ "variable": { "my_hello_world_variable": [{ "default": "hello world", "description": "this is a variable", "nullable": false, "sensitive": false, "type": "string", "validation": [{ "condition": "${length(var.my_hello_world_variable) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello\"}", "error_message": "my_hello_world_variable should start with 'hello'." }] }] } }`
validations	Array of **VariableValidationResponse** objects	Variable verification module.

Table 2-365 VariableValidationResponse

Parameter	Type	Description
condition	String	Variable expression.

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Parameter	Type	Description
error_message	String	Error message generated upon verification failure.

Status code: 400

Table 2-366 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-367 Detail

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

Status code: 401

Table 2-368 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-369 Detail

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

Status code: 403

Table 2-370 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-371 Detail

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

Status code: 429

Table 2-372 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-373 Detail

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

Status code: 500

Table 2-374 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-375 Detail

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

Example Requests

- Parse template variables in the URI.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/template-analyses/variables

{
  "template_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/
my_hello_world_template.zip"
}
```

- Parse template variables in the request. RFS supports the HCL syntax, and source field of required_providers module, which is used to define provider path, should be as the format of huawei.com/provider/{provider_name} (for example: huawei.com/provider/huaweicloud).

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/template-analyses/variables

{
  "template_body" : "terraform {\n    required_providers {\n      huaweicloud = {\n        source =
\"huawei.com/provider/huaweicloud\"\n        version = \"1.41.0\"\n      }\n    }\n}\nprovider
\"huaweicloud\"{\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n
endpoints = {\n        iam = \"{iam_endpoint}\"\n    }\n}\n\nvariable \"name\" {\n  type = string\n
default = \"my_default_vpc\"\n  sensitive = true\n  nullable = true\n  validation {\n  condition     =
```

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```
length(var.name) > 2 && substr(var.name, 0, 2) == \"my\"\n  error_message = \"The name value must be a valid name, starting with my.\"\n  }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = var.name\n}"
}
```

Example Responses

Status code: 200

Variables parsed.

```
{
  "variables" : [ {
    "default" : "my_default_vpc",
    "name" : "name",
    "nullable" : true,
    "sensitive" : true,
    "type" : "string",
    "validations" : [ {
      "condition" : "${length(var.id) > 2 && substr(var.id, 0, 2) == \"my\"}",
      "error_message" : "The id value must be a valid id, starting with my."
    } ]
  } ]
}
```

Status Codes

Status Code	Description
200	Variables parsed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

2.5 Resource Formation-Template Management

2.5.1 Listing Templates

Function

ListTemplates

This API lists all your templates at the current region.

- By default, the templates are sorted by creation time. The template created latest is displayed on the top.
- If no template is available, an empty list will be returned.

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- To obtain details about template versions, call ListTemplateVersions.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListTemplates returns only summaries of templates. You can obtain details about the summaries by referring to ListTemplatesResponseBody. For details about a particular template, call ShowTemplateMetadata.

URI

GET /v1/{project_id}/templates

Table 2-376 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**

Table 2-377 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-378 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-379 Response body parameters

Parameter	Type	Description
templates	Array of **Template** objects	Template list.
page_info	**PageInfo** object	Pagination information

Table 2-380 Template

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service.
template_name	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
template_description	String	Template description. It can be used by users to identify their own templates.
create_time	String	Creation time of a template. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
update_time	String	Update time of a template. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

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Parameter	Type	Description
latest_version_id	String	ID of the latest template version.
latest_version_description	String	Description of the latest template version.

Table 2-381 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-382 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-383 Detail

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

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Status code: 401

Table 2-384 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-385 Detail

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

Status code: 403

Table 2-386 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-387 Detail

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

Status code: 429

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Table 2-388 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-389 Detail

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

Status code: 500

Table 2-390 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-391 Detail

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

Example Requests

List all your templates at the current region.

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```
GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates
```

Example Responses

Status code: 200

Templates listed.

```
{
  "templates" : [ {
    "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c8",
    "template_name" : "my_first_template",
    "template_description" : "Template description",
    "create_time" : "2023-05-09T08:00:00Z",
    "update_time" : "2023-05-09T09:00:00Z",
    "latest_version_description" : "Latest version description",
    "latest_version_id" : "V10"
  }, {
    "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c9",
    "template_name" : "my_second_template",
    "template_description" : "Description",
    "create_time" : "2023-05-09T09:00:00Z",
    "update_time" : "2023-05-09T10:00:00Z",
    "latest_version_description" : "Latest version description",
    "latest_version_id" : "V10"
  } ],
  "page_info" : {
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks=",
    "current_count" : 2
  }
}
```

Status Codes

Status Code	Description
200	Templates listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

2.5.2 Creating a Template

Function

CreateTemplate

This API creates a template and generates its first version.

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- The request must contain either template_uri or template_body. The former is the OBS link of the template content, and the latter is the template content.
- Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one.
- When a template is created, the template version V1 is automatically generated.
- The template has at least one version.

URI

POST /v1/{project_id}/templates

Table 2-392 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**

Request Parameters

Table 2-393 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-394 Request body parameters

Parameter	Mandatory	Type	Description
version_description	No	String	Description of a template version. It can be used by users to identify their own template versions.
template_body	No	String	HCL template. It describes the resources used in the template. You can specify either template_body or template_uri, but not both.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS link of an HCL template. The template describes the target status of a resource. The corresponding file must be a pure **.tf** file or a **.zip** package. A pure **.tf** file must end with **.tf** or **.tf.json** and comply with the HCL syntax. Currently, only the **.zip** package is supported. The file name extension must be **.zip**. The decompressed files cannot contain **.tfvars** files. You can specify either template_body or template_uri, but not both.
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
template_description	No	String	Template description. It can be used by users to identify their own templates.

Response Parameters

Status code: 200

Table 2-395 Response body parameters

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service.
version_id	String	Template version ID.

Status code: 400

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Table 2-396 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-397 Detail

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

Status code: 401

Table 2-398 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-399 Detail

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

Status code: 403

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Table 2-400 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-401 Detail

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

Status code: 409

Table 2-402 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-403 Detail

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

Status code: 429

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Table 2-404 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-405 Detail

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

Status code: 500

Table 2-406 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-407 Detail

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

Example Requests

- Create a template by passing the Terraform template through template_body

```
POST https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates
```

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```
{
  "template_name" : "huaweicloud_vpc_template",
  "template_body" : "terraform {\n  required_providers {\n    huaweicloud = {\n      source = \"huawei.com/provider/huaweicloud\"\n      version = \"1.41.0\"\n    }\n  }\n}\n\nprovider \"huaweicloud\" {\n  insecure = true\n  cloud = \"{cloud_name}\"\n  region = \"{region}\"\n  endpoints = {\n    iam = \"{iam_endpoint}\"\n  }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}"
}
```

- Create a template by referencing the template file stored in Huawei Cloud OBS through template_uri

```
POST https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates

{
  "template_name" : "huaweicloud_vpc_template_obs",
  "template_uri" : "https://{bucket_name}.{region}.myhuaweicloud.com/terraform-templates/vpc-base.tf"
}
```

Example Responses

Status code: 200

Template created.

```
{
  "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c8",
  "version_id" : "V1"
}
```

Status Codes

Status Code	Description
200	Template created.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
409	Creation requests conflict. A template with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.5.3 Deleting a Template

Function

DeleteTemplate

This API deletes a template and all its versions.

**Exercise caution when performing this operation. Deleting a template will delete all its versions. **

- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.

URI

DELETE /v1/{project_id}/templates/{template_name}

Table 2-408 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.

Table 2-409 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.

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Request Parameters

Table 2-410 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 204

Template deleted. No data returned.

Status code: 400

Table 2-411 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-412 Detail

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

Status code: 401

Table 2-413 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-414 Detail

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

Status code: 403

Table 2-415 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-416 Detail

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

Status code: 404

Table 2-417 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-418 Detail

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

Status code: 429

Table 2-419 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-420 Detail

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

Status code: 500

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Table 2-421 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-422 Detail

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

Example Requests

- Delete a template.

  ```
  DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template
  ```

- Delete a template and check whether the template ID matches the current template.

  ```
  DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Template deleted. No data returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template does not exist.
429	Too frequent requests.
500	Internal server error.

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2.5.4 Updating Template Metadata

Function

UpdateTemplateMetadata

This API updates template metadata.

- This API only updates template description.

URI

PATCH /v1/{project_id}/templates/{template_name}/metadata

Table 2-423 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.

Request Parameters

Table 2-424 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-425 Request body parameters

Parameter	Mandatory	Type	Description
template_id	No	String	Unique template ID. It is randomly generated by the template service.
template_description	No	String	Template description. It can be used by users to identify their own templates.

Response Parameters

Status code: 204

Template metadata updated. No data returned.

Status code: 400

Table 2-426 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-427 Detail

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

Status code: 401

Table 2-428 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-429 Detail

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

Status code: 403

Table 2-430 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-431 Detail

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

Status code: 404

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Table 2-432 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-433 Detail

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

Status code: 429

Table 2-434 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-435 Detail

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

Status code: 500

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Table 2-436 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-437 Detail

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

Example Requests

Update template metadata.

```
PATCH https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/metadata

{
  "template_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "template_description" : "my template description"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	Template metadata updated. No data returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template does not exist.
429	Too frequent requests.

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Status Code	Description
500	Internal server error.

2.5.5 Obtaining Template Metadata

Function

ShowTemplateMetadata

This API obtains the metadata of the current template.

To obtain details, you can refer to ShowTemplateMetadataResponseBody. To view all versions of a template, call ListTemplateVersions.

- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.

URI

GET /v1/{project_id}/templates/{template_name}/metadata

Table 2-438 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.

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Table 2-439 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.

Request Parameters

Table 2-440 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-441 Response body parameters

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service.
template_name	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
template_description	String	Template description. It can be used by users to identify their own templates.
create_time	String	Creation time of a template. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

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Parameter	Type	Description
update_time	String	Update time of a template. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

Status code: 400

Table 2-442 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-443 Detail

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

Status code: 401

Table 2-444 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-445 Detail

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

Status code: 403

Table 2-446 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-447 Detail

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

Status code: 404

Table 2-448 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-449 Detail

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

Status code: 429

Table 2-450 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-451 Detail

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

Status code: 500

Table 2-452 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-453 Detail

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

Example Requests

- Obtain the metadata of the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/metadata
  ```

- Obtain the metadata of the current template and check whether the template ID matches the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/metadata?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

Status code: 200

Template metadata obtained.

```
{
  "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c8",
  "template_name" : "my_first_template",
  "template_description" : "Template description",
  "create_time" : "2023-05-09T08:00:00Z",
  "update_time" : "2023-05-09T09:00:00Z"
}
```

Status Codes

Status Code	Description
200	Template metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template does not exist.
429	Too frequent requests.
500	Internal server error.

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2.5.6 Listing Template Versions

Function

ListTemplateVersions

This API lists all template versions in a template.

- By default, the template versions are sorted by creation time. The template created latest is displayed on the top.
- If there is no template version, an empty list will be returned.
- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.
- If the template does not exist, 404 is returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListTemplateVersions returns only summaries of template versions. For details, refer to ListTemplateVersionsResponseBody. To obtain the template version, call ShowTemplateVersionContent.

URI

GET /v1/{project_id}/templates/{template_name}/versions

Table 2-454 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.

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Table 2-455 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-456 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-457 Response body parameters

Parameter	Type	Description
versions	Array of **TemplateVersion** objects	Template version list.
page_info	**PageInfo** object	Pagination information

Table 2-458 TemplateVersion

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service.
template_name	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
version_description	String	Description of a template version. It can be used by users to identify their own template versions.
create_time	String	Creation time of a template version. The format complies with RFC3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.
version_id	String	Template version ID.

Table 2-459 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.

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Parameter	Type	Description
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-460 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-461 Detail

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

Status code: 401

Table 2-462 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-463 Detail

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

Status code: 403

Table 2-464 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-465 Detail

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

Status code: 404

Table 2-466 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-467 Detail

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

Status code: 429

Table 2-468 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-469 Detail

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

Status code: 500

Table 2-470 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-471 Detail

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

Example Requests

- List all versions of the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions
  ```

- List all versions of the current template and check whether the template ID matches the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions?
  template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

Status code: 200

Template versions listed.

```
{
  "versions" : [ {
    "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c8",
    "template_name" : "my_first_template",
    "version_description" : "Second version of the current template",
    "create_time" : "2023-05-09T08:01:24Z",
    "version_id" : "V2"
  }, {
    "template_id" : "69f8d5ea-eaa4-4a3b-a96d-bae9230e97c8",
    "template_name" : "my_first_template",
    "version_description" : "First version of the current template",
    "create_time" : "2023-05-09T08:01:23Z",
    "version_id" : "V1"
  } ],
  "page_info" : {
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks=",
    "current_count" : 2
  }
}
```

Status Codes

Status Code	Description
200	Template versions listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.

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Status Code	Description
404	The template does not exist.
429	Too frequent requests.
500	Internal server error.

2.5.7 Creating a Template Version

Function

CreateTemplateVersion

This API creates a template version.

- The request must contain either template_uri or template_body. The former is the OBS link of the template content, and the latter is the template content.
- The ID of the new template version is automatically increased by 1 based on the maximum template version ID.
- For details about how to create a template version, refer to CreateTemplateVersionRequestBody.
- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.

URI

POST /v1/{project_id}/templates/{template_name}/versions

Table 2-472 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**

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Parameter	Mandatory	Type	Description
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.

Table 2-473 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.

Request Parameters

Table 2-474 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-475 Request body parameters

Parameter	Mandatory	Type	Description
version_description	No	String	Description of a template version. It can be used by users to identify their own template versions.

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Parameter	Mandatory	Type	Description
template_body	No	String	HCL template. It describes the resources used in the template. You can specify either template_body or template_uri, but not both.
template_uri	No	String	OBS link of an HCL template. The template describes the target status of a resource. The corresponding file must be a pure **.tf** file or a **.zip** package. A pure **.tf** file must end with **.tf** or **.tf.json** and comply with the HCL syntax. Currently, only the **.zip** package is supported. The file name extension must be **.zip**. The decompressed files cannot contain **.tfvars** files. You can specify either template_body or template_uri, but not both.

Response Parameters

Status code: 200

Table 2-476 Response body parameters

Parameter	Type	Description
version_id	String	Template version ID.

Status code: 400

Table 2-477 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-478 Detail

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

Status code: 401

Table 2-479 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-480 Detail

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

Status code: 403

Table 2-481 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-482 Detail

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

Status code: 404

Table 2-483 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-484 Detail

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

Status code: 429

Table 2-485 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-486 Detail

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

Status code: 500

Table 2-487 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-488 Detail

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

Example Requests

- Create a template version through template_body

```
POST https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/{template_name}/versions

{
  "template_body" : "terraform {\n  required_providers {\n    huaweicloud = {\n      source =
```

```
\"huawei.com/provider/huaweicloud\"\n      version = \"1.41.0\"\n    }\n  }\n}\n\nprovider \"huaweicloud\" {\n  insecure = true\n  cloud = \"{cloud_name}\"\n  region = \"{region}\"\n  endpoints = {\n    iam = \"{iam_endpoint}\"\n  }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}"
}
```

- Create a template version through template_uri (OBS link)

```
POST https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/{template_name}/versions

{
  "template_uri" : "https://{bucket_name}.{region}.myhuaweicloud.com/terraform-templates/vpc-version-2.tf"
}
```

Example Responses

Status code: 200

Template version created.

```
{
  "version_id" : "V10"
}
```

Status Codes

Status Code	Description
200	Template version created.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template does not exist.
429	Too frequent requests.
500	Internal server error.

2.5.8 Deleting a Template Version

Function

DeleteTemplateVersion

This API deletes a template version.

- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after

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deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.

- If a template has only one version, the version cannot be deleted. To delete the only version, call DeleteTemplate. A template must have at least one version.

Exercise caution when you perform this operation.

URI

DELETE /v1/{project_id}/templates/{template_name}/versions/{version_id}

Table 2-489 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
version_id	Yes	String	Template version ID. It starts with V (uppercase). The number of the ID is incremented by 1 each time a version is created.

Table 2-490 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.

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Request Parameters

Table 2-491 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 204

Template version deleted. No data returned.

Status code: 400

Table 2-492 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-493 Detail

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

Status code: 401

Table 2-494 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-495 Detail

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

Status code: 403

Table 2-496 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-497 Detail

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

Status code: 404

Table 2-498 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

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Parameter	Type	Description
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-499 Detail

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

Status code: 429

Table 2-500 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-501 Detail

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

Status code: 500

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Table 2-502 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-503 Detail

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

Example Requests

- Delete a specified template version.

  ```
  DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1
  ```

- Delete a specified template version and check whether the template ID matches the current template.

  ```
  DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Template version deleted. No data returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template or template version does not exist.
429	Too frequent requests.

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Status Code	Description
500	Internal server error.

2.5.9 Obtaining Template Version Content

Function

ShowTemplateVersionContent

This API obtains the template version content.

- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.
- This API returns the download link (a pre-signed URL of OBS, valid for 5 minutes) of the template content through temporary redirection. You can download the template version content from the link.
- If you manually access the redirected OBS download link, do not include any request headers in the request, or the signature will fail.

ShowTemplateVersionContent returns only the template version content. To obtain the metadata of a template version, call ShowTemplateVersionMetadata.

URI

GET /v1/{project_id}/templates/{template_name}/versions/{version_id}

Table 2-504 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**

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Parameter	Mandatory	Type	Description
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
version_id	Yes	String	Template version ID. It starts with V (uppercase). The number of the ID is incremented by 1 each time a version is created.

Table 2-505 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.
access_control_source_ips	No	Array of strings	The array of source ips that are allowed to access the stack template, the source ip must be an IPv4 address with a subnet mask in CIDR notation.
access_control_source_vpc_ids	No	Array of strings	The array of source vpc ids that are allowed to access the stack template, the source vpc id should only contain lowercase letters, digits, and hyphens (-).

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Request Parameters

Table 2-506 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 307

Table 2-507 Response header parameters

Parameter	Type	Description
Location	String	HTTP redirection header. The client can use this header to redirect to a new address. The content is a template download link, which is a pre-signed OBS URL valid for 10 minutes.

Table 2-508 Response body parameters

Parameter	Type	Description
-	String	Empty response body

Status code: 400

Table 2-509 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-510 Detail

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

Status code: 401

Table 2-511 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-512 Detail

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

Status code: 403

Table 2-513 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-514 Detail

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

Status code: 404

Table 2-515 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-516 Detail

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

Status code: 429

Table 2-517 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-518 Detail

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

Status code: 500

Table 2-519 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-520 Detail

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

Example Requests

- Obtain a specified version of a specified template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1
  ```

- Obtain a specified version of a specified template and check whether the template ID matches the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

- Obtain a specified version of a specified template and provide access_control_source_ips to control the source ips that are allowed to access the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?access_control_source_ips=100.11.5.100/24&access_control_source_ips=100.22.5.100/24
  ```

- Obtain a specified version of a specified template and provide access_control_source_vpc_ids to control the source vpc ids that are allowed to access the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?access_control_source_vpc_ids=d42a8768-
  ```

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```
ad3c-4bca-91t8-53870f3402a9&access_control_source_vpc_ids=d42a8768-
ad3c-4bca-91t8-53870f3402a8
```

Example Responses

None

Status Codes

Status Code	Description
307	Template version content requested. The request is redirected to the download link.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template or template version does not exist.
429	Too frequent requests.
500	Internal server error.

2.5.10 Obtaining Template Version Metadata

Function

ShowTemplateVersionMetadata

This API displays the metadata of a template version.

- template_id is the unique ID of the template. It is a UUID generated by RFS when a template is created. Template names are unique at one specific time, so you can create a template named HelloWorld and another template with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the template they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each template has a unique ID that does not change with updates. If the template_id value differs from the current template ID, 400 is returned.

ShowTemplateVersionMetadata returns only the template version metadata. For details about the summary, refer to ShowTemplateVersionMetadataResponseBody. For details about template version, call ShowTemplateVersionContent.

URI

GET /v1/{project_id}/templates/{template_name}/versions/{version_id}/metadata

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Table 2-521 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. **Obtaining a Project ID**
template_name	Yes	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
version_id	Yes	String	Template version ID. It starts with V (uppercase). The number of the ID is incremented by 1 each time a version is created.

Table 2-522 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If **template_id** exists, the template service checks whether **template_id** matches **template_name**. If not, **400** is returned.

Request Parameters

Table 2-523 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 200

Table 2-524 Response body parameters

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service.
template_name	String	Name of a template. The name is unique within its domain (domain_id) and region. Chinese characters, letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a Chinese character or a letter.
version_description	String	Description of a template version. It can be used by users to identify their own template versions.
create_time	String	Creation time of a template version. The format complies with RFC3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.

Status code: 400

Table 2-525 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-526 Detail

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

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Status code: 401

Table 2-527 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-528 Detail

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

Status code: 403

Table 2-529 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-530 Detail

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

Status code: 404

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Table 2-531 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-532 Detail

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

Status code: 429

Table 2-533 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-534 Detail

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

Status code: 500

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Table 2-535 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-536 Detail

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

Example Requests

- Display the metadata of a template version.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V10/metadata
  ```

- Display the metadata of a template version and check whether the template ID matches the current template.

  ```
  GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V10/metadata?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

Status code: 200

Template version metadata obtained.

```
{
  "template_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "template_name" : "my_template",
  "version_description" : "version description",
  "create_time" : "2023-05-09T08:00:00Z"
}
```

Status Codes

Status Code	Description
200	Template version metadata obtained.
400	Invalid request.

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Status Code	Description
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template or template version does not exist.
429	Too frequent requests.
500	Internal server error.

2.6 Resource Formation - Stack Sets

2.6.1 Listing Stack Sets

Function

ListStackSets

This API lists all stack sets of the current account (domain) at the current region.

- You can use filter to find stack sets with a specified permission model (permission_model).
- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.
- Currently, all stack sets are returned. Pagination is not supported.
- If there is no stack set, an empty list will be returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/stack-sets

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Table 2-537 Query Parameters

Parameter	Mandatory	Type	Description
filter	No	String	Filter condition. • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (|). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion.
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-538 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-539 Response body parameters

Parameter	Type	Description
stack_sets	Array of **StackSet** objects	Stack sets.
page_info	**PageInfo** object	Pagination information

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Table 2-540 StackSet

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_set_description	String	Description of a stack set. It can be used by customers to identify their own stack sets.

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Parameter	Type	Description
permission_model	String	Permission model. It defines the creation mode of the agency required for RFS to operate stack sets, default is SELF_MANAGED. You can use the CreateStackSet API to specify this parameter. This parameter does not support updating yet. If you want to update the permission model, you can delete and then create a stack set with the same name. * *SERVICE_MANAGED*: Based on the Organization service, RFS will automatically create all IAM agency required when deploying organization member accounts. You can use this model to create stack sets only after setting "Resource Formation Stack Set service" as a trusted service in your organization. Only an organization administrator or a delegated administrator can create stack sets using SERVICE_MANAGED permissions. * *SELF_MANAGED*: For deployment, you need to manually create agencies in advance, including the agency created by the management account for RFS and the agency created by the member account for the management account. The stack set creation will not fail if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.
status	String	The stack set status can be: ● *IDLE*: The stack set is idle. ● *OPERATION_IN_PROGRESS*: The stack set operation is in progress. ● *DEACTIVATED*: The stack set is disabled.
create_time	String	Time when a stack set is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a stack set is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Table 2-541 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-542 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-543 Detail

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

Status code: 401

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Table 2-544 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-545 Detail

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

Status code: 403

Table 2-546 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-547 Detail

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

Status code: 429

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Table 2-548 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-549 Detail

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

Status code: 500

Table 2-550 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-551 Detail

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

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Example Requests

- You can obtain all stack sets of the current account (domain) at the current region. The returned stack sets are sorted in descending order by creation time.

  ```
  GET https://{endpoint}/v1/stack-sets
  ```

- You can use filter to obtain the stack sets with the specified permission model SELF_MANAGED. The returned stack sets are sorted in descending order by creation time.

  ```
  GET https://{endpoint}/v1/stack-sets?filter=permission_model==SELF_MANAGED
  ```

- You can use sort_key and sort_dir to specify the list of stack sets to be returned. The returned stack sets are sorted in ascending order by creation time.

  ```
  GET https://{endpoint}/v1/stack-sets?sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

List stack sets succeeded.


```
{
  "stack_sets" : [ {
    "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "stack_set_name" : "my_first_stack_set",
    "stack_set_description" : "my first stack set",
    "permission_model" : "SELF_MANAGED",
    "status" : "IDLE",
    "create_time" : "2023-05-15T15:39:25.751Z",
    "update_time" : "2023-05-15T16:39:25.751Z"
  }, {
    "stack_set_id" : "b3e7e15f-f96b-4190-94f4-bb8120f8c4dc",
    "stack_set_name" : "my_second_stack_set",
    "stack_set_description" : "my second stack set",
    "permission_model" : "SELF_MANAGED",
    "status" : "OPERATION_IN_PROGRESS",
    "create_time" : "2023-05-15T14:39:25.210Z",
    "update_time" : "2023-05-15T15:39:25.233Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	List stack sets succeeded.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.

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Status Code	Description
429	Too frequent requests.
500	Internal server error.

2.6.2 Creating a Stack Set

Function

CreateStackSet

This is a synchronous API. This API creates an empty stack set that does not contain any stack instance and returns the stack set ID (stack_set_id).

URI

POST /v1/stack-sets

Request Parameters

Table 2-552 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-553 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_set_description	No	String	Description of a stack set. It can be used by customers to identify their own stack sets.

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Parameter	Mandatory	Type	Description
permission_model	No	String	Permission model. It defines the creation mode of the agency required for RFS to operate stack sets, default is SELF_MANAGED. You can use the CreateStackSet API to specify this parameter. This parameter does not support updating yet. If you want to update the permission model, you can delete and then create a stack set with the same name. * *SERVICE_MANAGED*: Based on the Organization service, RFS will automatically create all IAM agency required when deploying organization member accounts. You can use this model to create stack sets only after setting "Resource Formation Stack Set service" as a trusted service in your organization. Only an organization administrator or a delegated administrator can create stack sets using SERVICE_MANAGED permissions. * *SELF_MANAGED*: For deployment, you need to manually create agencies in advance, including the agency created by the management account for RFS and the agency created by the member account for the management account. The stack set creation will not fail if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.

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Parameter	Mandatory	Type	Description
administration_agency_name	No	String	Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the iam:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.

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Parameter	Mandatory	Type	Description
managed_agency_name	No	String	Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources. The names of the agencies that different member accounts grants to the management account must be the same. Currently, different agency permissions cannot be defined based on different providers. This parameter must be specified when SELF_MANAGED permissions are defined. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
template_body	No	String	HCL template, which describes the target status of a resource. RFS compares the difference between the statuses of this template and the current remote resource. You can specify either template_body or template_uri, not both. **Note**: • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the difference between the statuses of this template and the current remote resource. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed files cannot contain .tfvars files. The maximum size of the file is 1 MB before decompression and 1 MB after decompression. A maximum of 100 files can be archived to one .zip package. You can specify either template_body or template_uri, not both. **Note**: • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to template_uri as plaintext. – If the template file specified by the template_uri is in .zip format, the names of the files or folders within the package contain a maximum of 255 bytes, the length of the longest directory cannot exceed 2048 bytes, and the size of

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Parameter	Mandatory	Type	Description
			the .zip package cannot exceed 1 MB.
vars_uri	No	String	OBS address of the HCL parameter file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. Ensure that the OBS address is located in the same region as the RFS. ● vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. ● RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. ● Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. • If vars_body is too large, you can use vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.
initial_stack_description	No	String	Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set. This description is used for stacks in the stack set only when they are created. To update the description of stacks that is being initialized, call the UpdateStackSet API. If the stack set description is updated later, the managed stack description will not be updated synchronously.

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Parameter	Mandatory	Type	Description
administration_agency_urn	No	String	Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the sts:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
managed_operation	No	**managed_operation** object	A set of properties used to manage the stack set operation.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-554 managed_operation

Parameter	Mandatory	Type	Description
enable_parallel_operation	No	Boolean	This parameter indicates whether the stack set can create multiple stack set operations concurrently. As an attribute of the stack set, this parameter can be specified by using CreateStackSet API and updated by using UpdateStackSet API. When false (default), the stack set performs one operation at a time in request order. To be specific, at a time, only one stack set operation in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS status can be processed. When true, the stack set can create operations concurrently, handle non-conflicting operations, and queue conflicting operations. When the conflicting operation is completed, the stack set continues to perform queuing operations in the order of requests. Currently, a maximum of 10 concurrent stack set operations are allowed to be created under the same stack set. Note: When the stack set allows multiple operations to be created at the same time, if more than one operation deploys same stack instances, these operations are called conflicting operations. When the stack set is in OPERATION_IN_PROGRESS status, this parameter is not allowed to be modified by UpdateStackSet API. *Currently, a maximum of 10 stack set operations in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS*

Parameter	Mandatory	Type	Description
			status can exist in one stack set.

Response Parameters

Status code: 201

Table 2-555 Response body parameters

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

Status code: 400

Table 2-556 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-557 Detail

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

Status code: 401

Table 2-558 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-559 Detail

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

Status code: 409

Table 2-560 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-561 Detail

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

Status code: 429

Table 2-562 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-563 Detail

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

Status code: 500

Table 2-564 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-565 Detail

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

Example Requests

- Use the signed URL of OBS to transfer the template and administration agency names for creating a stack set.

```
POST https://{endpoint}/v1/stack-sets

{
  "stack_set_name" : "my_first_stack_set",
  "template_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/vpc.tf",
  "managed_agency_name" : "my_managed_agency_name",
  "administration_agency_name" : "my_administration_agency_name"
}
```

- Use the template and administration agency URNs for creating a stack set. RFS supports the HCL syntax, and source field of required_providers module, which is used to define provider path, should be as the format of huawei.com/provider/{provider_name} (for example: huawei.com/provider/huaweicloud).

```
POST https://{endpoint}/v1/stack-sets

{
  "stack_set_name" : "my_second_stack_set",
  "managed_agency_name" : "my_managed_agency_name",
  "administration_agency_urn" : "iam::my-domain-id:agency:my-agency-name",
  "template_body" : "terraform {\n    required_providers {\n      huaweicloud = {\n        source = \"huawei.com/provider/huaweicloud\"\n        version = \"1.41.0\"\n      }\n    }\n}\nprovider \"huaweicloud\"{\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n    endpoints = {\n      iam = \"{iam_endpoint}\"\n    }\n}\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}"
}
```

Example Responses

Status code: 201

Stack set created successfully

```
{
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

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Status Codes

Status Code	Description
201	Stack set created successfully
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of stack sets has been reached.
409	Creation requests conflict. The stack set with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.6.3 Obtaining a Stack Set Template

Function

ShowStackSetTemplate

This API obtains the template of a specified stack set.

If the template is successfully obtained, the template download link (OBS Pre Signed address, valid for 5 minutes) is returned in temporary redirection mode. Most clients automatically redirect and download the template.

If automatic redirection is not performed, the template download link is obtained by referring to the HTTP redirection rule and manually download the template.

URI

GET /v1/stack-sets/{stack_set_name}/templates

Table 2-566 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Table 2-567 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
access_control_source_ips	No	Array of strings	The array of source ips that are allowed to access the stack set template, the source ip must be an IPv4 address with a subnet mask in CIDR notation.
access_control_source_vpc_ids	No	Array of strings	The array of source vpc ids that are allowed to access the stack set template, the source vpc id should only contain lowercase letters, digits, and hyphens (-).

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

Request Parameters

Table 2-568 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 307

Table 2-569 Response header parameters

Parameter	Type	Description
Location	String	HTTP redirection header. The client can use this header to redirect to a new address. The content is a template download link, which is a pre-signed OBS URL with 5-min validity.

Status code: 400

Table 2-570 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-571 Detail

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

Status code: 401

Table 2-572 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-573 Detail

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

Status code: 403

Table 2-574 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-575 Detail

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

Status code: 404

Table 2-576 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-577 Detail

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

Status code: 429

Table 2-578 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-579 Detail

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

Status code: 500

Table 2-580 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-581 Detail

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

Example Requests

- Obtain a Stack Set Template

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/templates
  ```

- Obtain a stack set template and check whether the stack ID matches the current stack.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/templates?stack_set_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

- Obtain a stack set template and provide access_control_source_ips to control the source ips that are allowed to access the stack set template.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/templates?access_control_source_ips=100.11.5.100/24&access_control_source_ips=100.22.5.100/24
  ```

- Obtain a stack set template and provide access_control_source_vpc_ids to control the source vpc ids that are allowed to access the stack set template.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/templates?access_control_source_vpc_ids=d42a8768-ad3c-4bca-91t8-53870f3402a9&access_control_source_vpc_ids=d42a8768-ad3c-4bca-91t8-53870f3402a8
  ```

Example Responses

None

Status Codes

Status Code	Description
307	Obtained. Temporary redirection.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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2.6.4 Listing Stack Set Operations

Function

ListStackSetOperations

This API lists all stack set operations in a specified stack set.

You can use the filter to find stack set operations of specified status or type (action).

You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.

If no operation is performed in the specified stack set, an empty list is returned.

Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/stack-sets/{stack_set_name}/operations

Table 2-582 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Table 2-583 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
filter	No	String	Filter condition. • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (|). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion.
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-584 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-585 Response body parameters

Parameter	Type	Description
stack_set_operations	Array of **StackSetOperation** objects	Stack set operations.
page_info	**PageInfo** object	Pagination information

Table 2-586 StackSetOperation

Parameter	Type	Description
operation_id	String	Stack set operation ID. It is a UUID generated by RFS when a stack set operation is created.

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Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
action	String	Current operation of the user can be: • *CREATE_STACK_INSTANCES*: Create a stack instance. • *DELETE_STACK_INSTANCES*: Delete a stack instance. • *DEPLOY_STACK_SET*: Deploy a stack set. • *DEPLOY_STACK_INSTANCES*: Deploy a stack instance.

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Parameter	Type	Description
status	String	The stack set operation status can be: • *QUEUE_IN_PROGRESS*: The operation is in queue. • *OPERATION_IN_PROGRESS*: The operation is in progress. • *OPERATION_COMPLETE*: The operation is complete. • *OPERATION_FAILED*: The operation failed. • *STOP_IN_PROGRESS*: The operation is being stopped. • *STOP_COMPLETE* - The operation stopped. – *STOP_FAILED*: Failed to stop the operation.
status_message	String	If a stack set operation fails, the causes are displayed. For example, the number of stack instances to be deployed or deleted has exceeded the upper limit or the stack set operation times out. To view failure details, use the ListStackInstances API to obtain status_message of the stack instance.
create_time	String	Time when a stack set operation is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a stack set operation is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Table 2-587 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-588 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-589 Detail

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

Status code: 401

Table 2-590 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-591 Detail

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

Status code: 403

Table 2-592 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-593 Detail

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

Status code: 404

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Table 2-594 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-595 Detail

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

Status code: 429

Table 2-596 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-597 Detail

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

Status code: 500

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Table 2-598 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-599 Detail

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

Example Requests

- Obtain all stack set operations of a specified stack set. The operations are sorted by creation time in descending order.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/operations
  ```

- Use filter to obtain all stack set operations in CREATE_STACK_INSTANCES and DEPLOY_STACK_SET of a specified stack set. The operations are sorted by creation time in descending order.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/operations?
  filter=action==CREATE_STACK_INSTANCES|action==DEPLOY_STACK_SET
  ```

- Use sort_key and sort_dir to obtain all stack set operations of a specified stack set. The operations are sorted by creation time in ascending order.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/operations?
  sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

Stack set operations listed.

```
{
  "stack_set_operations" : [ {
    "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "stack_set_name" : "my_hello_world_stack_set",
    "operation_id" : "3fef5d3e-27b6-44e8-9769-1d7262bd9430",
    "status" : "OPERATION_COMPLETE",
    "action" : "CREATE_STACK_INSTANCES",
    "create_time" : "2023-05-15T17:39:25.210Z",
    "update_time" : "2023-05-15T18:39:25.210Z"
  }, {
    "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "stack_set_name" : "my_hello_world_stack_set",
```

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```
    "operation_id" : "8592967b-18b0-421b-b6c1-079c9ded3931",
    "status" : "OPERATION_FAILED",
    "action" : "DEPLOY_STACK_SET",
    "create_time" : "2023-05-15T15:39:25.210Z",
    "update_time" : "2023-05-15T16:39:25.210Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Stack set operations listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

2.6.5 Obtaining Metadata of a Stack Set

Function

ShowStackSetMetadata

- You can use this API to obtain the stack set metadata.

URI

GET /v1/stack-sets/{stack_set_name}/metadata

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Table 2-600 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Table 2-601 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

Request Parameters

Table 2-602 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-603 Response body parameters

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_set_description	String	Description of a stack set. It can be used by customers to identify their own stack sets.
initial_stack_description	String	Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set. This description is used for stacks in the stack set only when they are created. To update the description of stacks that is being initialized, call the UpdateStackSet API. If the stack set description is updated later, the managed stack description will not be updated synchronously.

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Parameter	Type	Description
permission_model	String	Permission model. It defines the creation mode of the agency required for RFS to operate stack sets, default is SELF_MANAGED. You can use the CreateStackSet API to specify this parameter. This parameter does not support updating yet. If you want to update the permission model, you can delete and then create a stack set with the same name. * *SERVICE_MANAGED*: Based on the Organization service, RFS will automatically create all IAM agency required when deploying organization member accounts. You can use this model to create stack sets only after setting "Resource Formation Stack Set service" as a trusted service in your organization. Only an organization administrator or a delegated administrator can create stack sets using SERVICE_MANAGED permissions. * *SELF_MANAGED*: For deployment, you need to manually create agencies in advance, including the agency created by the management account for RFS and the agency created by the member account for the management account. The stack set creation will not fail if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.

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Parameter	Type	Description
administration_agency_name	String	Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the iam:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
managed_agency_name	String	Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources. The names of the agencies that different member accounts grants to the management account must be the same. Currently, different agency permissions cannot be defined based on different providers. This parameter must be specified when SELF_MANAGED permissions are defined. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.

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Parameter	Type	Description
status	String	The stack set status can be: ● *IDLE*: The stack set is idle. ● *OPERATION_IN_PROGRESS*: The stack set operation is in progress. ● *DEACTIVATED*: The stack set is disabled.
vars_uri_content	String	File content corresponding to vars_uri.
vars_body	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. ● The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. ● RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. ● If vars_body is too large, you can use vars_uri. ● Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.
create_time	String	Time when a stack set is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a stack set is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Parameter	Type	Description
administration_agency_urn	String	Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the sts:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
managed_operation	**managed_operation** object	A set of properties used to manage the stack set operation.

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Parameter	Type	Description
organizational_unit_ids	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances, DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API.

Parameter	Type	Description
		You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Table 2-604 managed_operation

Parameter	Type	Description
enable_parallel_operation	Boolean	This parameter indicates whether the stack set can create multiple stack set operations concurrently. As an attribute of the stack set, this parameter can be specified by using CreateStackSet API and updated by using UpdateStackSet API. When false (default), the stack set performs one operation at a time in request order. To be specific, at a time, only one stack set operation in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS status can be processed. When true, the stack set can create operations concurrently, handle non-conflicting operations, and queue conflicting operations. When the conflicting operation is completed, the stack set continues to perform queuing operations in the order of requests. Currently, a maximum of 10 concurrent stack set operations are allowed to be created under the same stack set. Note: When the stack set allows multiple operations to be created at the same time, if more than one operation deploys same stack instances, these operations are called conflicting operations. When the stack set is in OPERATION_IN_PROGRESS status, this parameter is not allowed to be modified by UpdateStackSet API. *Currently, a maximum of 10 stack set operations in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS status can exist in one stack set.*

Status code: 400

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Table 2-605 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-606 Detail

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

Status code: 401

Table 2-607 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-608 Detail

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

Status code: 403

Table 2-609 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-610 Detail

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

Status code: 404

Table 2-611 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-612 Detail

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

Status code: 429

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Table 2-613 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-614 Detail

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

Status code: 500

Table 2-615 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-616 Detail

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

Example Requests

- Obtain metadata of a specified stack set.

  ```
  GET https://{endpoint}/v1/stack_sets/my_hello_world_stack_set/metadata
  ```

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- Obtain the stack set metadata and check whether the stack set ID matches the current stack set.

```
GET https://{endpoint}/v1/stack_sets/my_hello_world_stack_set/metadata?stack_set_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
```

Example Responses

Status code: 200

Stack set metadata obtained.

```
{
  "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
  "stack_set_name" : "my_hello_world_stack_set",
  "stack_set_description" : "my first stack set",
  "initial_stack_description" : "my stack created by stack set",
  "permission_model" : "SELF_MANAGED",
  "managed_agency_name" : "my_managed_agency_name",
  "administration_agency_name" : "my_administration_agency_name",
  "status" : "OPERATION_IN_PROGRESS",
  "create_time" : "2023-03-16T03:28:20.210Z",
  "update_time" : "2023-05-24T08:56:10.210Z",
  "managed_operation" : {
    "enable_parallel_operation" : false
  }
}
```

Status Codes

Status Code	Description
200	Stack set metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

2.6.6 Listing Stack Instances

Function

ListStackInstances

This API lists stack instances of a specified region or a specified member account (stack_domain_id), or all stack instances in a specified stack set.

- You can use filter to find stack instances of a specified region or member account (stack_domain_id).

- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.
- If no stack instance exists in the specified stack set, an empty list is returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/stack-sets/{stack_set_name}/stack-instances

Table 2-617 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Table 2-618 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
filter	No	String	Filter condition. • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (|). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion.
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-619 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-620 Response body parameters

Parameter	Type	Description
stack_instances	Array of **StackInstance** objects	Stack instance list.
page_info	**PageInfo** object	Pagination information

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Table 2-621 StackInstance

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
status	String	Stack instance status can be: • *WAIT_IN_PROGRESS*: The stack instance is waiting for operation. • *CANCEL_COMPLETE* - The stack instance operation is canceled. • *OPERATION_IN_PROGRESS*: The stack instance operation is in progress. • *OPERATION_FAILED*: The stack instance operation failed. • *INOPERABLE* - The stack instance cannot be operated. • *OPERATION_COMPLETE*: The stack instance operation is complete.

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Parameter	Type	Description
status_message	String	When the stack instance is in an INOPERABLE or OPERATION_FAILED state, brief error information is displayed for debugging.
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack is different and does not change with updates. If the stack_id value is different from the current stack ID, 400 is returned.
stack_name	String	Stack name. The name is unique within its domain (domain_id), region, and project (project_id). Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_domain_id	String	Tenant ID of the stack associated with the stack instance.
latest_stack_set_operation_id	String	Stack set operation ID for the latest deployment of the stack instance. It is a UUID generated by RFS when a stack set operation is created.
region	String	Region of the stack associated with the stack instance.
create_time	String	Time when a stack instance is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Parameter	Type	Description
update_time	String	Time when a stack instance is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Table 2-622 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-623 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-624 Detail

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

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Status code: 401

Table 2-625 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-626 Detail

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

Status code: 403

Table 2-627 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-628 Detail

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

Status code: 404

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Table 2-629 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-630 Detail

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

Status code: 429

Table 2-631 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-632 Detail

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

Status code: 500

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Table 2-633 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-634 Detail

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

Example Requests

- Use filter to obtain the stack instances of a specified stack set in member accounts domainA and domainB.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances?filter=stack_domain_id==stackDomainIdA|stack_domain_id==stackDomainIdB
  ```

- Use sort_key and sort_dir to specify the list of stack instances to be returned. The returned instances are sorted in ascending order by creation time.

  ```
  GET https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances?sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

Stack instances listed.

```
{
  "stack_instances" : [ {
    "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "stack_set_name" : "my_hello_world_stack_set",
    "latest_stack_set_operation_id" : "3fef5d3e-27b6-44e8-9769-1d7262bd9430",
    "status" : "OPERATION_COMPLETE",
    "stack_id" : "ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2",
    "stack_name" : "my_hello_world_stack",
    "stack_domain_id" : "6cbcca2a2f114a63841bdbc7a19b7b09",
    "region" : "cn-north-7",
    "create_time" : "2023-05-17T15:39:25.210Z",
    "update_time" : "2023-05-18T16:39:25.210Z"
  }, {
    "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
    "stack_set_name" : "my_hello_world_stack_set",
    "latest_stack_set_operation_id" : "fb5e781e-a27d-46e2-9954-242753857a9f",
    "status" : "OPERATION_FAILED",
    "status_message" : "Deploy stack failed",
```

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```
    "stack_id" : "4abf1770-2760-4339-9c18-427fa115db6a",
    "stack_name" : "my_hello_world_stack",
    "stack_domain_id" : "6cbcca2a2f114a63841bdbc7a19b7b12",
    "region" : "cn-north-7",
    "create_time" : "2023-05-15T15:39:25.210Z",
    "update_time" : "2023-05-16T16:39:25.210Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Stack instances listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

2.6.7 Creating Stack Instances

Function

CreateStackInstance

This API creates multiple stack instances in a specified stack set and returns the stack set operation ID (stack_set_operation_id).

This API uses var_overrides to specify the variable values for creating a stack instance to override variables. If var_overrides are not assigned, the variables recorded in the current stack are used for deployment by default. For details, see the description of the var_overrides.

After the stack set variables are updated through the DeployStackSet API, the overridden variables in the stack instance are not updated and the overridden values are retained.

You can override only the variables recorded in the stack set. If you want to add variables that can be overridden, use the DeployStackSet API to update the variable set recorded in the stack set.

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- You can obtain the stack set operation status by calling the ShowStackSetOperationMetadata API based on the stack set operation ID (stack_set_operation_id).

URI

POST /v1/stack-sets/{stack_set_name}/stack-instances

Table 2-635 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Request Parameters

Table 2-636 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-637 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
deployment_targets	Yes	**deployment_targets** object	Deployment target information.

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Parameter	Mandatory	Type	Description
var_overrides	No	var_overrides object	Variables that the user expects to update in the stack instance. Related variables will be overridden in all stack instances specified in this request, and the stack instances will be deployed based on the updated variables. The overwritten variables are permanently recorded in the stack instances and continue to be used in subsequent deployment until they are overridden in the next update. Only the variable set (vars) recorded in the stack set can be overridden. If a variable that does not exist in vars is specified, error code 400 is returned. If you want to add variables that can be overridden, use the DeployStackSet API to update the variable set (vars) recorded in the stack set. After the stack set variable set (vars) is updated through the DeployStackSet API, the overridden variables in the stack instance are not updated and the overridden values are retained. Variable overriding applies only to the variables specified by vars in the stack set, excluding the variables that use default values as defined in the template. If you want to override the variables that use the default values, use the DeployStackSet API to update the vars recorded in the stack set and explicitly define related variables in the vars. Each time a user use the DeployStackSet API to update the vars of the stack set, error code 400 is returned for loss of the overridden variables

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Parameter	Mandatory	Type	Description
			recorded in the stack instance deployed to any targets. (The current overridden variables are not a subset of the vars of the updated stack set.) In a new update, existing variables cannot be retained. Instead, all existing variables should be overridden. The total length of the overridden vars_body of the stack instance does not exceed 51,200. After variable overriding, the size of the vars_uri file of the stack instance does not exceed 1 MB. For example, the vars_body recorded in the stack set is "key1=value1, key2=value2...", and the new vars_body in the stack instance is "key1=another_value1". The length of the overridden vars_body "key1=another_value1, key2=value2...." cannot exceed 51,200. For example, the file content specified by the vars_uri recorded in the stack set is "key1=value1, key2=value2...", and that of the new vars_uri in the stack instance is "key1=another_value1". The size of the file specified by the overridden vars_body "key1=another_value1, key2=value2...." cannot exceed 1 MB. If var_overrides is not assigned, the variables recorded in the overridden stack instance are not updated. If you have assigned at least one of vars_uri, vars_body, and use_stack_set_vars, the variables will be updated

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Parameter	Mandatory	Type	Description
			through replacement. The new variables assigned by you override related variables in the specified stack instance. All variable sets declared in vars_body, vars_uri, and use_stack_set_vars must be consistent with those recorded in the stack set. Error code 400 is returned for the following scenarios: variables that do not exist in the stack set are declared, variables that have been recorded in the stack set are not declared, and duplicate variables are declared. Note: ● To override a specified variable value, specify the name and value of the variable to be overridden in vars_uri or vars_body. ● To roll back an overridden variable to the value recorded in the stack set, specify the name of the variable to be rolled back to in use_stack_set_vars. – To roll back all overridden variables to the values recorded in the stack set, specify the names of all variables recorded in the stack set in use_stack_set_vars. – To use the variable values recorded in the current stack instance for deployment, var_overrides are not required.

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Parameter	Mandatory	Type	Description
operation_preferences	No	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-638 deployment_targets

Parameter	Mandatory	Type	Description
regions	Yes	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

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Parameter	Mandatory	Type	Description
domain_ids	No	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
organizational_unit_ids	No	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,

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Parameter	Mandatory	Type	Description
			DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API. You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Mandatory	Type	Description
domain_id_filter_type	No	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can

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Parameter	Mandatory	Type	Description
			not specify domain_ids or domain_ids_uri.

Table 2-639 var_overrides

Parameter	Mandatory	Type	Description
vars_uri	No	String	OBS address of the HCL parameter file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. Ensure that the OBS address is located in the same region as the RFS. • vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. • If vars_body is too large, you can use vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.
use_stack_set_vars	No	Array of strings	Names of the variables whose values are recorded in the stack set and expected to be used for deployment. You can select only the variables that have been recorded in the stack set. Otherwise, error code 400 is returned. If the use_stack_set_vars contains name of a variable that has been overridden in the stack instance, the value of the variable is rolled back to that recorded in the stack set.

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Table 2-640 operation_preferences

Parameter	Mandatory	Type	Description
region_concurrency_type	No	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	No	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Mandatory	Type	Description
failure_tolerance_count	No	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_percentage	No	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
max_concurrent_count	No	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
max_concurrent_percentage	No	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_mode	No	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual

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Parameter	Mandatory	Type	Description
			maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. • This option does not ensure the number of failed stack instances is less than failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Response Parameters

Status code: 202

Table 2-641 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.

Status code: 400

Table 2-642 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-643 Detail

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

Status code: 401

Table 2-644 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-645 Detail

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

Status code: 403

Table 2-646 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-647 Detail

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

Status code: 404

Table 2-648 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-649 Detail

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

Status code: 429

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Table 2-650 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-651 Detail

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

Status code: 500

Table 2-652 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-653 Detail

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

Example Requests

- Assign member account information through the array of domain IDs. Stack instances are created in sequential mode among regions.

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```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids" : [ "6cbcca2a2f114a63841bdbc7a19b7b12", "1e03325ba3cc47b1fdb03f3771bbb4f3" ]
  },
  "operation_preferences" : {
    "region_concurrency_type" : "SEQUENTIAL"
  }
}
```

- Assign member account information through the URL signed by domain IDs. Stack instances are created in parallel mode among regions.

```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids_uri" : "https://my-obs.obs.cn-north-7.ulanqab.huawei.com/domain_ids.csv",
    "operation_preferences" : {
      "region_concurrency_type" : "PARALLEL"
    }
  }
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "stack_set_operation_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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2.6.8 Deleting Stack Instance Deprecated

Function

DeleteStackInstanceDeprecated

This API deletes the stack instance of a specified region or member account (domain_id) in a specified stack set and returns the stack set operation ID (stack_set_operation_id).

** Exercise caution when performing this operation. Deleting a stack instance will delete related stacks and all resources managed by the stacks.

- You can obtain the stack set operation status by calling the ShowStackSetOperationMetadata API based on the stack set operation ID (stack_set_operation_id).

URI

DELETE /v1/stack-sets/{stack_set_name}/stack-instances

Table 2-654 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Request Parameters

Table 2-655 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-656 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
deployment_targets	Yes	**deployment_targets** object	Deployment target information.

Parameter	Mandatory	Type	Description
operation_preferences	No	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-657 deployment_targets

Parameter	Mandatory	Type	Description
regions	Yes	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

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Parameter	Mandatory	Type	Description
domain_ids	No	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
organizational_unit_ids	No	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,

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Parameter	Mandatory	Type	Description
			DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API. You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Mandatory	Type	Description
domain_id_filter_type	No	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can

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Parameter	Mandatory	Type	Description
			not specify domain_ids or domain_ids_uri.

Table 2-658 operation_preferences

Parameter	Mandatory	Type	Description
region_concurrency_type	No	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	No	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Mandatory	Type	Description
failure_tolerance_count	No	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_percentage	No	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
max_concurrent_count	No	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
max_concurrent_percentage	No	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_mode	No	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual

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Parameter	Mandatory	Type	Description
			maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. • This option does not ensure the number of failed stack instances is less than failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Response Parameters

Status code: 202

Table 2-659 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.

Status code: 400

Table 2-660 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-661 Detail

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

Status code: 401

Table 2-662 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-663 Detail

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

Status code: 403

Table 2-664 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-665 Detail

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

Status code: 404

Table 2-666 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-667 Detail

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

Status code: 429

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Table 2-668 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-669 Detail

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

Status code: 500

Table 2-670 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-671 Detail

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

Example Requests

- Assign member account information through the URL signed by domain IDs. Stack instances are deleted in sequential mode among regions.

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```
DELETE https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids_uri" : "https://your-bucket.cn-north-7.myhuaweicloud.com/my-domain-ids.csv",
    "operation_preferences" : {
      "region_concurrency_type" : "SEQUENTIAL"
    }
  }
}
```

- Assign member account information through the array of domain IDs. Stack instances are deleted in parallel mode among regions.

```
DELETE https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids" : [ "0e0bc7572c0dfb74efa6c60ecd7b1dbf" ],
    "operation_preferences" : {
      "region_concurrency_type" : "PARALLEL"
    }
  }
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "stack_set_operation_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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2.6.9 Updating Stack Instances

Function

UpdateStackInstances

This API updates and deploys a specified stack instance set, and returns the stack set operation ID (stack_set_operation_id).

This API uses var_overrides to update the variable values of a specified stack instance to override variables. If var_overrides are not assigned, the variables recorded in the current stack are used for deployment by default. For details, see the description of the var_overrides. You can update only existing stack instances. To add more stack instances, use the CreateStackInstances API.

After the stack set variables are updated through the DeployStackSet API, the overridden variables in the stack instance are not updated and the overridden values are retained.

You can override only the variables recorded in the stack set. If you want to add variables that can be overridden, use the DeployStackSet API to update the variable set recorded in the stack set.

- When the triggered deployment fails, the stack instance does not automatically roll back variable overriding. However, the stack that fails to be deployed is automatically rolled back by default, and stacks that have been deployed do not trigger rollback.
- You can obtain the stack set operation status by calling the ShowStackSetOperationMetadata API based on the stack set operation ID (stack_set_operation_id).

URI

PATCH /v1/stack-sets/{stack_set_name}/stack-instances

Table 2-672 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Request Parameters

Table 2-673 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-674 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
deployment_targets	Yes	**deployment_targets** object	Deployment target information.

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Parameter	Mandatory	Type	Description
var_overrides	No	var_overrides object	Variables that the user expects to update in the stack instance. Related variables will be overridden in all stack instances specified in this request, and the stack instances will be deployed based on the updated variables. The overwritten variables are permanently recorded in the stack instances and continue to be used in subsequent deployment until they are overridden in the next update. Only the variable set (vars) recorded in the stack set can be overridden. If a variable that does not exist in vars is specified, error code 400 is returned. If you want to add variables that can be overridden, use the DeployStackSet API to update the variable set (vars) recorded in the stack set. After the stack set variable set (vars) is updated through the DeployStackSet API, the overridden variables in the stack instance are not updated and the overridden values are retained. Variable overriding applies only to the variables specified by vars in the stack set, excluding the variables that use default values as defined in the template. If you want to override the variables that use the default values, use the DeployStackSet API to update the vars recorded in the stack set and explicitly define related variables in the vars. Each time a user use the DeployStackSet API to update the vars of the stack set, error code 400 is returned for loss of the overridden variables

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Parameter	Mandatory	Type	Description
			recorded in the stack instance deployed to any targets. (The current overridden variables are not a subset of the vars of the updated stack set.) In a new update, existing variables cannot be retained. Instead, all existing variables should be overridden. The total length of the overridden vars_body of the stack instance does not exceed 51,200. After variable overriding, the size of the vars_uri file of the stack instance does not exceed 1 MB. For example, the vars_body recorded in the stack set is "key1=value1, key2=value2...", and the new vars_body in the stack instance is "key1=another_value1". The length of the overridden vars_body "key1=another_value1, key2=value2...." cannot exceed 51,200. For example, the file content specified by the vars_uri recorded in the stack set is "key1=value1, key2=value2...", and that of the new vars_uri in the stack instance is "key1=another_value1". The size of the file specified by the overridden vars_body "key1=another_value1, key2=value2...." cannot exceed 1 MB. If var_overrides is not assigned, the variables recorded in the overridden stack instance are not updated. If you have assigned at least one of vars_uri, vars_body, and use_stack_set_vars, the variables will be updated

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Parameter	Mandatory	Type	Description
			through replacement. The new variables assigned by you override related variables in the specified stack instance. All variable sets declared in vars_body, vars_uri, and use_stack_set_vars must be consistent with those recorded in the stack set. Error code 400 is returned for the following scenarios: variables that do not exist in the stack set are declared, variables that have been recorded in the stack set are not declared, and duplicate variables are declared. Note: ● To override a specified variable value, specify the name and value of the variable to be overridden in vars_uri or vars_body. ● To roll back an overridden variable to the value recorded in the stack set, specify the name of the variable to be rolled back to in use_stack_set_vars. – To roll back all overridden variables to the values recorded in the stack set, specify the names of all variables recorded in the stack set in use_stack_set_vars. – To use the variable values recorded in the current stack instance for deployment, var_overrides are not required.

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Parameter	Mandatory	Type	Description
operation_preferences	No	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-675 deployment_targets

Parameter	Mandatory	Type	Description
regions	Yes	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

Parameter	Mandatory	Type	Description
domain_ids	No	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
organizational_unit_ids	No	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,

Parameter	Mandatory	Type	Description
			DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API. You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Mandatory	Type	Description
domain_id_filter_type	No	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can

Parameter	Mandatory	Type	Description
			not specify domain_ids or domain_ids_uri.

Table 2-676 var_overrides

Parameter	Mandatory	Type	Description
vars_uri	No	String	OBS address of the HCL parameter file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. Ensure that the OBS address is located in the same region as the RFS. • vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. • If vars_body is too large, you can use vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.
use_stack_set_vars	No	Array of strings	Names of the variables whose values are recorded in the stack set and expected to be used for deployment. You can select only the variables that have been recorded in the stack set. Otherwise, error code 400 is returned. If the use_stack_set_vars contains name of a variable that has been overridden in the stack instance, the value of the variable is rolled back to that recorded in the stack set.

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Table 2-677 operation_preferences

Parameter	Mandatory	Type	Description
region_concurrency_type	No	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	No	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Mandatory	Type	Description
failure_tolerance_count	No	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_percentage	No	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
max_concurrent_count	No	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
max_concurrent_percentage	No	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_mode	No	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual

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Parameter	Mandatory	Type	Description
			maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. • This option does not ensure the number of failed stack instances is less than failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Response Parameters

Status code: 202

Table 2-678 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.

Status code: 400

Table 2-679 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-680 Detail

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

Status code: 401

Table 2-681 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-682 Detail

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

Status code: 403

Table 2-683 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-684 Detail

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

Status code: 404

Table 2-685 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-686 Detail

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

Status code: 429

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Table 2-687 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-688 Detail

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

Status code: 500

Table 2-689 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-690 Detail

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

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Example Requests

- Assign the new variable through vars uri, retain the overridden variable var_key_1 in the stack instance, and trigger deployment. Stack instances are updated in sequential mode among regions.

```
PATCH https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids_uri" : "https://your-bucket.cn-north-7.myhuaweicloud.com/my-domain-ids.csv"
  },
  "var_overrides" : {
    "vars_uri" : "https://{bucket_name}.{region}.myhuaweicloud.com/my-hello-world-vars.tfvars",
    "use_stack_set_vars" : [ "var_key_1" ]
  },
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "operation_preferences" : {
    "region_concurrency_type" : "SEQUENTIAL"
  }
}
```

- The stack instance whose tenant ID is my-domain-id is deployed in cn-north-7. The variables are not overridden. Stack instances are updated in parallel mode among regions.

```
PATCH https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances

{
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids" : [ "my-domain-id" ]
  },
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "operation_preferences" : {
    "region_concurrency_type" : "PARALLEL"
  }
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "stack_set_operation_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.

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Status Code	Description
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

2.6.10 Deleting Stack Instances

Function

DeleteStackInstances

This API deletes the stack instance of a specified region or member account (domain_id) in a specified stack set and returns the stack set operation ID (stack_set_operation_id).

** Exercise caution when performing this operation. Deleting a stack instance will delete related stacks and all resources managed by the stacks.

- You can obtain the stack set operation status by calling the ShowStackSetOperationMetadata API based on the stack set operation ID (stack_set_operation_id).

URI

POST /v1/stack-sets/{stack_set_name}/stack-instances/deletion

Table 2-691 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Request Parameters

Table 2-692 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-693 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
deployment_targets	Yes	**deployment_targets** object	Deployment target information.

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Parameter	Mandatory	Type	Description
operation_preferences	No	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-694 deployment_targets

Parameter	Mandatory	Type	Description
regions	Yes	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

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Parameter	Mandatory	Type	Description
domain_ids	No	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
organizational_unit_ids	No	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,

Parameter	Mandatory	Type	Description
			DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API. You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Mandatory	Type	Description
domain_id_filter_type	No	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can

Parameter	Mandatory	Type	Description
			not specify domain_ids or domain_ids_uri.

Table 2-695 operation_preferences

Parameter	Mandatory	Type	Description
region_concurrency_type	No	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	No	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Mandatory	Type	Description
failure_tolerance_count	No	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_percentage	No	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
max_concurrent_count	No	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
max_concurrent_percentage	No	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_mode	No	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual

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Parameter	Mandatory	Type	Description
			maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. • This option does not ensure the number of failed stack instances is less than failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Response Parameters

Status code: 202

Table 2-696 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.

Status code: 400

Table 2-697 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-698 Detail

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

Status code: 401

Table 2-699 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-700 Detail

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

Status code: 403

Table 2-701 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-702 Detail

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

Status code: 404

Table 2-703 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-704 Detail

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

Status code: 429

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Table 2-705 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-706 Detail

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

Status code: 500

Table 2-707 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-708 Detail

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

Example Requests

- Assign member account information through the URL signed by domain IDs. Stack instances are deleted in sequential mode among regions.

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```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances/deletion

{
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids_uri" : "https://your-bucket.cn-north-7.myhuaweicloud.com/my-domain-ids.csv"
  },
  "operation_preferences" : {
    "region_concurrency_type" : "SEQUENTIAL"
  }
}
```

- Assign member account information through the array of domain IDs. Stack instances are deleted in parallel mode among regions.

```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances/deletion

{
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids" : [ "0e0bc7572c0dfb74efa6c60ecd7b1dbf" ]
  },
  "operation_preferences" : {
    "region_concurrency_type" : "PARALLEL"
  }
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "stack_set_operation_id" : "fb5e781e-a27d-46e2-9954-242753857a9f"
}
```

Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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2.6.11 Deploying a Stack Set

Function

DeployStackSet

This API deploys an existing stack set and returns the stack set operation ID (stack_set_operation_id).

- You can use this API to update the template and variables of a stack set and deploy it.
- This API directly triggers deployment of stack instances. You can deploy all stack instances in a stack set or a specified stack instance.
- This API needs you providing full templates and vars for each deployment.
- When the triggered deployment fails, the stack set does not automatically roll back the template and variables. However, the stack that fails to be deployed determines whether to roll back based on its rollback configuration. Stacks that have been deployed do not trigger rollback.
- You can obtain the stack set operation status by calling the ShowStackSetOperationMetadata API based on the stack set operation ID (stack_set_operation_id).

URI

POST /v1/stack-sets/{stack_set_name}/deployments

Table 2-709 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Request Parameters

Table 2-710 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-711 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
deployment_targets	Yes	**deployment_targets** object	Deployment target information.
template_body	No	String	HCL template, which describes the target status of a resource. RFS compares the difference between the statuses of this template and the current remote resource. You can specify either template_body or template_uri, not both. **Note**: • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext.

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Parameter	Mandatory	Type	Description
template_uri	No	String	OBS address of an HCL template. The template describes the target status of a resource. RFS compares the difference between the statuses of this template and the current remote resource. Ensure that the OBS address is located in the same region as the RFS. The corresponding file must be a tf file or a zip package. A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded. Currently, only the .zip package is supported. The file name extension must be .zip. The decompressed files cannot contain .tfvars files. The maximum size of the file is 1 MB before decompression and 1 MB after decompression. A maximum of 100 files can be archived to one .zip package. You can specify either template_body or template_uri, not both. **Note**: • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to template_uri as plaintext. – If the template file specified by the template_uri is in .zip format, the names of the files or folders within the package contain a maximum of 255 bytes, the length of the longest directory cannot exceed 2048 bytes, and the size of

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Parameter	Mandatory	Type	Description
			the .zip package cannot exceed 1 MB.
vars_uri	No	String	OBS address of the HCL parameter file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. Ensure that the OBS address is located in the same region as the RFS. ● vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. ● RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. The content in vars_uri uses the tfvars format of HCL. You can save the content in .tfvars to a file, upload the file to OBS, and transfer the pre-signed URL of OBS to vars_uri. ● Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.

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Parameter	Mandatory	Type	Description
vars_body	No	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. • If vars_body is too large, you can use vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.
operation_preferences	No	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-712 deployment_targets

Parameter	Mandatory	Type	Description
regions	Yes	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

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Parameter	Mandatory	Type	Description
domain_ids	No	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

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Parameter	Mandatory	Type	Description
organizational_unit_ids	No	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,

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Parameter	Mandatory	Type	Description
			DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API. You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Mandatory	Type	Description
domain_id_filter_type	No	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can

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Parameter	Mandatory	Type	Description
			not specify domain_ids or domain_ids_uri.

Table 2-713 operation_preferences

Parameter	Mandatory	Type	Description
region_concurrency_type	No	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	No	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Mandatory	Type	Description
failure_tolerance_count	No	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_percentage	No	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
max_concurrent_count	No	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
max_concurrent_percentage	No	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Mandatory	Type	Description
failure_tolerance_mode	No	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual

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Parameter	Mandatory	Type	Description
			maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. • This option does not ensure the number of failed stack instances is less than failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Response Parameters

Status code: 202

Table 2-714 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.

Status code: 400

Table 2-715 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-716 Detail

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

Status code: 401

Table 2-717 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-718 Detail

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

Status code: 403

Table 2-719 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-720 Detail

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

Status code: 404

Table 2-721 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-722 Detail

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

Status code: 409

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Table 2-723 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-724 Detail

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

Status code: 429

Table 2-725 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-726 Detail

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

Status code: 500

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Table 2-727 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-728 Detail

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

Example Requests

The following example shows how to pass template and parameter information using OBS Signed URL. Stack instances are deployed in sequential mode among regions.

```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/deployments

{
  "template_uri" : "https://{bucket_name}.{region}.myhuaweicloud.com/my-hello-world-template.tf",
  "vars_uri" : "https://{bucket_name}.{region}.myhuaweicloud.com/my-hello-world-vars.tfvars",
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4",
  "deployment_targets" : {
    "regions" : [ "cn-north-7" ],
    "domain_ids" : [ "0e0bc7572c0dfb74efa6c60ecd7b1dbf" ]
  },
  "operation_preferences" : {
    "region_concurrency_type" : "SEQUENTIAL"
  }
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

```
{
  "stack_set_operation_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

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Status Codes

Status Code	Description
202	The request is accepted and processed asynchronously.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
409	Request conflict. Another request is being processed on the current stack set.
429	Too frequent requests.
500	Internal server error.

2.6.12 Deleting a Stack Set

Function

DeleteStackSet

** Exercise caution when performing this operation. Deleting a stack set will delete all related data, such as stack set operations and stack set operation events. **

A specified stack set can be deleted only when all the the following conditions are met. Otherwise, an error is reported.

- No stack instance exists in the stack set.
- The stack set is in an idle (*IDLE*) state.

URI

DELETE /v1/stack-sets/{stack_set_name}

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Table 2-729 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Table 2-730 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

Request Parameters

Table 2-731 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 204

Stack set deleted.

Status code: 400

Table 2-732 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-733 Detail

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

Status code: 401

Table 2-734 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-735 Detail

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

Status code: 403

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Table 2-736 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-737 Detail

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

Status code: 404

Table 2-738 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-739 Detail

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

Status code: 429

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Table 2-740 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-741 Detail

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

Status code: 500

Table 2-742 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-743 Detail

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

Example Requests

- Delete a specified stack set.

```
DELETE https://{endpoint}/v1/stack-sets/my_hello_world_stack_set
```

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- Delete a specified stack set and check whether the provided stack set ID matches the current stack set.

```
DELETE https://{endpoint}/v1/stack-sets/my_hello_world_stack_set?stack_set_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
```

Example Responses

None

Status Codes

Status Code	Description
204	Stack set deleted.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The stack set cannot be deleted.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

2.6.13 Updating a Stack Set

Function

UpdateStackSet

This API updates stack set attributes based on the information provided by the user. One or more of the following attributes can be updated: stack_set_description, initial_stack_description, administration_agency_name, and managed_agency_name.

This API updates only the fields contained in the information provided by the user.

Note:

- Note: All attributes are overwritten once updated. New parameters will overwrite original attributes of a stack.
- administration_agency_name and managed_agency_name can be updated only when permission_model is set to self_managed.
- If the stack set is in the OPERATION_IN_PROGRESS state, the stack set cannot be updated.

URI

PATCH /v1/stack-sets/{stack_set_name}

Table 2-744 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Request Parameters

Table 2-745 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-746 Request body parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_description	No	String	Description of a stack set. It can be used by customers to identify their own stack sets.
initial_stack_description	No	String	Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set. This description is used for stacks in the stack set only when they are created. To update the description of stacks that is being initialized, call the UpdateStackSet API. If the stack set description is updated later, the managed stack description will not be updated synchronously.

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Parameter	Mandatory	Type	Description
administration_agency_name	No	String	Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the iam:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.

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Parameter	Mandatory	Type	Description
managed_agency_name	No	String	Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources. The names of the agencies that different member accounts grants to the management account must be the same. Currently, different agency permissions cannot be defined based on different providers. This parameter must be specified when SELF_MANAGED permissions are defined. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.

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Parameter	Mandatory	Type	Description
administration_agency_urn	No	String	Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the sts:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
managed_operation	No	**managed_operation** object	A set of properties used to manage the stack set operation.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as to the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

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Table 2-747 managed_operation

Parameter	Mandatory	Type	Description
enable_parallel_operation	No	Boolean	This parameter indicates whether the stack set can create multiple stack set operations concurrently. As an attribute of the stack set, this parameter can be specified by using CreateStackSet API and updated by using UpdateStackSet API. When false (default), the stack set performs one operation at a time in request order. To be specific, at a time, only one stack set operation in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS status can be processed. When true, the stack set can create operations concurrently, handle non-conflicting operations, and queue conflicting operations. When the conflicting operation is completed, the stack set continues to perform queuing operations in the order of requests. Currently, a maximum of 10 concurrent stack set operations are allowed to be created under the same stack set. Note: When the stack set allows multiple operations to be created at the same time, if more than one operation deploys same stack instances, these operations are called conflicting operations. When the stack set is in OPERATION_IN_PROGRESS status, this parameter is not allowed to be modified by UpdateStackSet API. *Currently, a maximum of 10 stack set operations in QUEUE_IN_PROGRESS or OPERATION_IN_PROGRESS*

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Parameter	Mandatory	Type	Description
			status can exist in one stack set.

Response Parameters

Status code: 204

Stack set updated.

Status code: 400

Table 2-748 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-749 Detail

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

Status code: 401

Table 2-750 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-751 Detail

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

Status code: 403

Table 2-752 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-753 Detail

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

Status code: 404

Table 2-754 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-755 Detail

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

Status code: 409

Table 2-756 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-757 Detail

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

Status code: 429

Table 2-758 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-759 Detail

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

Status code: 500

Table 2-760 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-761 Detail

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

Example Requests

- Update the description of a stack set.

```
PATCH https://{endpoint}/v1/stack-sets/{stack_set_name}

{
  "stack_set_description" : "my hello world stack set",
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

- Update the description of the stack that is being initialized in the stack set.

```
PATCH https://{endpoint}/v1/stack-sets/{stack_set_name}

{
  "initial_stack_description" : "my initial stack description",
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

- Update the administration agency name of a stack set.

```
PATCH https://{endpoint}/v1/stack-sets/{stack_set_name}

{
  "administration_agency_name" : "my administration agency name",
```

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```
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

- Update the managed agency name of the stack set.

```
PATCH https://{endpoint}/v1/stack-sets/{stack_set_name}

{
  "managed_agency_name" : "my managed agency name",
  "stack_set_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	Stack set updated.
400	Invalid request.
401	Authentication failed.
403	1. Invalid stack set status. 2. The user does not have the permission to call this API.
404	The stack set does not exist.
409	Request conflict. Another request is being processed on the current stack set.
429	Too frequent requests.
500	Internal server error.

2.6.14 Obtaining Metadata of a Stack Set Operation

Function

ShowStackSetOperationMetadata

This API obtains the metadata of a specified stack set operation, including the stack set operation ID, stack set ID, stack set name, stack set operation status, creation time, update time, and deployment target.

For details, refer to ShowStackSetOperationMetadataResponseBody.

URI

GET /v1/stack-sets/{stack_set_name}/operations/{stack_set_operation_id}/metadata

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Table 2-762 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_set_operation_id	Yes	String	Unique ID of the stack set operation (stack_set_operation). It is a UUID generated by RFS when a stack set operation is created.

Table 2-763 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

Request Parameters

Table 2-764 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-765 Response body parameters

Parameter	Type	Description
stack_set_operation_id	String	Unique ID of a stack set operation. It is a UUID generated by RFS when a stack set operation is created.
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Parameter	Type	Description
status	String	The stack set operation status can be: • *QUEUE_IN_PROGRESS*: The operation is in queue. • *OPERATION_IN_PROGRESS*: The operation is in progress. • *OPERATION_COMPLETE*: The operation is complete. • *OPERATION_FAILED*: The operation failed. • *STOP_IN_PROGRESS*: The operation is being stopped. • *STOP_COMPLETE* - The operation stopped. – *STOP_FAILED*: Failed to stop the operation.
status_message	String	If a stack set operation fails, the causes are displayed. For example, the number of stack instances to be deployed or deleted has exceeded the upper limit or the stack set operation times out. To view failure details, use the ListStackInstances API to obtain status_message of the stack instance.
action	String	Current operation of the user can be: • *CREATE_STACK_INSTANCES*: Create a stack instance. • *DELETE_STACK_INSTANCES*: Delete a stack instance. • *DEPLOY_STACK_SET*: Deploy a stack set. • *DEPLOY_STACK_INSTANCES*: Deploy a stack instance.

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Parameter	Type	Description
administration_agency_name	String	Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the iam:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.

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Parameter	Type	Description
administration_agency_urn	String	Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must contain the sts:tokens:assume permission to subsequently obtain the managed agency credentials. If it is not included, adding or deploying instances will fail. When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both. You are advised to specify administration_agency_urn when using a trust agency. administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
managed_agency_name	String	Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources. The names of the agencies that different member accounts grants to the management account must be the same. Currently, different agency permissions cannot be defined based on different providers. This parameter must be specified when SELF_MANAGED permissions are defined. Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.
deployment_targets	**deployment_targets** object	Deployment target information.

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Parameter	Type	Description
create_time	String	Time when a stack set operation is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a stack set operation is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
operation_preferences	**operation_preferences** object	The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation. If this parameter is not specified, the default operation preferences is that only one stack is deployed at a time and after all stack instances in a region are deployed completely, the next region will be selected randomly for deployment. The default value of failure tolerance count in a region is 0. This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.

Table 2-766 deployment_targets

Parameter	Type	Description
regions	Array of strings	Regions involved in the stack set operations are specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a region that is not managed by the stack set is specified, an error is reported. *

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Parameter	Type	Description
domain_ids	Array of strings	When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user. • If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the regions and domain_ids input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. It's used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

Parameter	Type	Description
domain_ids_uri	String	When the stack set permission model is SELF_MANAGED, the OBS address of the domain IDs involved in this operation is specified by the user. Tenant IDs are separated by commas (,) and line breaks are supported. Currently, only CSV files are supported, and the files should be encoded in UTF-8. The file size cannot exceed 100 KB. Do not use Excel for operations on the CSV file to be uploaded. Otherwise, inconsistencies may occur in results read from the CSV file. You are advised to use Notepad to open the file and check whether the content complies with your expectation. ● If this parameter is specified in the DeployStackSet API, stack instances in the stack set are selected for deployment. This operation applies to the Cartesian product of the domain_ids_uri file and regions input by the user. If a domain_id that is not managed by the stack set is specified, an error is reported. * When the stack set permission model is SERVICE_MANAGED, this parameter needs to be used with domain_id_filter_type. Used to specify, exclude or additionally deploy the domain IDS of member accounts from the organizational units in deployment target. You can specify either domain_ids or domain_ids_uri, but not both.

Parameter	Type	Description
organizational_unit_ids	Array of strings	Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED. The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units. This parameter must be specified in the CreateStackInstances API. This API will asynchronously verify the OU IDs. Valid OU IDs and all non-empty sub-OU IDs will be managed by the stack set. This API allows specifying OU IDs that are not or already managed by the stack set. ● If the stack set is not automatically deployed, it will not manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). * ● [Not supported] If the stack set is automatically deployed, it will also manage the empty sub-OUs (specifically, there are no member accounts under the sub-OU or the deployment excludes all member accounts). Automatic deployment only responds to changes in member accounts, not for organizational units changes, such as adding new OUs. Adding new OUs will not be automatically managed by the stack set. * To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances, DeleteStackInstances API) , only OU IDs that have been managed by the resource stack set are allowed to be specified. If you specify OU IDs that are not managed by the resource stack set records, an error will be reported. This parameter must be specified in the DeleteStackInstances API.

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Parameter	Type	Description
		You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request. Stack set will be deployed not only to users in the deployment target OUs, but also to users in all sub-OUs. Stack set assembly selects stack instances to create or deploy in the form of a Cartesian product based on all users under the OUs (including under sub-OUs) and the region list. *Stack sets will not choose administrator in organization as deployment target for stack instance creation or deployment, even if the organization administrator is in the given organization or the organization's OU.*

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Parameter	Type	Description
domain_id_filter_type	String	Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified. You can specify different filter types to include or exclude deployment target users by providing either domain_ids or domain_ids_uri, thus increasing or limiting the scope of deployment target and implement different deployment strategies. ● *INTERSECTION* - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *DIFFERENCE* - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. ● *UNION* - In addition to deploy all accounts from the OUs in deployment target, it will also deploy to the specified account. Users can deploy the OU and specific individual accounts in stack set operation by specifying both organizational_unit_ids and domain_ids/domain_ids_uri. You can specify either domain_ids or domain_ids_uri, but not both. CreateStackInstances does not allow using this type. ● *NONE* - Only deploy to all accounts from the OUs in deployment target. You can not specify domain_ids or domain_ids_uri.

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Table 2-767 operation_preferences

Parameter	Type	Description
region_concurrency_type	String	The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive. Detailed introduction: • *SEQUENTIAL*: Stack instances are deployed in sequence among regions, that is, after all stack instances in a region are deployed completely, the next region will be selected for deployment. • *PARALLEL*: Stack instances are deployed in all specified regions concurrently.
region_order	Array of strings	Region deployment order. This parameter can be specified only when region_concurrency_type is set to SEQUENTIAL. The region_order must only contain all regions in this deployment target. If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.

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Parameter	Type	Description
failure_tolerance_count	Long	The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. If the value of region_concurrency_type is SEQUENTIAL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, all other instances that are still in WAIT_IN_PROGRESS status will be canceled. The status of the canceled instance changes to CANCEL_COMPLETE; If the value of region_concurrency_type is PARALLEL, when the number of stack instances that deploy failed in a region exceeds the failure_tolerance_count, the stack set only cancels all instances that are still in WAIT_IN_PROGRESS status in this region. The status of the canceled instance changes to CANCEL_COMPLETE. Stack instances that are in OPERATION_IN_PROGRESS status or have been deployed (that is, in OPERATION_COMPLETE or OPERATION_FAILED status) are not affected. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.
failure_tolerance_percentage	Long	The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0. By multiplying the failure_tolerance_percentage by the number of stack instances in the region and rounding it down, the actual number of failure tolerance count can be obtained. Only one of failure_tolerance_count and failure_tolerance_percentage can exist.

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Parameter	Type	Description
max_concurrent_count	Long	The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. max_concurrent_count is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, max_concurrent_count is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.
max_concurrent_percentage	Long	The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1. The RFS calculates the actual maximum number of concurrent accounts by rounding down the value obtained by multiplying the percentage by the number of stack instances in each region. This actual maximum number of concurrent accounts is at most one more than the failure tolerance count. If failure_tolerance_percentage is specified, this actual maximum number of concurrent accounts is at most one more than the result of failure_tolerance_percentage multiplied by the number of stack instances in a region to guarantee that the deployment stops at the required level of failure tolerance. Only one of max_concurrent_count and max_concurrent_percentage can exist.

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Parameter	Type	Description
failure_tolerance_mode	String	The failure tolerance mode of deploying stack instances in regions. The value can be STRICT_FAILURE_TOLERANCE or SOFT_FAILURE_TOLERANCE. The default value is STRICT_FAILURE_TOLERANCE. The value is case-sensitive. Detailed introduction: ● *STRICT_FAILURE_TOLERANCE*: This option dynamically lowers the concurrency level to ensure the number of failed stack instances never exceeds the value of failure_tolerance_count + 1. If failure_tolerance_percentage is specified, this option ensures the number of failed stack instances never exceeds the result of failure_tolerance_percentage multiplied by the number of stack instances in a region. ● The initial actual maximum number of concurrent accounts is max_concurrent_count. If max_concurrent_percentage is specified, the initial actual maximum number of concurrent accounts is the result of max_concurrent_percentage multiplied by the number of stack instances. The actual maximum number of concurrent accounts is then reduced proportionally by the number of failed stack instances. ● *SOFT_FAILURE_TOLERANCE*: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the max_concurrent_count, or max_concurrent_percentage. ● This option does not ensure the number of failed stack instances is less than failure_tolerance_count +

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Parameter	Type	Description
		1. If failure_tolerance_percentage is specified, this option does not ensure the number of failed stack instances is less than the result of max_concurrent_percentage multiplied by the number of stack instances.

Status code: 400

Table 2-768 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-769 Detail

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

Status code: 401

Table 2-770 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-771 Detail

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

Status code: 403

Table 2-772 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-773 Detail

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

Status code: 404

Table 2-774 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-775 Detail

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

Status code: 429

Table 2-776 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-777 Detail

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

Status code: 500

Table 2-778 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-779 Detail

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

Example Requests

Obtain metadata of a stack set operation.

```
GET https://{endpoint}/v1/stack-sets/{stack_set_name}/operations/{stack_set_operation_id}/metadata
```

Example Responses

Status code: 200

Stack set operation metadata obtained.

```
{
  "stack_set_operation_id" : "daa46d87-045b-4a50-a0d5-c167fc34b632",
  "stack_set_id" : "10f29827-939f-4a11-8bcc-65b051257860",
  "stack_set_name" : "my_hello_world_stack_set",
  "status" : "OPERATION_COMPLETE",
  "administration_agency_name" : "test_administration_agency_name",
  "managed_agency_name" : "test_managed_agency_name",
  "action" : "CREATE_STACK_INSTANCES",
  "deployment_targets" : {
    "domain_ids" : [ "dfda721e8ecd46088662f2dc9e97b1c6", "dfda721e8ecd46088662f2dc9e97b1c7" ],
    "regions" : "cn-north-5"
  },
  "create_time" : "2023-05-15T15:39:25.210Z",
  "update_time" : "2023-05-15T16:39:25.210Z",
  "operation_preferences" : {
    "failure_tolerance_count" : 4,
    "max_concurrent_count" : 3,
    "region_order" : [ "cn-north-5" ],
    "region_concurrency_type" : "SEQUENTIAL",
    "failure_tolerance_mode" : "STRICT_FAILURE_TOLERANCE"
  }
}
```

Status Codes

Status Code	Description
200	Stack set operation metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set or the stack set operation does not exist.
429	Too frequent requests.

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Status Code	Description
500	Internal server error.

2.6.15 Obtaining a Stack Instance

Function

ShowStackInstance

This API obtains details about a stack instance, including the name and ID of its associated stack, creation time, and information about variable overriding.

URI

GET /v1/stack-sets/{stack_set_name}/stack-instances/{stack_instance_addr}

Table 2-780 Path Parameters

Parameter	Mandatory	Type	Description
stack_set_name	Yes	String	Stack set name. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_instance_addr	Yes	String	Unique address of a stack instance. The address combines region and stack_domain_id using slashes (/, whose escape codes are %2f or %2F). The address is unique within its domain (domain_id), region, and stack set (stack_set_name).

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Table 2-781 Query Parameters

Parameter	Mandatory	Type	Description
stack_set_id	No	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack set is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.

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Parameter	Mandatory	Type	Description
call_identity	No	String	This parameter is only supported when the stack set permission model is SERVICE_MANAGED. Specify whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account. By default, SELF is specified. Use SELF for stack sets with self-managed permissions. No matter what call identity is specified, the stack set involved in request is always belonging to management account. • *SELF* - Invoked as the management account. • *DELEGATED_ADMIN* - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.

Request Parameters

Table 2-782 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-783 Response body parameters

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned.
stack_set_name	String	Name of a stack set. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
status	String	Stack instance status can be: • *WAIT_IN_PROGRESS*: The stack instance is waiting for operation. • *CANCEL_COMPLETE* - The stack instance operation is canceled. • *OPERATION_IN_PROGRESS*: The stack instance operation is in progress. • *OPERATION_FAILED*: The stack instance operation failed. • *INOPERABLE* - The stack instance cannot be operated. • *OPERATION_COMPLETE*: The stack instance operation is complete.

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Parameter	Type	Description
status_message	String	When the stack instance is in an INOPERABLE or OPERATION_FAILED state, brief error information is displayed for debugging.
stack_id	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack is different and does not change with updates. If the stack_id value is different from the current stack ID, 400 is returned.
stack_name	String	Stack name. The name is unique within its domain (domain_id), region, and project (project_id). Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
stack_domain_id	String	Tenant ID of the stack associated with the stack instance.
latest_stack_set_operation_id	String	Stack set operation ID for the latest deployment of the stack instance. It is a UUID generated by RFS when a stack set operation is created.
region	String	Region of the stack associated with the stack instance.
create_time	String	Time when a stack instance is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Parameter	Type	Description
update_time	String	Time when a stack instance is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
var_overrides	**var_overrides** object	Overridden variables of the stack instance. If you use the CreateStackInstances or UpdateStackInstances APIs to override variables on the stack instance, this field returns the latest overridden variables recorded by the stack instance. If this field is not returned, use the variables recorded in the stack set to deploy the instance.

Table 2-784 var_overrides

Parameter	Type	Description
vars_uri_content	String	File content corresponding to vars_uri.
vars_body	String	Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes. • The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body. • RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. • If vars_body is too large, you can use vars_uri. • Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.

Status code: 400

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Table 2-785 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-786 Detail

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

Status code: 401

Table 2-787 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-788 Detail

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

Status code: 403

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Table 2-789 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-790 Detail

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

Status code: 404

Table 2-791 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-792 Detail

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

Status code: 429

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Table 2-793 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-794 Detail

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

Status code: 500

Table 2-795 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-796 Detail

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

Example Requests

Obtain details about the stack instance whose region is cn-north-7 and domain_id is my-domain-id.

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```
GET https://{endpoint}/v1/stack-sets/my_stack_set/stack-instances/cn-north-7%2fmy-domain-id
```

Example Responses

Status code: 200

Stack instance obtained.

```
{
  "stack_set_id" : "f689e9fd-97e7-4185-bd8a-7d5f708d45d7",
  "stack_set_name" : "my_hello_world_stack_set",
  "latest_stack_set_operation_id" : "3fef5d3e-27b6-44e8-9769-1d7262bd9430",
  "status" : "OPERATION_COMPLETE",
  "stack_id" : "ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2",
  "stack_name" : "my_hello_world_stack",
  "stack_domain_id" : "6cbcca2a2f114a63841bdbc7a19b7b09",
  "region" : "cn-north-7",
  "create_time" : "2023-05-15T15:39:25.210Z",
  "update_time" : "2023-05-15T16:39:25.210Z",
  "var_overrides" : {
    "vars_body" : "var_key1=\"var_value1\"",
    "vars_uri_content" : "var_key2=\"var_value2\""
  }
}
```

Status Codes

Status Code	Description
200	Stack instance obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The stack set or the stack instance does not exist.
429	Too frequent requests.
500	Internal server error.

2.7 Resource Formation - Customized Providers

2.7.1 Create a private provider

Function

CreatePrivateProvider

Create an empty private provider. If the user provides both provider_version and function_graph_urn, upon creating a private provider, a corresponding private provider version is also created within the private provider.

- Private providers allow users to register customized providers into RFS for their own use only.
- If the private provider with the same name already exists, 409 is returned.
- The provider_version must follow the Semantic Version and is customized by the user.
- In this API, provider_version and function_graph_urn must be provided together. If only one of the parameters is provided, 400 is returned.
- RFS only performs a shallow validation on function_graph_urn, verifying compliance with regular rules and presence within valid region. However, no comprehensive validations are performed, including validation of user permissions or existence, etc.
- This API returns the provider_source field, formatted as "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the description below.
- If the user wants to use a provider whose name does not contain uppercase English character, the provider_source field can be specified as the source parameter in required_providers defined in the template as shown below.
- If the user wants to use a provider whose name contains uppercase English character, the provider_name needs to be completely converted into lowercase English. At the same time, users can either use the provider_source parameter returned by the API in the template, or use "huawei.com/private-provider" as the fixed prefix in the template, and construct the provider_source parameter according to the original provider_name in uppercase English.
- When using this private provider, if the user wants RFS to use the IAM Agency to call FG and OBS, they can provide the Agency information when creating the private provider. This Agency will apply to all versions of the private provider. Only one of provider_agency_name or provider_agency_urn can be provided. It is recommended that users provide provider_agency_urn when using a trust agency. provider_agency_name can only accept the name of common agency. If a name of trust agency is provided, the deployment of the stack using the private provider will fail.

Taking HCL template as an example, the syntax for using a private provider in the template is as follows:

```
Provider "{provider_name}" {
  source = "{provider_source}"
  version = "{provider_version}"
}
```

Taking JSON template as an example, the syntax for using a private provider in the template is as follows:

```
{
  "terraform":{
    "required_providers":[
      {
        "{provider_name}":{
          "source":"{provider_source}",
          "version":"{provider_version}"
        }
      }
    ]
  }
}
```

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When RFS supports users to use the Event function in FunctionGraph (hereinafter referred to as FG) to run private providers, we establish a set of detailed integration guidelines to ensure successful interaction between RFS and private providers.

About the use of FG's Event functions, please refer to the official website documentation: https://support.huaweicloud.com/productdesc-functiongraph/functiongraph_02_1002.html.

Users need to implement a set of corresponding methods in the Event function, according to the following rules:

1. Users are required to initiate an HTTP Server in FG, intended to accept HTTP requests from RFS. The request path is fixed to "/provider" with "POST" request method. RFS defines the format of the HTTP request body as follows:

   ```
   {
     "method_name": String,
     "request_data": String,
     "context":{
       "session_id": String,
       "config_data": String
     }
   }
   ```

   The Event function of FG provided by users should be able to receive the above request. Otherwise, it fails to invoke the private provider.

2. The following is a detailed explanation of how to use the parameters in the request body to achieve successful interaction between FG and RFS:

   ```
   tfplugin5.proto:
     "/tfplugin5.Provider/GetSchema"
     "/tfplugin5.Provider/PrepareProviderConfig"
     "/tfplugin5.Provider/ValidateResourceTypeConfig"
     "/tfplugin5.Provider/ValidateDataSourceConfig"
     "/tfplugin5.Provider/UpgradeResourceState"
     "/tfplugin5.Provider/Configure"
     "/tfplugin5.Provider/ReadResource"
     "/tfplugin5.Provider/PlanResourceChange"
     "/tfplugin5.Provider/ApplyResourceChange"
     "/tfplugin5.Provider/ImportResourceState"
     "/tfplugin5.Provider/ReadDataSource"
     "/tfplugin5.Provider/Stop"
   grpc_controller.proto:
     "/plugin.GRPCController/Shutdown"
   ```

   "request_data": The request data of each method in the Event function passed by RFS to FG. In each method, the request_data needs to be decoded using base64 first, and then passed in as the input of the private provider's gRPC method.

3. The request response implemented in FG's Event function should be returned in a fixed format. The format of the response body is as follows. The successful response code is fixed at 200. Any other response codes are regarded as failed requests and cause the deployment failure.

   ```
   {
     "response_data": String,
     "error": String
   }
   ```

   "response_data": The response data returned by invoking the gRPC method of the private provider. In FG's Event function, the response returned by the gRPC method needs to be base64 encoded and returned.

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4. The user needs to configure the async notification for FG event functions. For gRPC requests related to reads that do not involve resource operations, RFS defaults to calling FG synchronously. For gRPC requests related to writes that involve resource operations, RFS defaults to calling FG asynchronously.

   ```
   tfplugin5.proto:
     "/tfplugin5.Provider/GetSchema"
     "/tfplugin5.Provider/PrepareProviderConfig"
     "/tfplugin5.Provider/ValidateResourceTypeConfig"
     "/tfplugin5.Provider/ValidateDataSourceConfig"
     "/tfplugin5.Provider/UpgradeResourceState"
     "/tfplugin5.Provider/Configure"
     "/tfplugin5.Provider/ReadResource"
     "/tfplugin5.Provider/ImportResourceState"
     "/tfplugin5.Provider/ReadDataSource"
   ```

   The following gRPC requests are called asynchronously by default:

   ```
   tfplugin5.proto:
     "/tfplugin5.Provider/PlanResourceChange"
     "/tfplugin5.Provider/ApplyResourceChange"
     "/tfplugin5.Provider/Stop"
   grpc_controller.proto:
     "/plugin.GRPCController/Shutdown"
   ```

   Currently, the target service for success and failure notification of FG asynchronous configuration only supports OBS. If the user enables persists the asynchronous invocation status, RFS will poll FG to retrieve the list of asynchronous invocations to check the status of the asynchronous invocation. Otherwise, it will poll OBS to check if there are results of asynchronous invocation to determine the status.

"method_name": RFS expects the gRPC method name invoked in FG's Event function. In the request body, RFS selects one of the following methods for delivery each time according to the actual business scene. Each method name needs to correspond one-to-one with the native gRPC method in the provider. After receiving a request with one certain method name, FG's Event function should call the corresponding private provider's native gRPC method to implement the processing logic for resources.

Please refer to the native gRPC protocol provided in the provider: tfplugin5.proto and grpc_controller.proto. The list of method name is as follows:

"config_data": Used for initialization before provider handles actual requests. If the config_data in the context is not empty, FG's Event function needs to first invoke the /tfplugin5.Provider/Configure method with config_data as input for initialization, and then invoke the corresponding method according to method_name to get the response.

"session_id": Indicates whether the request comes from the same batch of tasks in the same template.The same session_id means that the request comes from the same batch of orchestration tasks in the same template.

Note: The same provider process started by users cannot accept multiple requests from RFS. RFS recommends that users start a new process to handle related requests every time.

"error": Error message returned by invoking gRPC method.

The following gRPC requests are called synchronously by default:

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For synchronous invocations, RFS blocks and waits for FG to return the invocation result. For asynchronous invocations, RFS retrieves the result from the OBS bucket after determining that the asynchronous invocation has completed.

**Constraints and Limitations: **

1. The private provider is defined and provided to RFS by the users. RFS does not verify its internal logic.
2. RFS does not manage the lifecycle of private providers. If a stack deployment encounters issues due to the absence or malfunction of a private provider, RFS does not provide a resolution.
3. RFS does not ensure the information security of private providers. If a stack deployed using a private provider contains sensitive data in the template and results in leakage to third-party resources, RFS does not take any responsibilities.
4. Network factors are taken into account during the invocation of private providers, increasing the probability of deployment failure for private providers. If deployment fails due to network issues, users can implement retry operations.
5. RFS synchronously calls a set of read-related gRPC methods defined in FG by users. Each of these method needs to complete execution within 30 seconds to minimize the probability of failure.
6. Only fixed private provider versions in templates are supported, and the expressions of loose versions such as >, >=, <, <=, ~> are not supported.

URI

POST /v1/private-providers

Request Parameters

Table 2-797 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-798 Request body parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template. CreatePrivateProvider API also uses "huawei.com/private-provider" as the fixed prefix and returns the provider_source value in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider API.
provider_description	No	String	Description of a private provider. It can be used by customers to identify their own private providers.
provider_version	No	String	Private provider version. The version number follows the Semantic Version and is customized by the user.
version_description	No	String	The Description of the private provider version. It can be used by users to identify and manage private provider versions. Note: The private provider version is immutable, so the description cannot be updated. If it needs to be updated, please delete private provider version and rebuild it.

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Parameter	Mandatory	Type	Description
function_graph_urn	No	String	Uniform resource identifier for FunctionGraph methods, it can be used to uniquely identify FunctionGraph methods. Only supports the function graph urns in the same region as RFS. If provided in other regions, 400 is returned. For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html
provider_agency_urn	No	String	The Urn of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.
provider_agency_name	No	String	The Name of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.

Response Parameters

Status code: 201

Table 2-799 Response body parameters

Parameter	Type	Description
provider_id	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_source	String	When users use private providers and define required_providers information in the template, they need to specify the source using provider_source value. Provider source is spliced in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider.

Status code: 400

Table 2-800 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-801 Detail

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

Status code: 401

Table 2-802 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-803 Detail

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

Status code: 403

Table 2-804 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-805 Detail

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

Status code: 409

Table 2-806 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-807 Detail

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

Status code: 429

Table 2-808 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-809 Detail

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

Status code: 500

Table 2-810 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-811 Detail

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

Example Requests

- Create a new empty private provider

```
POST https://{endpoint}/v1/private-providers

{
  "provider_name" : "my-hello-world-provider-name",
```

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```
  "provider_description" : "my first private provider"
}
```

- Create a new private provider with provider version

```
POST https://{endpoint}/v1/private-providers

{
  "provider_name" : "my-hello-world-provider-name",
  "provider_description" : "my first hello world private provider",
  "provider_version" : "0.0.1",
  "function_graph_urn" : "urn:fss:cn-
north-7:a61dfe3154de42829367056598d5040f:function:default:test:latest",
  "version_description" : "my first private provider version"
}
```

Example Responses

Status code: 201

Private provider created successfully

```
{
  "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "provider_source" : "huawei.com/private-provider/my-hello-world-provider-name"
}
```

Status Codes

Status Code	Description
201	Private provider created successfully
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private providers has been reached.
409	Creation requests conflict. The private provider with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.7.2 Listing private providers

Function

ListPrivateProviders

This API lists all private providers of the current account (domain) at the current region.

- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as

that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.

- If there is no private provider, an empty list will be returned.
- If you want to view all provider versions under the private provider, please use ListPrivateProviderVersions API.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/private-providers

Table 2-812 Query Parameters

Parameter	Mandatory	Type	Description
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-813 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-814 Response body parameters

Parameter	Type	Description
providers	Array of **PrivateProvider-Summary** objects	Private providers, sorted by creation time in descending order by default.
page_info	**PageInfo** object	Pagination information

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Table 2-815 PrivateProviderSummary

Parameter	Type	Description
provider_id	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_name	String	Private provider name. The name is unique within its domain (domain_id) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template. CreatePrivateProvider API also uses "huawei.com/private-provider" as the fixed prefix and returns the provider_source value in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider API.
provider_description	String	Description of a private provider. It can be used by customers to identify their own private providers.

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Parameter	Type	Description
provider_source	String	When users use private providers and define required_providers information in the template, they need to specify the source using provider_source value. Provider source is spliced in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider.
provider_agency_urn	String	The Urn of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.
provider_agency_name	String	The Name of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.
create_time	String	Time when a private provider is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a private provider is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Table 2-816 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.

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Parameter	Type	Description
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-817 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-818 Detail

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

Status code: 401

Table 2-819 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-820 Detail

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

Status code: 403

Table 2-821 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-822 Detail

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

Status code: 429

Table 2-823 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-824 Detail

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

Status code: 500

Table 2-825 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-826 Detail

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

Example Requests

- You can obtain all private providers of the current account (domain) at the current region. The returned private providers are sorted in descending order by creation time.

  ```
  GET https://{endpoint}/v1/private-providers
  ```

- You can obtain all private providers of the current account (domain) at the current region. The returned private providers are sorted in ascending order by creation time.

  ```
  GET https://{endpoint}/v1/private-providers?sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

List private providers succeeded.

```
{
  "providers" : [ {
```

```
    "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
    "provider_name" : "my-hello-world-provider-name-1",
    "provider_description" : "my first hello world private provider",
    "provider_source" : "huawei.com/private-provider/my-hello-world-provider-name",
    "create_time" : "2024-01-01T00:00:00.000Z",
    "update_time" : "2024-01-01T00:00:00.000Z"
  }, {
    "provider_id" : "337cb9a1-6293-4f80-a903-66cd195283f7",
    "provider_name" : "my-hello-world-provider-name-2",
    "provider_description" : "my first hello world private provider",
    "provider_source" : "huawei.com/private-provider/my-hello-world-provider-name",
    "create_time" : "2023-01-01T00:00:00.000Z",
    "update_time" : "2023-01-01T00:00:00.000Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	List private providers succeeded.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

2.7.3 Create a private provider version

Function

CreatePrivateProviderVersion

- The provider_version must follow the Semantic Version and is customized by the user.
- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.
- RFS only performs a shallow check on function_graph_urn, verifying compliance with regular rules and presence within valid region. However, no comprehensive verifications are performed, including validation of user permissions or existence, etc.

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URI

POST /v1/private-providers/{provider_name}/versions

Table 2-827 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.

Request Parameters

Table 2-828 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Table 2-829 Request body parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_version	Yes	String	Private provider version. The version number follows the Semantic Version and is customized by the user.
version_description	No	String	The Description of the private provider version. It can be used by users to identify and manage private provider versions. Note: The private provider version is immutable, so the description cannot be updated. If it needs to be updated, please delete private provider version and rebuild it.

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Parameter	Mandatory	Type	Description
function_graph_urn	Yes	String	Uniform resource identifier for FunctionGraph methods, it can be used to uniquely identify FunctionGraph methods. Only supports the function graph urns in the same region as RFS. If provided in other regions, 400 is returned. For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html

Response Parameters

Status code: 201

Private provider version created successfully. No content returned

Status code: 400

Table 2-830 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-831 Detail

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

Status code: 401

Table 2-832 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-833 Detail

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

Status code: 403

Table 2-834 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-835 Detail

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

Status code: 404

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Table 2-836 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-837 Detail

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

Status code: 409

Table 2-838 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-839 Detail

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

Status code: 429

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Table 2-840 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-841 Detail

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

Status code: 500

Table 2-842 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-843 Detail

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

Example Requests

- Create a new private provider version

```
POST https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions
```

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```
{
  "provider_version" : "0.0.2",
  "function_graph_urn" : "urn:fss:cn-
north-7:a61dfe3154de42829367056598d5040f:function:default:test:latest",
  "version_description" : "my second private provider version"
}
```

- Create a new private provider version with provider ID

```
POST https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions

{
  "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "provider_version" : "0.0.1",
  "function_graph_urn" : "urn:fss:cn-
north-7:a61dfe3154de42829367056598d5040f:function:default:test:latest",
  "version_description" : "my first private provider version"
}
```

Example Responses

None

Status Codes

Status Code	Description
201	Private provider version created successfully. No content returned
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private provider versions has been reached.
404	The private provider does not exist.
409	Creation requests conflict. The specified private provider version already exists.
429	Too frequent requests.
500	Internal server error.

2.7.4 Listing private provider versions

Function

ListPrivateProviderVersions

You can use this API to list all private provider versions of the private provider.

- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir

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are not assigned, results are sorted by creation time in descending order by default.

- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.
- If there is no provider version under the private provider, an empty list will be returned.
- If private provider does not exist, error code 404 will be returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/private-providers/{provider_name}/versions

Table 2-844 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.

Table 2-845 Query Parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order

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Parameter	Mandatory	Type	Description
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-846 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-847 Response body parameters

Parameter	Type	Description
versions	Array of **PrivateProvider-VersionSummary** objects	Private provider versions, sorted by creation time in descending order by default.
page_info	**PageInfo** object	Pagination information

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Table 2-848 PrivateProviderVersionSummary

Parameter	Type	Description
provider_id	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_name	String	Private provider name. The name is unique within its domain (domain_id) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template. CreatePrivateProvider API also uses "huawei.com/private-provider" as the fixed prefix and returns the provider_source value in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider API.
provider_version	String	Private provider version. The version number follows the Semantic Version and is customized by the user.

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Parameter	Type	Description
version_description	String	The Description of the private provider version. It can be used by users to identify and manage private provider versions. Note: The private provider version is immutable, so the description cannot be updated. If it needs to be updated, please delete private provider version and rebuild it.
function_graph_urn	String	Uniform resource identifier for FunctionGraph methods, it can be used to uniquely identify FunctionGraph methods. Only supports the function graph urns in the same region as RFS. If provided in other regions, 400 is returned. For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html
create_time	String	Time when a private provider version is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Table 2-849 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-850 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-851 Detail

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

Status code: 401

Table 2-852 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-853 Detail

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

Status code: 403

Table 2-854 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-855 Detail

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

Status code: 404

Table 2-856 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-857 Detail

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

Status code: 429

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Table 2-858 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-859 Detail

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

Status code: 500

Table 2-860 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-861 Detail

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

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Example Requests

- You can obtain all private provider versions of the private provider named my-hello-world-provider-name. The returned private provider versions are sorted in descending order by creation time.

  ```
  GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions
  ```

- You can obtain all private provider versions of the private provider named my-hello-world-provider-name. The returned private provider versions are sorted in ascending order by creation time.

  ```
  GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions?
  sort_key=create_time&sort_dir=asc
  ```

- You can obtain all private provider versions of the private provider named my-hello-world-provider-name and check whether the provided private provider ID matches the current private provider.. The returned private provider versions are sorted in ascending order by creation time.

  ```
  GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions?
  provider_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

List private provider versions succeeded.

```
{
  "versions" : [ {
    "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
    "provider_name" : "my-hello-world-provider-name",
    "provider_version" : "3.7.10",
    "version_description" : "my first hello world private provider version",
    "function_graph_urn" : "urn:fss:cn-
north-7:b61dfe3154de4282787126568d5040f:function:default:myFG:latest",
    "create_time" : "2024-01-01T00:00:00.000Z"
  }, {
    "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
    "provider_name" : "my-hello-world-provider-name",
    "provider_version" : "3.7.10",
    "version_description" : "my first hello world private provider version",
    "function_graph_urn" : "urn:fss:cn-
north-7:b61dfe3154de4282787126568d5040f:function:default:myFG:latest",
    "create_time" : "2023-01-01T00:00:00.000Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```

Status Codes

Status Code	Description
200	List private provider versions succeeded.
400	Invalid request.

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Status Code	Description
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private provider does not exist.
429	Too frequent requests.
500	Internal server error.

2.7.5 Delete a private provider

Function

DeletePrivateProvider

Delete a private provider and all provider versions under the private provider.

- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.

** Please use with caution. Deleting a private provider will delete all provider versions under the private provider. **

URI

DELETE /v1/private-providers/{provider_name}

Table 2-862 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.

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Table 2-863 Query Parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.

Request Parameters

Table 2-864 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 204

Private provider version deleted. No data is returned.

Status code: 400

Table 2-865 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-866 Detail

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

Status code: 401

Table 2-867 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-868 Detail

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.

Status code: 403

Table 2-869 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-870 Detail

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

Status code: 404

Table 2-871 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-872 Detail

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

Status code: 429

Table 2-873 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-874 Detail

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

Status code: 500

Table 2-875 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-876 Detail

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

Example Requests

- Delete a specified private provider and all provider versions under the private provider.

  ```
  DELETE https://{endpoint}/v1/private-providers/my-hello-world-provider-name
  ```

- Delete a specified private provider and all provider versions under the private provider. Also check whether the provided private provider ID matches the current private provider.

  ```
  DELETE https://{endpoint}/v1/private-providers/my-hello-world-provider-name?provider_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Private provider version deleted. No data is returned.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. Private provider versions exist under this private provider.
404	The private provider does not exist.
429	Too frequent requests.
500	Internal server error.

2.7.6 Obtaining metadata of a private provider

Function

ShowPrivateProviderMetadata

You can use this API to obtain the private provider metadata.

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- Please refer to the ShowPrivateProviderMetadataResponseBody for specific returned response, if you want to view all provider versions under the private provider, please use ListPrivateProviderVersions API.
- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.

URI

GET /v1/private-providers/{provider_name}/metadata

Table 2-877 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.

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Table 2-878 Query Parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.

Request Parameters

Table 2-879 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 200

Table 2-880 Response body parameters

Parameter	Type	Description
provider_id	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_name	String	Private provider name. The name is unique within its domain (domain_id) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template. CreatePrivateProvider API also uses "huawei.com/private-provider" as the fixed prefix and returns the provider_source value in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider API.

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Parameter	Type	Description
provider_description	String	Description of a private provider. It can be used by customers to identify their own private providers.
provider_source	String	When users use private providers and define required_providers information in the template, they need to specify the source using provider_source value. Provider source is spliced in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider.
provider_agency_urn	String	The Urn of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.
provider_agency_name	String	The Name of IAM Agency bound to the customized provider, at most one of provider_agency_name or provider_agency_urn should be provided.
create_time	String	Time when a private provider is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a private provider is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Status code: 400

Table 2-881 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-882 Detail

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

Status code: 401

Table 2-883 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-884 Detail

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

Status code: 403

Table 2-885 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-886 Detail

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

Status code: 404

Table 2-887 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-888 Detail

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

Status code: 429

Table 2-889 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-890 Detail

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

Status code: 500

Table 2-891 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-892 Detail

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

Example Requests

- Obtain metadata of a specified private provider.

  ```
  GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name
  ```

- Obtain metadata of a specified private provider and check whether the provided private provider ID matches the current private provider.

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```
GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name?provider_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
```

Example Responses

Status code: 200

Private provider metadata obtained.

```
{
  "provider_name" : "my-hello-world-provider-name",
  "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "provider_source" : "huawei.com/private-provider/my-hello-world-provider-name",
  "provider_description" : "my first hello world private provider",
  "create_time" : "1970-01-01T00:00:00.000Z",
  "update_time" : "1970-01-01T00:00:00.000Z"
}
```

Status Codes

Status Code	Description
200	Private provider metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private provider does not exist.
429	Too frequent requests.
500	Internal server error.

2.7.7 Updating metadata of a private provider

Function

UpdatePrivateProviderMetadata

You can use this API to update the private provider metadata.

- Currently, only the description of private providers can be updated.
- If you need to create a new version, please call CreatePrivateProviderVersion API.
- The update is an incremental update, meaning if a parameter is not provided, the original value will be retained.
- If the request does not contain any parameters that need to be updated, 400 status code will be returned. Note: Even if the original value and the target value are the same, it is considered a valid update.
- After the update, the update time of the private provider will also be updated.

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- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.

URI

PATCH /v1/private-providers/{provider_name}/metadata

Table 2-893 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.

Request Parameters

Table 2-894 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-895 Request body parameters

Parameter	Mandatory	Type	Description
provider_description	No	String	Description of a private provider. It can be used by customers to identify their own private providers.

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Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.

Response Parameters

Status code: 204

Private provider metadata updated.

Status code: 400

Table 2-896 Response body parameters

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

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Parameter	Type	Description
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-897 Detail

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

Status code: 401

Table 2-898 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-899 Detail

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

Status code: 403

Table 2-900 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-901 Detail

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

Status code: 404

Table 2-902 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-903 Detail

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

Status code: 429

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Table 2-904 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-905 Detail

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

Status code: 500

Table 2-906 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-907 Detail

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

Example Requests

- Update metadata of a specified private provider.

```
PATCH https://{endpoint}/v1/private-providers/my-hello-world-provider-name/metadata
```

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```
{
  "provider_description" : "my first private provider"
}
```

- Update metadata of a specified private provider and check whether the provided private provider ID matches the current private provider.

```
PATCH https://{endpoint}/v1/private-providers/my-hello-world-provider-name/metadata

{
  "provider_description" : "my first private provider",
  "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	Private provider metadata updated.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private provider does not exist.
429	Too frequent requests.
500	Internal server error.

2.7.8 Delete a private provider version

Function

DeletePrivateProviderVersion

This API deletes a private provider version.

- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.

Please use with caution.

URI

DELETE /v1/private-providers/{provider_name}/versions/{provider_version}

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Table 2-908 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.
provider_version	Yes	String	Private provider version. The version number follows the Semantic Version and is customized by the user.

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Table 2-909 Query Parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.

Request Parameters

Table 2-910 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 204

Private provider version deleted successfully. No content is returned.

Status code: 400

Table 2-911 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-912 Detail

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

Status code: 401

Table 2-913 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-914 Detail

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.

Status code: 403

Table 2-915 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-916 Detail

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

Status code: 404

Table 2-917 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-918 Detail

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

Status code: 429

Table 2-919 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-920 Detail

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

Status code: 500

Table 2-921 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

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Table 2-922 Detail

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

Example Requests

- Delete a specified private provider version.

  ```
  DELETE https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions/1.0.0
  ```

- Delete a specified private provider version and check whether the provided private provider ID matches the current private provider.

  ```
  DELETE https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions/1.0.0?provider_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Private provider version deleted successfully. No content is returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private provider or private provider version does not exist.
429	Too frequent requests.
500	Internal server error.

2.7.9 Obtaining metadata of a private provider version

Function

ShowPrivateProviderVersionMetadata

You can use this API to obtain the private provider version metadata.

- Please refer to the ShowPrivateProviderVersionMetadataResponseBody for specific returned response.

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- If both provider_name and provider_id are provided, RFS verifies whether they match. If provider_id does not match the current private provider ID, 400 is returned.

URI

GET /v1/private-providers/{provider_name}/versions/{provider_version}/metadata

Table 2-923 Path Parameters

Parameter	Mandatory	Type	Description
provider_name	Yes	String	Private provider name. The name is unique within its domain (domain_id) and region.Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers.
provider_version	Yes	String	Private provider version. The version number follows the Semantic Version and is customized by the user.

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Table 2-924 Query Parameters

Parameter	Mandatory	Type	Description
provider_id	No	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.

Request Parameters

Table 2-925 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 200

Table 2-926 Response body parameters

Parameter	Type	Description
provider_id	String	Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created. Private provider names are unique only at one specific time, so you can create a private provider named helloWorld and another private provider with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private provider they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private provider is different and does not change with updates. If the provider_id value is different from the current private provider ID, 400 is returned.
provider_name	String	Private provider name. The name is unique within its domain (domain_id) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template. CreatePrivateProvider API also uses "huawei.com/private-provider" as the fixed prefix and returns the provider_source value in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider API.

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Parameter	Type	Description
provider_version	String	Private provider version. The version number follows the Semantic Version and is customized by the user.
version_description	String	The Description of the private provider version. It can be used by users to identify and manage private provider versions. Note: The private provider version is immutable, so the description cannot be updated. If it needs to be updated, please delete private provider version and rebuild it.
function_graph_urn	String	Uniform resource identifier for FunctionGraph methods, it can be used to uniquely identify FunctionGraph methods. Only supports the function graph urns in the same region as RFS. If provided in other regions, 400 is returned. For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html
create_time	String	Time when a private provider version is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
provider_source	String	When users use private providers and define required_providers information in the template, they need to specify the source using provider_source value. Provider source is spliced in the form of "huawei.com/private-provider/{provider_name}". For more details on the use of provider_name and provider_source in templates, see the API description of CreatePrivateProvider.

Status code: 400

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Table 2-927 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-928 Detail

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

Status code: 401

Table 2-929 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-930 Detail

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

Status code: 403

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Table 2-931 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-932 Detail

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

Status code: 404

Table 2-933 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-934 Detail

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

Status code: 429

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Table 2-935 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-936 Detail

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

Status code: 500

Table 2-937 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error messages returned by service when permission is denied.

Table 2-938 Detail

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

Example Requests

- Obtain metadata of a specified private provider version.

  ```
  GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions/1.0.0/metadata
  ```

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- Obtain metadata of a specified private provider version and check whether the provided private provider ID matches the current private provider.

```
GET https://{endpoint}/v1/private-providers/my-hello-world-provider-name/versions/1.0.0/metadata?provider_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
```

Example Responses

Status code: 200

Private provider version metadata obtained.

```
{
  "provider_name" : "my-hello-world-provider-name",
  "provider_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "provider_version" : "3.7.10",
  "version_description" : "my first hello world private provider version",
  "create_time" : "1970-01-01T00:00:00.000Z",
  "function_graph_urn" : "urn:fss:cn-north-7:b61dfe3154de4282787126568d5040f:function:default:myFG:latest",
  "provider_source" : "huawei.com/private-provider/my-hello-world-provider-name"
}
```

Status Codes

Status Code	Description
200	Private provider version metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private provider or private provider version does not exist.
429	Too frequent requests.
500	Internal server error.

2.8 Resource Formation - Hook

2.8.1 create a private hook

Function

CreatePrivateHook

Create a private hook with an initial default version. When creating a private hook, you need to create an initial default version at the same time. An empty private hook cannot be created.

The private hook takes effect when triggering the stack deployment only after the configuration is set. The stack uses the default version of the private hook. If no

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configuration is specified when a private hook is created, the private hook does not take effect during stack deployment. You can update the configuration by calling UpdatePrivateHook API.

- Currently, Stack Service APIs that support hook policy validation are as follows:
- The version specified when the private hook is created is the initial default version.
- If a private hook with the same name already exists in the current domain_id + region, 409 is returned.
- We recommend users to use a three-part namespace for naming the private hook: {custom-hook-name}-{hook application context}-hook.
- The version must follow the Semantic Version and is customized by the user.
- RFS performs validations on private hooks, such as file size checks and policy document syntax validation. If any errors are found, the creation of the hook will fail.
- Currently, our system exclusively facilitates pre-deployment validation for stacks; in-stack deployment checks are not yet supported. If the pre-deployment validation is passed, the deployment is continued. Otherwise, the deployment stops and stack events are recorded.
- Only support policy templates written in Rego (https://www.openpolicyagent.org/docs/latest/policy-language/) and identified by the OPA open source engine. (Users can use policy_uri or policy_body to specify the policy file content.)
- Use hook_result of the object type as the decision result. The name of the package where the hook_result is located must be policy. The format of hook_result is as follows:

  ```
  hook_result := {
    "is_passed": Bool,
    "err_msg": String,
  }
  ```

  is_passed is mandatory and err_msg is optional. RFS queries the policy.hook_result[is_passed] to determine whether the policy verification is passed.

  - If the value of policy.hook_result[is_passed] is true, the policy passes the verification and RFS will continue to deploy stacks.
  - If the value of policy.hook_result[is_passed] is false, the policy fails to be verified. In this case, RFS stops deploying stacks and records the stack event information. The information content is policy.hook_result[err_msg]. If err_msg is not set, the stack event information is the default error information (Validate private hook failed).
  - If policy.hook_result is not used, the policy does not take effect and the RFS continues to deploy stacks.
- The policy template does not support data obtaining by invoking APIs of other services, network access in any form, user-defined functions or methods in any form, local file reading, or system operations.

CreateExecutionPlan

ApplyExecutionPlan

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CreateStack

DeployStack

ContinueDeployStack

DeleteStack

DeleteStackEnhanced

The policy template syntax for a private hook is as follows:

```
package policy

import rego.v1

hook_result := {
  "is_passed": input.message == "world",
  "err_msg": "The error msg when private hook is not passed the validation",
}
```

URI

POST /v1/private-hooks

Request Parameters

Table 2-939 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-940 Request body parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive.
hook_version	Yes	String	Private hook version. The version number follows the Semantic Version and is customized by the user.

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Parameter	Mandatory	Type	Description
hook_description	No	String	Description of a private hook. It can be used by customers to identify their own private hooks. You can update the description of the private hook by calling UpdatePrivateHook API.
hook_version_description	No	String	Description of the private hook version. It can be used by users to identify and manage private hook versions. Note: The private hook version is immutable, so the description cannot be updated. If it needs to be updated, please delete private hook version and rebuild it.
configuration	No	**configuration** object	Private hook configuration. It can specify the target stack where the private hook takes effect and the behavior of the stack after the private hook verification fails. You can use UpdatePrivateHook API to update private hook configuration.

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Parameter	Mandatory	Type	Description
policy_uri	No	String	OBS address of the policy file. The content must be written in the Rego language, which is recognizable by the open-source OPA (Open Policy Agent) engine, as described in the documentation at https://www.openpolicyagent.org/docs/latest/policy-language/. Ensure that the OBS address is located in the same region as the RFS. The policy file can be a single file or a .zip package. A single file must end with .rego. A .zip package must end with .zip. The policy file verification requirements are as follows: • Files must be UTF8 encoded • During creation, validations are performed for size, format, syntax, etc. • The policy file must be in UTF-8 encoding format. • The size of a single file or compressed package before and after decompression must be less than 1 MB. • The number of files in the compressed package cannot exceed 100. • The maximum length of file paths in the compressed package is 2048 characters. • The maximum length of the policy file name in the compressed package is 255 bytes. Either policy_uri or policy_body must be specified.

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Parameter	Mandatory	Type	Description
policy_body	No	String	Policy content. The content must be written in the Rego language, which is recognizable by the open-source OPA (Open Policy Agent) engine, as described in the documentation at https://www.openpolicyagent.org/docs/latest/policy-language/. Either policy_uri or policy_body must be specified.

Table 2-941 configuration

Parameter	Mandatory	Type	Description
target_stacks	No	String	Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. The default value is NONE. NONE: Specifies that this private hook will not be applied to any stacks. ALL: Specifies that the private hook will be applied to all stacks under the account.
failure_mode	No	String	Specifies the behavior when the private hook validation fails. Valid values are FAIL or WARN. The default value is WARN. FAIL: Specifies that if this private hook validation fails, the stack will stop deploying, and the stack status will be updated to DEPLOYMENT_FAILED. WARN: Specifies that if this private hook validation fails, only a warning message will be displayed through the stack events, but it will not affect the deployment of the stack.

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Response Parameters

Status code: 201

Table 2-942 Response body parameters

Parameter	Type	Description
hook_id	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Status code: 400

Table 2-943 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-944 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

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Status code: 403

Table 2-945 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 409

Table 2-946 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-947 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-948 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Create a private hook with an initial default version by policy uri

```
POST https://{endpoint}/v1/private-hooks
```

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```
{
  "hook_name" : "my-hello-world-hook-name",
  "hook_version" : "0.0.1",
  "policy_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/policy.rego",
  "configuration" : {
    "target_stacks" : "NONE",
    "failure_mode" : "WARN"
  },
  "hook_description" : "my first private hook",
  "hook_version_description" : "my first private hook version"
}
```

- Create a private hook with an initial default version by policy body

```
POST https://{endpoint}/v1/private-hooks

{
  "hook_name" : "my-hello-world-hook-name",
  "hook_version" : "0.0.1",
  "policy_body" : "package policy\n\nimport rego.v1\n\nhook_result := {\n\"is_passed\": input.message
== \"world\",\n\"err_msg\": \"The error msg when private hook is not passed the validation\",\n}",
  "configuration" : {
    "target_stacks" : "NONE",
    "failure_mode" : "WARN"
  },
  "hook_description" : "my first private hook",
  "hook_version_description" : "my first private hook version"
}
```

Example Responses

Status code: 201

Private hook created successfully.

```
{
  "hook_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3"
}
```

Status Codes

Status Code	Description
201	Private hook created successfully.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private hook has been reached.
409	Creation requests conflict. The specified private hook already exists.
429	Too frequent requests.
500	Internal server error.

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2.8.2 Listing private hooks

Function

ListPrivateHooks

This API lists all private hooks of the current account (domain) at the current region.

- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.
- If there is no private hook, an empty list will be returned.
- The specific information returned can be found in ListPrivateHooksResponseBody.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

URI

GET /v1/private-hooks

Table 2-949 Query Parameters

Parameter	Mandatory	Type	Description
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.

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Parameter	Mandatory	Type	Description
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-950 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-951 Response body parameters

Parameter	Type	Description
hooks	Array of **PrivateHookSummary** objects	Private hooks, sorted by creation time in descending order by default.
page_info	**PageInfo** object	Pagination information

Table 2-952 PrivateHookSummary

Parameter	Type	Description
hook_name	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive.

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Parameter	Type	Description
hook_id	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.
hook_description	String	Description of a private hook. It can be used by customers to identify their own private hooks. You can update the description of the private hook by calling UpdatePrivateHook API.
default_version	String	Private hook default version. The version number follows the Semantic Version and is customized by the user.
configuration	**configuration** object	Private hook configuration. It can specify the target stack where the private hook takes effect and the behavior of the stack after the private hook verification fails. You can use UpdatePrivateHook API to update private hook configuration.
create_time	String	Time when a private hook is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a private hook is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Table 2-953 configuration

Parameter	Type	Description
target_stacks	String	Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. The default value is NONE. NONE: Specifies that this private hook will not be applied to any stacks. ALL: Specifies that the private hook will be applied to all stacks under the account.
failure_mode	String	Specifies the behavior when the private hook validation fails. Valid values are FAIL or WARN. The default value is WARN. FAIL: Specifies that if this private hook validation fails, the stack will stop deploying, and the stack status will be updated to DEPLOYMENT_FAILED. WARN: Specifies that if this private hook validation fails, only a warning message will be displayed through the stack events, but it will not affect the deployment of the stack.

Table 2-954 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

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Table 2-955 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-956 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-957 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-958 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-959 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

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Example Requests

- You can obtain all private hooks of the current account (domain) at the current region. The returned private hooks are sorted in descending order by creation time

  ```
  GET https://{endpoint}/v1/private-hooks
  ```

- You can obtain all private hooks of the current account (domain) at the current region. The returned private hooks are sorted in ascending order by creation time

  ```
  GET https://{endpoint}/v1/private-hooks?sort_key=create_time&sort_dir=asc
  ```

- You can obtain all private hooks of the current account (domain) at the current region. The returned private hooks are sorted in descending order by creation time

  ```
  GET https://{endpoint}/v1/private-hooks?sort_key=create_time&sort_dir=desc
  ```

Example Responses

Status code: 200

List private hooks succeeded.


```
{
  "hooks" : [ {
    "hook_id" : "5009b614-184f-fdd0-2d29-a376b76184b6",
    "hook_name" : "test-hook-name-1",
    "hook_description" : "Test Hook1 Description",
    "default_version" : "1.2.3",
    "configuration" : {
      "target_stacks" : "NONE",
      "failure_mode" : "WARN"
    },
    "create_time" : "2024-06-01T01:00:00.000Z",
    "update_time" : "2024-06-01T02:00:00.000Z"
  }, {
    "hook_id" : "55a69e5a-6563-5358-86a0-e4be65312680",
    "hook_name" : "test-hook-name-2",
    "hook_description" : "Test Hook2 Description",
    "default_version" : "1.2.3",
    "configuration" : {
      "target_stacks" : "NONE",
      "failure_mode" : "WARN"
    },
    "create_time" : "2024-05-01T01:00:00.000Z",
    "update_time" : "2024-05-01T02:00:00.000Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	List private hooks succeeded.

Status Code	Description
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

2.8.3 Delete a private hook

Function

DeletePrivateHook

Deletes a private hook and all hook versions under the private hook.

- The default version can be deleted only by calling this API. Other versions can be deleted by calling DeletePrivateHookVersion API.
- If both hook_name and hook_id are provided, RFS checks whether they match. If they do not match, 400 is returned.

** Please use with caution. Deleting a private hook will delete the private hook and all private hook versions under this private hook. **

URI

DELETE /v1/private-hooks/{hook_name}

Table 2-960 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.

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Table 2-961 Query Parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Request Parameters

Table 2-962 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

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Response Parameters

Status code: 204

Private hook deleted. No data is returned.

Status code: 400

Table 2-963 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-964 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-965 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-966 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

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Table 2-967 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-968 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Delete a specified private hook

  ```
  DELETE https://{endpoint}/v1/private-hooks/my-hello-world-hook-name
  ```

- Delete a specified private hook and check whether the provided private hook ID matches the current private hook

  ```
  DELETE https://{endpoint}/v1/private-hooks/my-hello-world-hook-name?
  hook_id=d3e79f29-1b5c-44b2-8236-d609a59a634e
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Private hook deleted. No data is returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private hook does not exist.
429	Too frequent requests.
500	Internal server error.

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2.8.4 Create a private hook version

Function

CreatePrivateHookVersion

Create a private hook version. After creating a private hook version, you need to call UpdatePrivateHook API to set it as the default version for it to take effect.

- The hook_version must follow the Semantic Version and is customized by the user.
- If both hook_name and hook_id are provided, RFS checks whether they match. If hook name does not match the current private hook ID, error code 400 is returned.
- RFS performs validations on private hooks, such as file size checks and policy document syntax validation. If any errors are found, the creation of the hook will fail.

URI

POST /v1/private-hooks/{hook_name}/versions

Table 2-969 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.

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Request Parameters

Table 2-970 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-971 Request body parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.
hook_version	Yes	String	Private hook version. The version number follows the Semantic Version and is customized by the user.

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Parameter	Mandatory	Type	Description
hook_version_description	No	String	Description of the private hook version. It can be used by users to identify and manage private hook versions. Note: The private hook version is immutable, so the description cannot be updated. If it needs to be updated, please delete private hook version and rebuild it.

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Parameter	Mandatory	Type	Description
policy_uri	No	String	OBS address of the policy file. The content must be written in the Rego language, which is recognizable by the open-source OPA (Open Policy Agent) engine, as described in the documentation at https://www.openpolicyagent.org/docs/latest/policy-language/. Ensure that the OBS address is located in the same region as the RFS. The policy file can be a single file or a .zip package. A single file must end with .rego. A .zip package must end with .zip. The policy file verification requirements are as follows: ● Files must be UTF8 encoded ● During creation, validations are performed for size, format, syntax, etc. ● The policy file must be in UTF-8 encoding format. ● The size of a single file or compressed package before and after decompression must be less than 1 MB. ● The number of files in the compressed package cannot exceed 100. ● The maximum length of file paths in the compressed package is 2048 characters. ● The maximum length of the policy file name in the compressed package is 255 bytes. Either policy_uri or policy_body must be specified.

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Parameter	Mandatory	Type	Description
policy_body	No	String	Policy content. The content must be written in the Rego language, which is recognizable by the open-source OPA (Open Policy Agent) engine, as described in the documentation at https://www.openpolicyagent.org/docs/latest/policy-language/. Either policy_uri or policy_body must be specified.

Response Parameters

Status code: 201

Private hook version created successfully. No content returned.

Status code: 400

Table 2-972 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-973 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-974 Response body parameters

Parameter	Type	Description
error_code	String	Response code

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Parameter	Type	Description
error_msg	String	Response message

Status code: 404

Table 2-975 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 409

Table 2-976 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-977 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-978 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

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Example Requests

- Create a private hook version under the specified private hook via the policy uri

```
POST https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions

{
  "hook_version" : "0.0.1",
  "policy_uri" : "https://my_hello_world_bucket.{region}.myhuaweicloud.com/policy.rego",
  "hook_version_description" : "my first private hook version"
}
```

- Create a private hook version under the specified private hook via the policy body

```
POST https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions

{
  "hook_version" : "0.0.2",
  "policy_body" : "package policy\n\nimport rego.v1\n\nhook_result := {\n\"is_passed\": input.message == \"world\",\n\"err_msg\": \"The error msg when private hook is not passed the validation\",\n}",
  "hook_version_description" : "my second private hook version"
}
```

Example Responses

None

Status Codes

Status Code	Description
201	Private hook version created successfully. No content returned.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private hook versions has been reached.
404	The private hook does not exist.
409	Creation requests conflict. The specified private hook version already exists.
429	Too frequent requests.
500	Internal server error.

2.8.5 Delete a private hook version

Function

DeletePrivateHookVersion

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This API deletes a private hook version.

- The default version can only be deleted by calling DeletePrivateHook API. All other versions except the default one can be deleted using this API.
- If both hook_name and hook_id are provided, RFS checks whether they match. If hook name does not match the current private hook ID, error code 400 is returned.

Please use with caution.

URI

DELETE /v1/private-hooks/{hook_name}/versions/{hook_version}

Table 2-979 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.
hook_version	Yes	String	Private hook version. The version number follows the Semantic Version and is customized by the user.

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Table 2-980 Query Parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Request Parameters

Table 2-981 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 204

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Private hook version deleted successfully. No content returned.

Status code: 400

Table 2-982 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-983 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-984 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-985 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

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Table 2-986 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-987 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Delete a specified private hook version

  ```
  DELETE https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1
  ```

- Delete a specified private hook version and check whether the provided private hook ID matches the current private hook

  ```
  DELETE https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1?
  hook_id=d3e79f29-1b5c-44b2-8236-d609a59a634e
  ```

Example Responses

None

Status Codes

Status Code	Description
204	Private hook version deleted successfully. No content returned.
400	Invalid request.
401	Authentication failed.
403	1.The user is not allowed to delete the default version. 2.The user does not have the permission to call this API.
404	The private hook or private hook version does not exist.
429	Too frequent requests.
500	Internal server error.

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2.8.6 Showing the policy of a private hook version

Function

ShowPrivateHookVersionPolicy

You can use this API to show the private hook version policy.

- If the private hook version policy is successfully obtained, the download link for the private hook version policy (OBS presigned URL, valid for 5 minutes) is returned in temporary redirection mode. Most clients automatically redirect and download the private hook version policy.
- If automatic redirection is not performed, refer to the HTTP redirection rule and manually download the private hook version policy.

URI

GET /v1/private-hooks/{hook_name}/versions/{hook_version}/policies

Table 2-988 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.
hook_version	Yes	String	Private hook version. The version number follows the Semantic Version and is customized by the user.

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Table 2-989 Query Parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Request Parameters

Table 2-990 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 307

Table 2-991 Response header parameters

Parameter	Type	Description
Location	String	HTTP redirect header. The client can use this header to redirect to a download link for the private hook version policy (OBS presigned URL, valid for 5 minutes).

Status code: 400

Table 2-992 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-993 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-994 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-995 Response body parameters

Parameter	Type	Description
error_code	String	Response code

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Parameter	Type	Description
error_msg	String	Response message

Status code: 429

Table 2-996 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

Table 2-997 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Showing the policy of a private hook version

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1/policies
  ```

- Showing the policy of a private hook version and check whether the provided private hook ID matches the current private hook

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1/policies?
  hook_id=d3e79f29-1b5c-44b2-8236-d609a59a634e
  ```

Example Responses

None

Status Codes

Status Code	Description
307	Private hook version policy showed. Temporary redirect.
400	Invalid request.
401	Authentication failed.

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Status Code	Description
403	The user does not have the permission to call this API.
404	1.The private hook does not exist. 2.The private hook version does not exist.
429	Too frequent requests.
500	Internal server error.

2.8.7 Showing metadata of a private hook

Function

ShowPrivateHookMetadata

You can use this API to show the private hook metadata.

- Please refer to the ShowPrivateHookMetadataResponseBody for specific returned response.
- If both hook_name and hook_id are provided, RFS checks whether they match. If hook name does not match the current private hook ID, error code 400 is returned.

URI

GET /v1/private-hooks/{hook_name}/metadata

Table 2-998 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.

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Table 2-999 Query Parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Request Parameters

Table 2-1000 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-1001 Response body parameters

Parameter	Type	Description
hook_name	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive.
hook_id	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.
hook_description	String	Description of a private hook. It can be used by customers to identify their own private hooks. You can update the description of the private hook by calling UpdatePrivateHook API.
default_version	String	Private hook default version. The version number follows the Semantic Version and is customized by the user.
configuration	**configuration** object	Private hook configuration. It can specify the target stack where the private hook takes effect and the behavior of the stack after the private hook verification fails. You can use UpdatePrivateHook API to update private hook configuration.

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Parameter	Type	Description
create_time	String	Time when a private hook is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
update_time	String	Time when a private hook is updated. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

Table 2-1002 configuration

Parameter	Type	Description
target_stacks	String	Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. The default value is NONE. NONE: Specifies that this private hook will not be applied to any stacks. ALL: Specifies that the private hook will be applied to all stacks under the account.
failure_mode	String	Specifies the behavior when the private hook validation fails. Valid values are FAIL or WARN. The default value is WARN. FAIL: Specifies that if this private hook validation fails, the stack will stop deploying, and the stack status will be updated to DEPLOYMENT_FAILED. WARN: Specifies that if this private hook validation fails, only a warning message will be displayed through the stack events, but it will not affect the deployment of the stack.

Status code: 400

Table 2-1003 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

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Status code: 401

Table 2-1004 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-1005 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-1006 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-1007 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 500

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Table 2-1008 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Show metadata of a specified private hook version

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata
  ```

- Show metadata of a specified private hook version and check whether the provided private hook ID matches the current private hook

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata?hook_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2
  ```

Example Responses

Status code: 200

Private hook version metadata showed.

```
{
  "hook_name" : "my-hello-world-hook-name",
  "hook_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "hook_description" : "my first hello world private hook",
  "default_version" : "1.2.3",
  "configuration" : {
    "target_stacks" : "NONE",
    "failure_mode" : "WARN"
  },
  "create_time" : "1970-01-01T00:00:00.000Z",
  "update_time" : "1970-01-01T00:00:00.000Z"
}
```

Status Codes

Status Code	Description
200	Private hook version metadata showed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private hook does not exist.
429	Too frequent requests.
500	Internal server error.

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2.8.8 Updating metadata of a private hook

Function

UpdatePrivateHookMetadata

You can use this API to update the private hook metadata.

- Currently, the description, default version and configuration of the private hook can be updated.
- If you need to create a new version, please call CreatePrivateHookVersion API.
- The update is an incremental update, meaning if a parameter is not provided, the original value will be retained.
- If the request does not contain any parameters that need to be updated, error code 400 will be returned. Note: Even if the original value and the target value are the same, it is considered a valid update.
- After the update, the update time of the private hook will also be updated.
- If both hook_name and hook_id are provided, RFS checks whether they match. If hook name does not match the current private hook ID, error code 400 is returned.

URI

PATCH /v1/private-hooks/{hook_name}/metadata

Table 2-1009 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.

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Request Parameters

Table 2-1010 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Table 2-1011 Request body parameters

Parameter	Mandatory	Type	Description
hook_description	No	String	Description of a private hook. It can be used by customers to identify their own private hooks. You can update the description of the private hook by calling UpdatePrivateHook API.

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Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.
default_version	No	String	Private hook default version. The version number follows the Semantic Version and is customized by the user.
configuration	No	**configuration** object	Private hook configuration. It can specify the target stack where the private hook takes effect and the behavior of the stack after the private hook verification fails. You can use UpdatePrivateHook API to update private hook configuration.

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Table 2-1012 configuration

Parameter	Mandatory	Type	Description
target_stacks	No	String	Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. The default value is NONE. NONE: Specifies that this private hook will not be applied to any stacks. ALL: Specifies that the private hook will be applied to all stacks under the account.
failure_mode	No	String	Specifies the behavior when the private hook validation fails. Valid values are FAIL or WARN. The default value is WARN. FAIL: Specifies that if this private hook validation fails, the stack will stop deploying, and the stack status will be updated to DEPLOYMENT_FAILED. WARN: Specifies that if this private hook validation fails, only a warning message will be displayed through the stack events, but it will not affect the deployment of the stack.

Response Parameters

Status code: 204

Private hook metadata updated successfully. No content returned.

Status code: 400

Table 2-1013 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

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Table 2-1014 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-1015 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-1016 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 409

Table 2-1017 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-1018 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

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Status code: 500

Table 2-1019 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Update the description of a specified private hook

```
PATCH https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata

{
  "hook_description" : "my first private hook"
}
```

- Update the default version of a specified private hook

```
PATCH https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata

{
  "default_version" : "0.0.2"
}
```

- Update the configuration of a specified private hook

```
PATCH https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata

{
  "configuration" : {
    "target_stacks" : "ALL",
    "failure_mode" : "FAIL"
  }
}
```

- Update the description, default version and configuration of a specified private hook

```
PATCH https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata

{
  "hook_description" : "my first private hook",
  "default_version" : "0.0.2",
  "configuration" : {
    "target_stacks" : "ALL",
    "failure_mode" : "FAIL"
  }
}
```

- Updates description of the private hook with the hook_id

```
PATCH https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/metadata

{
  "hook_id" : "77dad9a0-6b11-4bf5-ba62-c7e0029dcb6f",
  "hook_description" : "my first private hook"
}
```

Example Responses

None

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Status Codes

Status Code	Description
204	Private hook metadata updated successfully. No content returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private hook or default private hook version does not exist.
409	1. Request conflict. The default version has been deleted. 2. Request conflict. The private hook has been updated.
429	Too frequent requests.
500	Internal server error.

2.8.9 Showing metadata of a private hook version

Function

ShowPrivateHookVersionMetadata

You can use this API to show the private hook version metadata.

- Please refer to the ShowPrivateHookVersionMetadataResponseBody for specific returned response.
- If both hook_name and hook_id are provided, RFS checks whether they match. If hook name does not match the current private hook ID, error code 400 is returned.

URI

GET /v1/private-hooks/{hook_name}/versions/{hook_version}/metadata

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Table 2-1020 Path Parameters

Parameter	Mandatory	Type	Description
hook_name	Yes	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive. We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.
hook_version	Yes	String	Private hook version. The version number follows the Semantic Version and is customized by the user.

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Table 2-1021 Query Parameters

Parameter	Mandatory	Type	Description
hook_id	No	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.

Request Parameters

Table 2-1022 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	Unique request ID. It is specified by a user and is used to locate a request. UUID is recommended.

Response Parameters

Status code: 200

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Table 2-1023 Response body parameters

Parameter	Type	Description
hook_name	String	Private hook name. The name is unique within its domain (domain_id) and region. It can contain Chinese characters, uppercase and lowercase letters, digits, underscores (_), and hyphens (-). The first character must be a Chinese or English character. It is case sensitive.
hook_id	String	Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created. Private hook names are unique only at one specific time, so you can create a private hook named helloWorld and another private hook with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the private hook they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each private hook is different and does not change with updates. If the hook_id value is different from the current private hook ID, error code 400 is returned.
hook_version	String	Private hook version. The version number follows the Semantic Version and is customized by the user.
hook_version_description	String	Description of the private hook version. It can be used by users to identify and manage private hook versions. Note: The private hook version is immutable, so the description cannot be updated. If it needs to be updated, please delete private hook version and rebuild it.
create_time	String	Time when a private hook version is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.

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Status code: 400

Table 2-1024 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 401

Table 2-1025 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 403

Table 2-1026 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 404

Table 2-1027 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Status code: 429

Table 2-1028 Response body parameters

Parameter	Type	Description
error_code	String	Response code

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Parameter	Type	Description
error_msg	String	Response message

Status code: 500

Table 2-1029 Response body parameters

Parameter	Type	Description
error_code	String	Response code
error_msg	String	Response message

Example Requests

- Show metadata of a specified private hook version

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1/metadata
  ```

- Show metadata of a specified private hook version and check whether the provided private hook ID matches the current private hook

  ```
  GET https://{endpoint}/v1/private-hooks/my-hello-world-hook-name/versions/0.0.1/metadata?
  hook_id=d3e79f29-1b5c-44b2-8236-d609a59a634e
  ```

Example Responses

Status code: 200

Private hook version metadata showed.

```
{
  "hook_name" : "my-hello-world-hook-name",
  "hook_id" : "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3",
  "hook_version" : "1.2.3",
  "hook_version_description" : "my first hello world private hook version",
  "create_time" : "1970-01-01T00:00:00.000Z"
}
```

Status Codes

Status Code	Description
200	Private hook version metadata showed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private hook or private hook version does not exist.
429	Too frequent requests.

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Status Code	Description
500	Internal server error.

2.9 Resource Formation - Module Management

2.9.1 Create a Private Module

Function

Create a Private Module (CreatePrivateModule)

Create a private empty module. If you specify module_version and module_uri, a private module version will be created along with the private module.

- Modules allow you to bundle reusable code together.
- If a private module with the same name already exists in the current account, an error message will be returned.
- Each version number can be defined by following the semantic versioning format.
- RFS conducts basic validations on modules, including file size, decompression capability, and number of files. However, it does not perform detailed verification, such as syntax checking.

The following example is a HCL-formatted template, which shows how to reference a private module:

```
module "my_hello_word_module" {
  source = "rf://rfs.{region_id}.myhuaweicloud.com/private/{domain_id}/{module_name}?
version=={module_version}"
}
```

The following example is a JSON-formatted template, which shows how to reference a private module using the correct syntax:

```
{
  "module": {
    "my_hello_word_module": {
      "source": "rf://rfs.{region_id}.myhuaweicloud.com/private/{domain_id}/{module_name}?
version=={module_version}"
    }
  }
}
```

The module URLs (value of the source field) in the previous two examples come from the module_source field, which can be obtained by calling the ShowPrivateModuleVersionMetadata API.

URI

POST /v1/private-modules

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Request Parameters

Table 2-1030 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Table 2-1031 Request body parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a letter.
module_version	No	String	Module version number. Each version number can be defined by following the semantic versioning format.
module_description	No	String	Description of a private module. It serves as an identifier for you to recognize managed private modules. To update the description of a private module, call the UpdatePrivateModuleMetadata API.

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Parameter	Mandatory	Type	Description
module_uri	No	String	Address for accessing the module package in OBS. Modules allow you to bundle reusable code together. The OBS address can be accessed across regions of the same type. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants. The module package must be ZIP-formatted. To ensure the validity of the module package, the module package: ● Cannot contain files whose names end with ".tfvars" . ● Cannot exceed 1 MB in size before and after decompression. ● Cannot contain more than 100 files. ● Cannot contain file paths starting with a forward slash (/). ● Disallow spaces (" "), single periods ("."), or double periods ("..") between separators in file paths. ● Allow each file path to be up to 2048 characters long. ● Allow each file name to be up to 255 characters long. ● Must include at least one template file (whose name ends with ".tf" or ".tf.json"). **Notes**: ● Modules do not support encryption for sensitive data. The module package associated with the module_uri is used, logged, displayed, and stored in plaintext by RFS.

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Parameter	Mandatory	Type	Description
version_description	No	String	Description of a module version. It serves as an identifier for you to recognize and manage module versions. Note: A module version is immutable and cannot have its description updated. You can only delete the current version and create another one with the desired description.

Response Parameters

Status code: 201

Table 2-1032 Response body parameters

Parameter	Type	Description
module_id	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

Status code: 400

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Table 2-1033 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1034 Detail

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

Status code: 401

Table 2-1035 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1036 Detail

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

Status code: 403

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Table 2-1037 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1038 Detail

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

Status code: 409

Table 2-1039 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1040 Detail

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

Status code: 429

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Table 2-1041 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1042 Detail

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

Status code: 500

Table 2-1043 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1044 Detail

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

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Example Requests

- Create an empty private module

```
POST https://{endpoint}/v1/private-modules

{
  "module_name" : "test-limit_vpc_resource-module"
}
```

- Create a private module with version

```
POST https://{endpoint}/v1/private-modules

{
  "module_name" : "test-limit_vpc_resource-module",
  "module_version" : "1.0.0",
  "module_uri" : "https://integration-test.obs.{region}.huawei.com/
mock_zip_template_for_module_service.zip"
}
```

Example Responses

Status code: 201

The private module is created.

```
{
  "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b"
}
```

Status Codes

Status Code	Description
201	The private module is created.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private module has been reached.
409	Creation request conflict. The specified private module already exists.
429	Too frequent requests.
500	Internal server error.

2.9.2 List Private Modules

Function

List Private Modules (ListPrivateModules)

List all your private modules of the current account (domain) at the current region.

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- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_key values must be the same as that of sort_dir values. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.
- If there is no private module, an empty list will be returned.
- To query all versions of a module, call ListModuleVersions.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListPrivateModules returns only the summary information. (You can obtain details about the summary information by referring to ListPrivateModulesResponseBody.) For detailed module metadata, call ShowPrivateModuleMetadata.

URI

GET /v1/private-modules

Table 2-1045 Query Parameters

Parameter	Mandatory	Type	Description
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

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Request Parameters

Table 2-1046 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-1047 Response body parameters

Parameter	Type	Description
modules	Array of **PrivateModuleSummary** objects	A list of private modules. By default, these modules are sorted in ascending order of the creation time.
page_info	**PageInfo** object	Pagination information

Table 2-1048 PrivateModuleSummary

Parameter	Type	Description
module_name	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a letter.

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Parameter	Type	Description
module_id	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.
module_description	String	Description of a private module. It serves as an identifier for you to recognize managed private modules. To update the description of a private module, call the UpdatePrivateModuleMetadata API.
create_time	String	Creation time of a private module. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.
update_time	String	Update time of a private module. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.

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Table 2-1049 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-1050 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1051 Detail

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

Status code: 401

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Table 2-1052 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1053 Detail

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

Status code: 403

Table 2-1054 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1055 Detail

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

Status code: 429

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Table 2-1056 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1057 Detail

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

Status code: 500

Table 2-1058 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1059 Detail

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

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Example Requests

- Retrieve and sort all private modules of the user in the current region based on their creation time, with the most recent ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules
  ```

- Retrieve and sort all private modules of the user in the current region based on their creation time, with the most recent ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules?sort_key=create_time&sort_dir=desc
  ```

- Retrieve and sort all private modules of the user in the current region based on their creation time, with the earliest ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules?sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

Private modules are listed.


```
{
  "modules" : [ {
    "module_name" : "test-limit_vpc_resource-module20241211160229906936",
    "module_id" : "f518d58a-dbcc-410e-bb2a-46f2a095fae5",
    "module_description" : "My First Hello World Module Description",
    "create_time" : "2024-12-11T08:03:58.074Z",
    "update_time" : "2024-12-11T08:03:58.074Z"
  }, {
    "module_name" : "test-limit_vpc_resource-module20241211160149712793",
    "module_id" : "d9aa59c0-cf2a-4393-8bc5-682f105a8dc8",
    "module_description" : "My Second Hello World Module Description",
    "create_time" : "2024-12-11T08:03:54.790Z",
    "update_time" : "2024-12-11T08:03:54.790Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCm
ypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Private modules are listed.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
429	Too frequent requests.
500	Internal server error.

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2.9.3 Delete a Private Module

Function

Delete a Private Module (DeletePrivateModule)

Delete a private module and all module versions under the private module.

- If both module_name and module_id are provided, RFS checks whether they match. If they do not match, error code 400 is returned.

** Please use with caution. Deleting a private module will delete the private module and all private module versions under this private module. **

URI

DELETE /v1/private-modules/{module_name}

Table 2-1060 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Table 2-1061 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

Request Parameters

Table 2-1062 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 204

The private module is deleted and no data is returned.

Status code: 400

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Table 2-1063 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1064 Detail

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

Status code: 401

Table 2-1065 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1066 Detail

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

Status code: 403

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Table 2-1067 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1068 Detail

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

Status code: 404

Table 2-1069 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1070 Detail

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

Status code: 429

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Table 2-1071 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1072 Detail

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

Status code: 500

Table 2-1073 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1074 Detail

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

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Example Requests

Delete a private module and all module versions under the private module

```
DELETE /v1/private-modules/{module_name}
```

Example Responses

None

Status Codes

Status Code	Description
204	The private module is deleted and no data is returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The module does not exist.
429	Too frequent requests.
500	Internal server error.

2.9.4 Show Private Module Metadata

Function

Show Private Module Metadata (ShowPrivateModuleMetadata)

You can use this API to obtain the private module metadata.

- Please refer to the ShowPrivateModuleMetadataResponseBody specific returned response. To view all versions of a private module, call ListPrivateModuleVersions.
- If both module_name and module_id are provided, RFS checks whether they match. If module name does not match the current private module ID, error code 400 is returned.

URI

GET /v1/private-modules/{module_name}/metadata

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Table 2-1075 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Table 2-1076 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

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Request Parameters

Table 2-1077 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-1078 Response body parameters

Parameter	Type	Description
module_name	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a letter.
module_id	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

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Parameter	Type	Description
module_description	String	Description of a private module. It serves as an identifier for you to recognize managed private modules. To update the description of a private module, call the UpdatePrivateModuleMetadata API.
create_time	String	Creation time of a private module. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.
update_time	String	Update time of a private module. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.

Status code: 400

Table 2-1079 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1080 Detail

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

Status code: 401

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Table 2-1081 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1082 Detail

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

Status code: 403

Table 2-1083 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1084 Detail

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

Status code: 404

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Table 2-1085 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1086 Detail

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

Status code: 429

Table 2-1087 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1088 Detail

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

Status code: 500

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Table 2-1089 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1090 Detail

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

Example Requests

Show the metadata of a private module of the user in the current region

```
GET https://{endpoint}/v1/private-modules/{module_name}/metadata
```

Example Responses

Status code: 200

Private module metadata obtained.

```
{
  "module_name" : "test-limit_vpc_resource-module20241211160209172862",
  "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b",
  "module_description" : "My First Hello World Module Description",
  "create_time" : "2024-12-11T08:03:37.345Z",
  "update_time" : "2024-12-11T08:03:37.345Z"
}
```

Status Codes

Status Code	Description
200	Private module metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.

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Status Code	Description
404	The private module does not exist.
429	Too frequent requests.
500	Internal server error.

2.9.5 Update Private Module Metadata

Function

Update Private Module Metadata (UpdatePrivateModuleMetadata)

Update the metadata of the current private module.

- Currently, only the description of private modules can be updated.
- If you need to create a new version, please call CreatePrivateModuleVersion API.
- TThe update is an incremental update, meaning if a parameter is not provided, the original value will be retained.
- If the request does not contain any parameters that need to be updated, error code 400 will be returned. Note: Even if the original value and the target value are the same, it is considered a valid update.
- After the update, the update time of the private module will also be updated.
- If both module_name and module_id are provided, RFS checks whether they match. If they do not match, error code 400 is returned.

URI

PATCH /v1/private-modules/{module_name}/metadata

Table 2-1091 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

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Request Parameters

Table 2-1092 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Table 2-1093 Request body parameters

Parameter	Mandatory	Type	Description
module_description	No	String	Description of a private module. It serves as an identifier for you to recognize managed private modules. To update the description of a private module, call the UpdatePrivateModuleMetadata API.

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Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

Response Parameters

Status code: 204

Private module metadata is updated and no data is returned.

Status code: 400

Table 2-1094 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1095 Detail

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

Status code: 401

Table 2-1096 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1097 Detail

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

Status code: 403

Table 2-1098 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1099 Detail

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

Status code: 404

Table 2-1100 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1101 Detail

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

Status code: 429

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Table 2-1102 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1103 Detail

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

Status code: 500

Table 2-1104 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1105 Detail

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

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Example Requests

Update the metadata of a private module of the user in the current region

```
PATCH https://{endpoint}/v1/private-modules/{module_name}/metadata

{
  "module_description" : "My First Hello World Module Description",
  "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b"
}
```

Example Responses

None

Status Codes

Status Code	Description
204	Private module metadata is updated and no data is returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The module does not exist.
429	Too frequent requests.
500	Internal server error.

2.9.6 Create a Private Module Version

Function

Create a Private Module Version (CreatePrivateModuleVersion)

Create a private module version.

- Each module version number can be defined by following the semantic versioning format.
- If both module_name and module_id are provided, RFS checks whether they match. If module name does not match the current private module ID, error code 400 is returned.
- RFS performs validations on private modules, including file size, decompression capability, and number of files. However, it does not perform detailed verification, such as syntax checking.

URI

POST /v1/private-modules/{module_name}/versions

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Table 2-1106 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Request Parameters

Table 2-1107 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

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Table 2-1108 Request body parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.
module_version	Yes	String	Module version number. Each version number can be defined by following the semantic versioning format.
version_description	No	String	Description of a module version. It serves as an identifier for you to recognize and manage module versions. Note: A module version is immutable and cannot have its description updated. You can only delete the current version and create another one with the desired description.

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Parameter	Mandatory	Type	Description
module_uri	Yes	String	Address for accessing the module package in OBS. Modules allow you to bundle reusable code together. The OBS address can be accessed across regions of the same type. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants. The module package must be ZIP-formatted. To ensure the validity of the module package, the module package: ● Cannot contain files whose names end with ".tfvars" . ● Cannot exceed 1 MB in size before and after decompression. ● Cannot contain more than 100 files. ● Cannot contain file paths starting with a forward slash (/). ● Disallow spaces (" "), single periods ("."), or double periods ("..") between separators in file paths. ● Allow each file path to be up to 2048 characters long. ● Allow each file name to be up to 255 characters long. ● Must include at least one template file (whose name ends with ".tf" or ".tf.json"). **Notes**: ● Modules do not support encryption for sensitive data. The module package associated with the module_uri is used, logged, displayed, and stored in plaintext by RFS.

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Response Parameters

Status code: 201

The private module version created successfully. No content returned.

Status code: 400

Table 2-1109 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1110 Detail

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

Status code: 401

Table 2-1111 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1112 Detail

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

Status code: 403

Table 2-1113 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1114 Detail

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

Status code: 404

Table 2-1115 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1116 Detail

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

Status code: 409

Table 2-1117 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1118 Detail

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

Status code: 429

Table 2-1119 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1120 Detail

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

Status code: 500

Table 2-1121 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1122 Detail

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

Example Requests

Create a private module version of the user in the current region

```
POST https://{endpoint}/v1/private-modules/{module_name}/versions

{
  "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b",
  "module_version" : "1.0.1",
  "module_uri" : "https://integration-test.obs.{region}.huawei.com/
mock_zip_template_for_module_service.zip"
}
```

Example Responses

None

Status Codes

Status Code	Description
201	The private module version created successfully. No content returned.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of private module versions has been reached.
404	The private module does not exist.
409	Creation request conflict. The specified private module version already exists.
429	Too frequent requests.
500	Internal server error.

2.9.7 List Private Module Versions

Function

List Private Module Versions (ListPrivateModuleVersions)

List all versions of the selected private module.

- You can use sort_key and sort_dir as keywords to sort the returned results by creation time (create_time). The number of sort_keys must be the same as that of sort_dirs. Otherwise, error code 400 is returned. If sort_key and sort_dir are not assigned, results are sorted by creation time in descending order by default.
- If both module_name and module_id exist, RFS checks whether they match. If they do not match, error code 400 is returned.
- If the module does not exist, 404 is returned.
- Support pagination. If there is next_marker in the response, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.

ListPrivateModuleVersions returns only the summary information. (You can obtain details about the summary information by referring to ListPrivateModuleVersionsResponseBody.) For detailed module version metadata, call ShowPrivateModuleVersionMetadata.

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URI

GET /v1/private-modules/{module_name}/versions

Table 2-1123 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.

Table 2-1124 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

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Parameter	Mandatory	Type	Description
sort_key	No	Array of strings	Sorting field. Only create_time is supported.
sort_dir	No	Array of strings	Specify an ascending or descending order. • *asc*: ascending order • *desc*: descending order
marker	No	String	Pagination marker. When a single page cannot return all results, the previous request will return a next_marker to indicate there are more pages. Users can place the value of next_marker here to query information from the next page. This marker can only be used for requests with the same parameters as the previous request. If not specified, the query will start from the first page by default.
limit	No	Integer	The maximum number of results to return per page

Request Parameters

Table 2-1125 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-1126 Response body parameters

Parameter	Type	Description
versions	Array of **PrivateModuleVersionSummary** objects	A list of private module versions. By default, these module versions are sorted in ascending order of the creation time.
page_info	**PageInfo** object	Pagination information

Table 2-1127 PrivateModuleVersionSummary

Parameter	Type	Description
module_name	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a letter.
module_id	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.
module_version	String	Module version number. Each version number can be defined by following the semantic versioning format.

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Parameter	Type	Description
version_description	String	Description of a module version. It serves as an identifier for you to recognize and manage module versions. Note: A module version is immutable and cannot have its description updated. You can only delete the current version and create another one with the desired description.
create_time	String	Creation time of a private module version. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.

Table 2-1128 PageInfo

Parameter	Type	Description
next_marker	String	Forward pagination identifier. Marker for the next set of results. If present, more output is available than is included in the current response. Use this value in the marker request parameter in a subsequent call to get the next part of the outputs. You should repeat this until the next_marker response is set to null.
previous_marker	String	Backward pagination identifier.
current_count	Integer	The number of items returned on current page.

Status code: 400

Table 2-1129 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

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Parameter	Type	Description
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1130 Detail

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

Status code: 401

Table 2-1131 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1132 Detail

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

Status code: 403

Table 2-1133 Response body parameters

Parameter	Type	Description
error_code	String	Response code.

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Parameter	Type	Description
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1134 Detail

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

Status code: 404

Table 2-1135 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1136 Detail

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

Status code: 429

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Table 2-1137 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1138 Detail

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

Status code: 500

Table 2-1139 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1140 Detail

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

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Example Requests

- Retrieve and sort all versions of the private module named my_module based on their creation time, with the most recent ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules/my_module/versions
  ```

- Retrieve and sort all versions of the private module named my_module based on their creation time, with the most recent ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules/my_module/versions?sort_key=create_time&sort_dir=desc
  ```

- Retrieve and sort all versions of the private module named my_module based on their creation time, with the earliest ones appearing first.

  ```
  GET https://{endpoint}/v1/private-modules/my_module/versions?sort_key=create_time&sort_dir=asc
  ```

Example Responses

Status code: 200

Private module versions metadata obtained.


```
{
  "versions" : [ {
    "module_name" : "test-limit_vpc_resource-module20241211160209172862",
    "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b",
    "module_version" : "1.0.1",
    "create_time" : "2024-12-11T08:03:57.747Z"
  }, {
    "module_name" : "test-limit_vpc_resource-module20241211160209172862",
    "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b",
    "module_version" : "1.0.0",
    "version_description" : "My First Hello World Module Version Description",
    "create_time" : "2024-12-11T08:03:37.417Z"
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" :
"zxc1oHc08HcCmypYGTsOoRcvoHUvHRUAW5NOSnc1oHc08HcCPZrwP5NOeTlRiukJgtGxeujJeuGwGIihaIUCmypYGTsOtqvKPr2xmH8fPqpGWyQ0axGwGZp9aqvx8pQ7m5FvGTsJiKk7gtNFiuaxetdRCks="
  }
}
```


Status Codes

Status Code	Description
200	Private module versions metadata obtained.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The private module does not exist.
429	Too frequent requests.
500	Internal server error.

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2.9.8 Show Private Module Version Content

Function

Show the Content of a Private Module Version (ShowPrivateModuleVersionContent)

Show the content of a specified private module version.

If the module version content is successfully obtained, a temporary redirection mode is used to return the module download link (OBS presigned address, valid for 5 minutes). Most clients will automatically redirect you to the link for downloading the module.

- If automatic redirection is not performed, you can obtain the module download link by referring to the HTTP redirection rule and manually download the module.

URI

GET /v1/private-modules/{module_name}/versions/{module_version}

Table 2-1141 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
module_version	Yes	String	Module version number. Each version number can be defined by following the semantic versioning format.

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Table 2-1142 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

Request Parameters

Table 2-1143 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 307

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Table 2-1144 Response header parameters

Parameter	Type	Description
Location	String	HTTP redirect header. The client can use this header to redirect to a module download link (OBS presigned address, valid for 5 minutes).

Status code: 400

Table 2-1145 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1146 Detail

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

Status code: 401

Table 2-1147 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1148 Detail

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

Status code: 403

Table 2-1149 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1150 Detail

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

Status code: 404

Table 2-1151 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1152 Detail

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

Status code: 429

Table 2-1153 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1154 Detail

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

Status code: 500

Table 2-1155 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

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Table 2-1156 Detail

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

Example Requests

Show the content of a specified private module version

```
GET /v1/private-modules/{module_name}/versions/{module_version}
```

Example Responses

None

Status Codes

Status Code	Description
307	The content is obtained. Temporary redirection is successful.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The module or module version does not exist.
429	Too frequent requests.
500	Internal server error.

2.9.9 Delete a Private Module Version

Function

Delete a Private Module Version (DeletePrivateModuleVersion)

Delete a private module version.

- If both module_name and module_id are provided, RFS checks whether they match. If module name does not match the current private module ID, error code 400 is returned.

** Please use with caution. **

URI

DELETE /v1/private-modules/{module_name}/versions/{module_version}

Table 2-1157 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
module_version	Yes	String	Module version number. Each version number can be defined by following the semantic versioning format.

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Table 2-1158 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

Request Parameters

Table 2-1159 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 204

Private module version deleted successfully. No content returned.

Status code: 400

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Table 2-1160 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1161 Detail

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

Status code: 401

Table 2-1162 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1163 Detail

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

Status code: 403

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Table 2-1164 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1165 Detail

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

Status code: 404

Table 2-1166 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1167 Detail

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

Status code: 429

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Table 2-1168 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1169 Detail

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

Status code: 500

Table 2-1170 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1171 Detail

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

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Example Requests

Delete a private module version

```
DELETE /v1/private-modules/{module_name}/versions/{module_version}
```

Example Responses

None

Status Codes

Status Code	Description
204	Private module version deleted successfully. No content returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The module or module version does not exist.
429	Too frequent requests.
500	Internal server error.

2.9.10 Show Private Module Version Metadata

Function

Show Private Module Version Metadata (ShowPrivateModuleVersionMetadata)

You can use this API to show the private module version metadata.

- Please refer to the ShowPrivateModuleVersionMetadataResponseBody specific returned response .
- If both module_name and module_id are provided, RFS checks whether they match. If module name does not match the current private module ID, error code 400 is returned.

URI

GET /v1/private-modules/{module_name}/versions/{module_version}/metadata

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Table 2-1172 Path Parameters

Parameter	Mandatory	Type	Description
module_name	Yes	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. The name is case-sensitive and must start with a letter.
module_version	Yes	String	Module version number. Each version number can be defined by following the semantic versioning format.

Table 2-1173 Query Parameters

Parameter	Mandatory	Type	Description
module_id	No	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.

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Request Parameters

Table 2-1174 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	A unique request ID is specified by a user to locate a request. UUID is recommended.

Response Parameters

Status code: 200

Table 2-1175 Response body parameters

Parameter	Type	Description
module_name	String	Name of a private module. The name is unique within its domain (domain_id) and region. Only letters, digits, underscores (_), and hyphens (-) are allowed. It is case-sensitive and must start with a letter.
module_id	String	Unique ID of a private module. It is a UUID generated by RFS when a module is created. Private module names are unique only at a specific time, so you can create a private module named HelloWorld and another private module with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the private module they created, not the one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each private module has a unique ID that does not change with updates. If the module_id differs from the current module ID, error code 400 is returned.
module_version	String	Module version number. Each version number can be defined by following the semantic versioning format.

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Parameter	Type	Description
version_description	String	Description of a module version. It serves as an identifier for you to recognize and manage module versions. Note: A module version is immutable and cannot have its description updated. You can only delete the current version and create another one with the desired description.
create_time	String	Creation time of a private module version. It is represented in UTC format (YYYY-MM-DDTHH:mm:ss.SSSZ), such as 1970-01-01T00:00:00.000Z.

module_source	String	To make a module available in a template, define its source as follows:
		module "my_hello_word_module" {
		source = {module_source}
		}
		{module_source} indicates the source argument.

Status code: 400

Table 2-1176 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1177 Detail

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

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Status code: 401

Table 2-1178 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1179 Detail

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

Status code: 403

Table 2-1180 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1181 Detail

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

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Status code: 404

Table 2-1182 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1183 Detail

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

Status code: 429

Table 2-1184 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1185 Detail

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

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Status code: 500

Table 2-1186 Response body parameters

Parameter	Type	Description
error_code	String	Response code.
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.
details	Array of **Detail** objects	Detailed error information. It is returned by the service when the "permission denied" error occurs.

Table 2-1187 Detail

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

Example Requests

Retrieve the metadata of a version of the private module

```
GET https://{endpoint}/v1/private-modules/{module_name}/versions/{module_version}/metadata
```

Example Responses

Status code: 200

Private module metadata is obtained.

```
{
  "module_name" : "test-limit_vpc_resource-module20241211160209172862",
  "module_id" : "fd0e12bc-a1a4-4cac-8cbe-b023c389736b",
  "module_version" : "1.0.0",
  "version_description" : "My First Hello World Module Version Description",
  "create_time" : "2024-12-11T08:03:37.417Z",
  "module_source" : "rf://rfs.{region}.myhuaweicloud.com/private/1e05315aa3ec47b18db03f3771bbb4f3/
test-limit_vpc_resource-module20241211160209172862?version=1.0.0"
}
```

Status Codes

Status Code	Description
200	Private module metadata is obtained.

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Status Code	Description
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The module or module version does not exist.
429	Too frequent requests.
500	Internal server error.

2.10 Permissions and Supported Actions

This chapter describes fine-grained permissions management for your RFS resources. If your account does not need individual IAM users, you can skip the operations in this chapter.

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

You can grant users permissions by using **roles** and **policies**. Roles are a type of service-based, coarse-grained authorization mechanism provided by IAM to define permissions that match user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

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

An account has all the permissions required to call all APIs, but IAM users must be assigned the permissions to call the required APIs. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions can call the API successfully. For example, if an IAM user wants to query ECSs using an API, the user must have been granted permissions that allow the **ecs:servers:list** action.

Supported Actions in IAM

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

- Permission: a statement in a policy that allows or denies certain operations.
- APIs: APIs that can be called in a custom policy.
- Actions: specific operations that are allowed or denied in a custom policy.

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- Dependencies: actions which a specific action depends on. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- IAM projects/Enterprise projects: the authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions supporting both IAM and enterprise projects can be assigned to user groups and take effect in both IAM and Enterprise Management. Policies that only contain actions supporting IAM projects can be assigned to user groups and only take effect for IAM. Such policies will not take effect if they are assigned to user groups in enterprise management. 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.

RFS supports the following actions in custom policies.

Table 2-1188 Private template

Permission	API	Action	IAM Project	Enterprise Project
Create private templates	POST /v1/{project_id}/templates	rf:privateTemplate:create	√	x
Create a private template version	POST /v1/{project_id}/templates/{template_name}/versions	rf:privateTemplate:createVersion	√	x
Delete a private template	DELETE /v1/{project_id}/templates/{template_name}	rf:privateTemplate:delete	√	x
Delete a private template version	DELETE /v1/{project_id}/templates/{template_name}/versions/{version_id}	rf:privateTemplate:deleteVersion	√	x
List all private templates in a project	GET /v1/{project_id}/templates	rf:privateTemplate:list	√	x
Display all versions of a private template	GET /v1/{project_id}/templates/{template_name}/versions	rf:privateTemplate:listVersions	√	x

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Permission	API	Action	IAM Project	Enterprise Project
Display private template information	GET /v1/{project_id}/templates/{template_name}/metadata	rf:privateTemplate:showMetadata	√	x
Obtain the content of a private template version	GET /v1/{project_id}/templates/{template_name}/versions/{version_id}	rf:privateTemplate:showVersionContent	√	x
Obtain the metadata of a private template version	GET /v1/{project_id}/templates/{template_name}/versions/{version_id}/metadata	rf:privateTemplate:showVersionMetadata	√	x
Update the metadata of a private template	PATCH /v1/{project_id}/templates/{template_name}/metadata	rf:privateTemplate:updateMetadata	√	x

Table 2-1189 Stack

Permission	API	Action	IAM Project	Enterprise Project
Apply an execution plan	POST /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}	rf:stack:applyExecutionPlan	√	x
Continue to deploy a stack	POST /v1/{project_id}/stacks/{stack_name}/continuations	rf:stack:continueDeployStack	√	x
Continue to roll back a stack	POST /v1/{project_id}/stacks/{stack_name}/rollbacks	rf:stack:continueRollbackStack	√	x
Create an execution plan	POST /v1/{project_id}/stacks/{stack_name}/execution-plans	rf:stack:createExecutionPlan	√	x
Create a stack	POST /v1/{project_id}/stacks	rf:stack:createStack	√	x

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Permission	API	Action	IAM Project	Enterprise Project
Delete an execution plan	DELETE /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}	rf:stack:deleteExecutionPlan	√	x
Delete a stack	DELETE /v1/{project_id}/stacks/{stack_name}	rf:stack:deleteStack	√	x
Deploy a stack	PATCH /v1/{project_id}/stacks/{stack_name}/deployment	rf:stack:deployStack	√	x
Estimate the price of an execution plan	GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}/prices	rf:stack:estimateExecutionPlanPrice	√	x
Obtain execution plans	GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}	rf:stack:getExecutionPlan	√	x
Obtain execution plan metadata	GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}/metadata	rf:stack:getExecutionPlanMetadata	√	x
Obtain an execution plan template	GET /v1/{project_id}/stacks/{stack_name}/execution-plans/{execution_plan_name}/templates	rf:stack:getExecutionPlanTemplate	√	x
Obtain stack metadata	GET /v1/{project_id}/stacks/{stack_name}/metadata	rf:stack:getStackMetadata	√	x
Obtain a stack template	GET /v1/{project_id}/stacks/{stack_name}/templates	rf:stack:getStackTemplate	√	x
Import stack resources	PATCH /v1/{project_id}/stacks/{stack_name}/resources	rf:stack:importResources	√	x
Query execution plans	GET /v1/{project_id}/stacks/{stack_name}/execution-plans	rf:stack:listExecutionPlans	√	x

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Permission	API	Action	IAM Project	Enterprise Project
Query deployment events of a stack	GET /v1/{project_id}/stacks/{stack_name}/events	rf:stack:listStackEvents	√	x
Query stack outputs	GET /v1/{project_id}/stacks/{stack_name}/outputs	rf:stack:listStackOutputs	√	x
Query stack resources	GET /v1/{project_id}/stacks/{stack_name}/resources	rf:stack:listStackResources	√	x
Query stacks	GET /v1/{project_id}/stacks	rf:stack:listStacks	√	x
Update a stack	PATCH /v1/{project_id}/stacks/{stack_name}	rf:stack:updateStack	√	x
Modify stack deletion protection	PUT /v1/{project_id}/stacks/{stack_name}/deletion-protections	rf:stack:updateStackDeletionProtection	√	x

Table 2-1190 Stack set

Permission	API	Action	IAM Project	Enterprise Project
Create a stack set	POST /v1/stack-sets	rf:stackSet:create	√	x
Create stack instances	POST /v1/stack-sets/{stack_set_name}/stack-instances	rf:stackSet:createStackInstances	√	x
Delete a stack set	DELETE /v1/stack-sets/{stack_set_name}	rf:stackSet:delete	√	x
Delete stack instances	DELETE /v1/stack-sets/{stack_set_name}/stack-instances	rf:stackSet:deleteStackInstances	√	x
Deploy a stack set	POST /v1/stack-sets/{stack_set_name}/deployments	rf:stackSet:deploy	√	x
Query stack sets	GET /v1/stack-sets	rf:stackSet:list	√	x

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Permission	API	Action	IAM Project	Enterprise Project
Query stack set operations	GET /v1/stack-sets/{stack_set_name}/operations	rf:stackSet:listOperations	√	x
Query stack instances	GET /v1/stack-sets/{stack_set_name}/stack-instances	rf:stackSet:listStackInstances	√	x
Obtain metadata of a stack set	GET /v1/stack-sets/{stack_set_name}/metadata	rf:stackSet:showMetadata	√	x
Obtain metadata of a stack set operation	GET /v1/stack-sets/{stack_set_name}/operations/{stack_set_operation_id}/metadata	rf:stackSet:showOperationMetadata	√	x
Obtain a stack instance	GET /v1/stack-sets/{stack_set_name}/stack-instances/{stack_instance_addr}	rf:stackSet:showStackInstance	√	x
Obtain a stack set template	GET /v1/stack-sets/{stack_set_name}/templates	rf:stackSet:showTemplate	√	x
Update a stack set	PATCH /v1/stack-sets/{stack_set_name}	rf:stackSet:update	√	x
Update stack instances	PATCH /v1/stack-sets/{stack_set_name}/stack-instances	rf:stackSet:updateStackInstances	√	x

Table 2-1191 Template

Permission	API	Action	IAM Project	Enterprise Project
Parse template parameters	POST /v1/{project_id}/template-analyses/variables	rf:template:parseTemplateVariables	√	x

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3 Appendix

Status Code
Error Codes
Obtaining a Project ID
Obtaining an Account ID

3.1 Status Code

Table 3-1 describes status codes.

Table 3-1 Status codes

Status Code	Code	Description
100	Continue	The client should continue with its request. This interim response is used to inform the client that some requests have been received and have not been rejected by the server.
101	Switching Protocols	The protocol should be switched. The protocol can only be switched to a newer protocol. For example, the current HTTP protocol is switched to a later version.
201	Created	The request for creating resources has been fulfilled.
202	Accepted	The request has been accepted, but the processing has not been completed.
203	Non-Authoritative Information	Non-authoritative information. The request is successful.

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Status Code	Code	Description
204	NoContent	The request has been fulfilled, but the HTTP response does not contain a response body. The status code is returned in response to an HTTP OPTIONS request.
205	Reset Content	The server has fulfilled the request, but the requester is required to reset the content.
206	Partial Content	The server has successfully processed the partial GET request.
300	Multiple Choices	There are multiple options for the location of the requested resource. The response contains a list of resource characteristics and addresses from which a user terminal (such as a browser) can choose the most appropriate one.
301	Moved Permanently	The requested resource has been assigned with a new permanent URI. This new URI is contained in the response.
302	Found	The requested resource resides temporarily under a different URI.
303	See Other	The response to the request can be found under a different URI, and should be retrieved using a GET or POST method.
304	Not Modified	The requested resource has not been modified. When the server returns this status code, it does not return any resources.
305	Use Proxy	The requested resource must be accessed through a proxy.
306	Unused	This HTTP status code is no longer used.
400	BadRequest	The request is invalid. The client should not repeat the request without modifications.
401	Unauthorized	This status code is returned after the client provides the authentication information, indicating that the authentication information is incorrect or invalid.
402	Payment Required	This status code is reserved for future use.

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Status Code	Code	Description
403	Forbidden	Access denied. The server understands the request, but refuses to fulfill it. The client should not repeat the request without modifications.
404	NotFound	The requested resource cannot be found. The client should not repeat the request without modifications.
405	MethodNotAllowed	The method specified in the request is not supported by the requested resource. The client should not repeat the request without modifications.
406	Not Acceptable	The server cannot fulfill the request based on the content characteristics of the request.
407	Proxy Authentication Required	This status code is similar to 401, but indicates that the client must authenticate itself with the proxy first.
408	Request Time-out	The client does not send a request within the time that the server was prepared to wait. The client may repeat the request without modifications later.
409	Conflict	The request cannot be processed due to a conflict. This status code indicates that the resource that the client attempts to create already exits, or the request fails to be processed because of the update of the conflict request.
410	Gone	The requested resource cannot be found. The status code indicates that the requested resource has been deleted permanently.
411	Length Required	The server refuses to process the request without a defined Content-Length.
412	Precondition Failed	The server does not meet one of the preconditions that the requester puts on the request.
413	Request Entity Too Large	The server refuses to process a request because the request entity is too large. The server may disable the connection to prevent the client from sending requests consecutively. If the server cannot process the request temporarily, the response will contain a Retry-After field.

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Status Code	Code	Description
414	Request-URI Too Large	The Request-URI is too long for the server to process.
415	Unsupported Media Type	The server cannot process the media format in the request.
416	Requested range not satisfiable	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the Expect request-header field.
422	UnprocessableEnti-ty	The request is well-formed but is unable to be processed due to semantic errors.
429	TooManyRequests	The client sends excessive requests to the server within a given time (exceeding the limit on the access frequency of the client), or the server receives excessive requests within a given time (beyond its processing capability). In this case, the client should repeat requests after the time specified in the Retry-After header of the response expires.
500	InternalServerError	The server is able to receive the request but unable to understand the request.
501	Not Implemented	The server does not support the function required to fulfill the request.
502	Bad Gateway	The server acting as a gateway or proxy receives an invalid response from a remote server.
503	ServiceUnavailable	The requested service is invalid. The client should not repeat the request without modifications.
504	ServerTimeout	The request cannot be fulfilled within a given time. This status code is returned to the client only when the **Timeout** parameter is specified in the request.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

3.2 Error Codes

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

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Status Code	Error Code	Message	Description	Solution
400	RF.10011001	Missing required parameter(s).	Some required parameters are missing.	Contact technical support.
400	RF.10011002	Unrecognized parameter(s).	Unrecognized parameters are provided.	Contact technical support.
400	RF.10011003	Both template_uri and template_body are given, you should only give exactly one parameter from template_uri and template_body.	Either **template_body** or **template_uri** must be specified but they both cannot be specified together.	Contact technical support.
400	RF.10011005	The length of parameter is longer than upper limit.	The length of the parameter exceeds the upper limit.	Contact technical support.
400	RF.10011006	The length of parameter is shorter than lower limit.	The length of the parameter is shorter than the minimum length.	Contact technical support.
400	RF.10011008	Parameter contains invalid letter. Should only contains English characters, number or hyphen.	The parameter contains invalid characters. Only letters, digits, and hyphens (-) are allowed.	Contact technical support.

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Status Code	Error Code	Message	Description	Solution
400	RF.10011009	Parameter contains invalid letter. Should only contains lower case English characters, number or hyphen.	The parameter contains invalid characters. Only lowercase letters, digits, and hyphens (-) are allowed.	Contact technical support.
400	RF.10011028	Composite Validation Error.	Compound verification error.	Contact technical support.
400	RF.10011029	Parameter contains invalid letter. Should only contains English characters or number.	The parameter contains invalid characters. Only letters and digits are allowed.	Contact technical support.
400	RF.10011031	Parameter contains invalid letter. Should only contains English characters, number, hyphen or underscore.	The parameter contains invalid characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.	Contact technical support.
400	RF.10011032	Can not find request body.	The request body is not transferred.	Contact technical support.
400	RF.10011036	The value of parameter is not a valid instance of integer.	The parameter value is not of the valid integer type.	Contact technical support.

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Status Code	Error Code	Message	Description	Solution
400	RF.10011039	VarKey contains invalid letter. VarKey should Starts with an English letter and only contains English characters, number, hyphen or underscore.	**var_key** contains invalid characters. It must start with a letter and contains only letters, digits, hyphens (-), and underscores (_).	Contact technical support.
400	RF.10011049	Invalid vars uri.	Invalid parameter link.	Contact technical support.
400	RF.10011050	Invalid vars uri content.	File content from an invalid parameter link.	Contact technical support.
400	RF.10011051	Invalid vars body.	Invalid vars body.	Contact technical support.
400	RF.10011052	Var value is empty.	Empty variable value.	Contact technical support.
400	RF.10011055	Invalid json array.	Invalid JSON array.	Contact technical support.
400	RF.10011056	Both template_uri and template_body are absence, you should give exactly one parameter from template_uri and template_body.	Both **template_uri** and **template_body** are missing. Either of them must be specified but they both cannot be specified together.	Contact technical support.

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Status Code	Error Code	Message	Description	Solution
400	RF.10011057	Project ID should only contains lower case hexadecimal characters.	The project ID must contain only lowercase hexadecimal letters.	Contact technical support.
400	RF.10011065	Found duplicate values in attribute provider_name.	Duplicate values are found in the **provider_name** attribute.	Contact technical support.
400	RF.10011073	Invalid template body.	Invalid template body.	Contact technical support.
400	RF.10011074	Invalid template.	Invalid template.	Contact technical support.
400	RF.10011075	File type is not matched with file content.	The file type does not match the file content.	Contact technical support.
400	RF.10011084	No parameters in the request need to be modified.	No parameters in the request need modification.	Contact technical support.
403	RF.10012538	The total count of stacks has exceeded the maximum limit.	The number of stacks exceeds the upper limit.	Contact technical support.
403	RF.10012540	Too many stacks are being created in parallel, please take a rest and try again later.	Too many stacks are created concurrently. Try again later.	Contact technical support.

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Status Code	Error Code	Message	Description	Solution
403	RF.10012541	Too many execution plans are being created in parallel, please take a rest and try again later.	Too many execution plans are created concurrently. Try again later.	Contact technical support.
403	RF.10012544	Stack cannot be deleted due to invalid stack status.	The stack cannot be deleted due to its invalid status.	Contact technical support.
404	RF.10013001	Stack is not exist.	The stack does not exist.	Contact technical support.
404	RF.10013002	Execution plan is not exist.	The execution plan does not exist.	Contact technical support.
409	RF.10013501	Conflict execution plan name. Execution plan with name already exist.	An execution plan with the same name already exists.	Contact technical support.
409	RF.10013502	Conflict stack name. Stack with name already exist.	A stack with the same name already exists.	Contact technical support.
429	RF.10014001	Too many requests. Please try again in a few minutes.	Too many requests. Try again later.	Contact technical support.
500	RF.10010001	Internal Server Error.	Internal server error.	Contact technical support.

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3.3 Obtaining a Project ID

Scenarios

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

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

Obtain the Project ID by Calling an API

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

You can obtain the project ID by calling the IAM API used to query project information based on the specified criteria.

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

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

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

Obtain a Project ID from the Console

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

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

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

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3.4 Obtaining an Account ID

An account ID (domain ID) is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

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

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