

Resource Formation Service

API Reference

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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).

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](#).

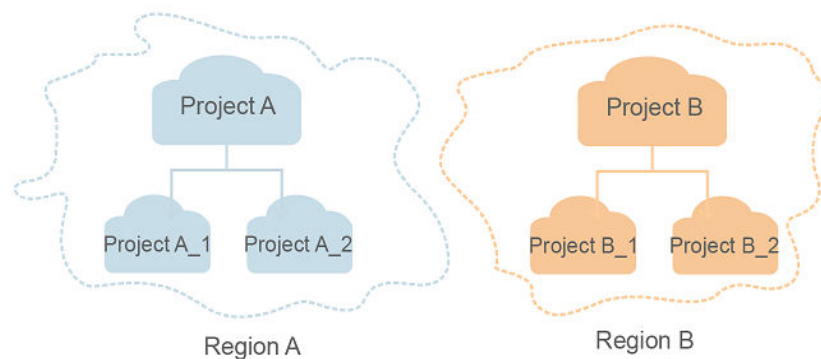
- AZ

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](#).

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → MIIVXQVJKoZIhvcNAQcCoIIYJCCEoCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6ijlwMTktMDItMTNUMC
fj3KJs6YgKnpVNRbW2eZ5eb78SZOkqjACgkqO1wi4JlGzrpd18LGXK5tdfdq4lqHCYb8P4NaY0NYejcAgzJVeFYtLWT1GSO0zxKZmlQHqj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jgglFkNPQuFSOU8+uSsttVwRtNfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUbvpvGw-oPNFYxJECKnoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;
```

(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](#)

[Stacks](#)

[Execution Plans](#)

[Template Analysis](#)

[Template Management](#)

[Stack Sets](#)

[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.

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.

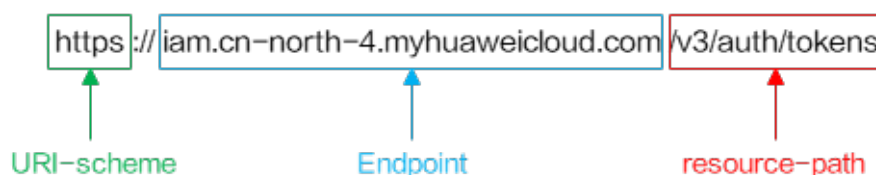
Table 2-1 Parameters in a URI

| 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 <i>Parameter name=Parameter value</i> . 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.

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.

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 <i>Hostname.Port number</i> . 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. | e9993fc787d94b6c886cb aa340f9c0f4 |

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

 **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 *xxxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from [Regions and Endpoints](#).

 **NOTE**

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

```
POST https://iam.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": "xxxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

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.

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → MIIYXQYJKoZIhvcNAQcCoIIYtJCCGEOCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IiwMTktMDItMTNUMD
fj3Kjs6YgKnpVNRbW2eZ5eb78SZOkqjACgkqlqO1wi4JlGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgz/VeFYtLWT1GSO0zxKZmlQHq82HBqHdgIZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXl1jipPEGA270g1FruooL6jgglFkNPQuFSOU8+uSsttVwrRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-oPNFYxJECknoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;
```

(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.

2.2 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.

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

Table 2-5 Query Parameters

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_id | No | String | <p>Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered.</p> |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| filter | No | String | <p>Filter criteria.</p> <ul style="list-style-type: none"> • 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 (_). <p>Semicolons (;) are not allowed in filter criteria. If semicolons are used, the filter criteria will be ignored.</p> <ul style="list-style-type: none"> • 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. |
| field | No | String | <p>Specified attribute name.</p> <ul style="list-style-type: none"> • The attribute name can contain only letters, digits, and underscores (_). • Multiple attribute names are separated by commas (,). |

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. |

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. <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> In a JSON template, the value of resource_type is huaweicloud_vpc. <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |

| Parameter | Type | Description |
|-------------------|--------|--|
| resource_name | String | <p>Resource name. The default value is the logical name of a resource.</p> <p>For example, in the following HCL template, the value of resource_name is my_hello_world_vpc.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> <p>In a JSON template, the value of resource_name is my_hello_world_vpc.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |
| resource_id_key | String | <p>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.</p> |
| resource_id_value | String | <p>Resource ID value. If a resource is not created, resource_id_value is not returned.</p> |

| Parameter | Type | Description |
|--------------|--------|---|
| resource_key | String | <p>Resource key. If count or for_each is used in a template, resource_key will be returned.</p> <p>If count is used in a template, resource_key is a number starting from 0.</p> <p>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.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>In a JSON template, the value of resource_key is 0 and 1.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc", "count": 2 } } } }</pre> <p>If for_each is used in a template, resource_key is a user-defined string.</p> <p>In the following HCL template, the value of resource_key is vpc1 and vpc2.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { for_each = { "vpc1" = "test_vpc" "vpc2" = "test_vpc" } name = each.value }</pre> <p>In the following JSON template, the value of resource_key is vpc1 and vpc2.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "for_each": { "vpc1": "test_vpc", "vpc2": "test_vpc" } "name": "\${each.value}" } } } }</pre> |

| 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 | <p>Event types may include:</p> <ul style="list-style-type: none"> • LOG: records status information, such as the current status and target status. • ERROR: records failure information. • DRIFT: records resource deviation information. <ul style="list-style-type: none"> - 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. |

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

Status code: 400

Table 2-9 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-10 Detail

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

Status code: 401

Table 2-11 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-12 Detail

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

Status code: 403

Table 2-13 Response body parameters

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

Table 2-14 Detail

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

Status code: 404

Table 2-15 Response body parameters

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

Table 2-16 Detail

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

Status code: 429

Table 2-17 Response body parameters

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

Table 2-18 Detail

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

Status code: 500

Table 2-19 Response body parameters

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

Table 2-20 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

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",
    "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"
  }
  ]
}
```

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`.

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 2-21 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 2-22 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-23 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 2-24 Response body parameters

| Parameter | Type | Description |
|-------------|--------|--|
| stack_id | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| 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. |

| Parameter | Type | Description |
|----------------|---------------------------------------|---|
| vars_structure | Array of VarsStructure objects | <p>HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Type | Description |
|----------------------------|---------|--|
| vars_body | String | <p>Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • 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 | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.</i></p> |

| Parameter | Type | Description |
|----------------------|---------|---|
| enable_auto_rollback | Boolean | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated.</i></p> <p><i>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.</i></p> |
| status | String | <p>Status of a stack. *</p> <p>CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. *</p> <p>DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. *</p> <p>DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. *</p> <p>DEPLOYMENT_COMPLETE indicates the deployment completed. *</p> <p>ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. *</p> <p>ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. *</p> <p>ROLLBACK_COMPLETE indicates the rollback completed. *</p> <p>DELETION_IN_PROGRESS indicates the deletion is in progress. *</p> <p>DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.</p> |

| Parameter | Type | Description |
|------------------|---|---|
| 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 |
| 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 2-25 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. |

| 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 2-26 EncryptionStructure

| Parameter | Type | Description |
|-----------|-------------------------------------|--|
| kms | KmsStructure object | <p>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.</p> <p>For more details about KMS encryption and its sample code, refer to KMS Application Scenarios.</p> <p>Note:</p> <ul style="list-style-type: none"> 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://learn.hashicorp.com/tutorials/terraform/sensitive-variables. |

Table 2-27 KmsStructure

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

| Parameter | Type | Description |
|-------------|--------|------------------------------------|
| cipher_text | String | Ciphertext of data encryption key. |

Table 2-28 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. agency_name can only receive common agency names. If agency_name is set to a trust agency name, template deployment will fail. |

Status code: 400

Table 2-29 Response body parameters

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

Table 2-30 Detail

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

Status code: 401

Table 2-31 Response body parameters

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

Table 2-32 Detail

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

Status code: 403

Table 2-33 Response body parameters

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

Table 2-34 Detail

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

Status code: 404

Table 2-35 Response body parameters

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

Table 2-36 Detail

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

Status code: 429

Table 2-37 Response body parameters

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

Table 2-38 Detail

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

Status code: 500

Table 2-39 Response body parameters

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

Table 2-40 Detail

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

Example Requests

- Obtain stack metadata.
GET `https://{endpoint}/v1/ba2b9930c977f71eda3a5e96a8ff1/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/ba2b9930c977f71eda3a5e96a8ff1/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"
}
```

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.
- Pagination is not supported so all stacks will be returned.
- If no stacks are available, a list of empty value will be returned.

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

URI

GET /v1/{project_id}/stacks

Table 2-41 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 2-42 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 2-43 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. |

Table 2-44 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. |

| Parameter | Type | Description |
|-----------|--------|---|
| stack_id | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| status | String | <p>Status of a stack. *</p> <p>CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. *</p> <p>DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. *</p> <p>DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. *</p> <p>DEPLOYMENT_COMPLETE indicates the deployment completed. *</p> <p>ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. *</p> <p>ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. *</p> <p>ROLLBACK_COMPLETE indicates the rollback completed. *</p> <p>DELETION_IN_PROGRESS indicates the deletion is in progress. *</p> <p>DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.</p> |

| Parameter | Type | Description |
|----------------|--------|---|
| 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. |

Status code: 400

Table 2-45 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-46 Detail

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

Status code: 401

Table 2-47 Response body parameters

| Parameter | Type | Description |
|------------|--------|----------------|
| error_code | String | Response code. |

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

Table 2-48 Detail

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

Status code: 403

Table 2-49 Response body parameters

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

Table 2-50 Detail

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

Status code: 429

Table 2-51 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-52 Detail

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

Status code: 500

Table 2-53 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-54 Detail

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

Example Requests

List stacks.

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"
  } ]
}
```

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.
- 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 2-55 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 2-56 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 2-57 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. |
| 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 |

| Parameter | Mandatory | Type | Description |
|----------------------------|-----------|---------|---|
| description | No | String | Description of a stack. It can be used by customers to identify their own stacks. |
| enable_deletion_protection | No | Boolean | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.</i></p> |
| enable_auto_rollback | No | Boolean | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated.</i></p> <p><i>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.</i></p> |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| template_body | No | String | <p>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.</p> <p>Either template_body or template_uri must be specified but they both cannot be specified together.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|---|
| template_uri | No | String | <p>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.</p> <p>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.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|------------------------|-----------|--------|---|
| | | | <ul style="list-style-type: none"> If the template file corresponding to <code>template_uri</code> 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. |
| <code>vars_body</code> | No | String | <p>Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> The <code>vars_body</code> uses the <code>tfvars</code> format of HCL. You can submit the content in the <code>.tfvars</code> file to the <code>vars_body</code>. RFS supports <code>vars_structure</code>, <code>vars_body</code>, and <code>vars_uri</code>. If they declare the same variable, error code 400 will be reported. If <code>vars_body</code> is too large, you can use <code>vars_uri</code>. If the content in <code>vars</code> is simple strings, you can use <code>var_structure</code>. <code>vars_body</code> 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 <code>vars_structure</code> and set the encryption field for transmission. |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------------------------------------|--|
| vars_structure | No | Array of VarsStructure objects | <p>HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • vars_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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| vars_uri | No | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> • 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 2-58 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. |

| 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. agency_name can only receive common agency names. If agency_name is set to a trust agency name, template deployment will fail. |

Table 2-59 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. |

Table 2-60 EncryptionStructure

| Parameter | Mandatory | Type | Description |
|-----------|-----------|-------------------------------------|---|
| kms | Yes | KmsStructure object | <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> 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://learn.hashicorp.com/tutorials/terraform/sensitive-variables. |

Table 2-61 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: 201

Table 2-62 Response body parameters

| Parameter | Type | Description |
|---------------|--------|--|
| stack_id | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_id | String | <p>Deployment ID</p> <p>Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status.</p> <p>Note:</p> <ul style="list-style-type: none"> • 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 2-63 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-64 Detail

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

Status code: 401

Table 2-65 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-66 Detail

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

Status code: 403

Table 2-67 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-68 Detail

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

Status code: 409

Table 2-69 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-70 Detail

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

Status code: 429

Table 2-71 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-72 Detail

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

Status code: 500

Table 2-73 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-74 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.

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

| Status Code | Description |
|-------------|------------------------|
| 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.

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 2-75 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 2-76 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|-------------------------------|-----------|------------------|--|
| 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 (-). |

Request Parameters

Table 2-77 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 2-78 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 2-79 Response body parameters

| Parameter | Type | Description |
|------------|--------|----------------|
| error_code | String | Response code. |

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

Table 2-80 Detail

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

Status code: 401

Table 2-81 Response body parameters

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

Table 2-82 Detail

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

Status code: 403

Table 2-83 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-84 Detail

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

Status code: 404

Table 2-85 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-86 Detail

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

Status code: 429

Table 2-87 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-88 Detail

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

Status code: 500**Table 2-89** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-90 Detail

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

Example Requests

- Obtain a stack template.

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/stacks/my_hello_world_stack/
templates
```

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

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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

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

URI

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

Table 2-91 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 2-92 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-93 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 2-94 Response body parameters

| Parameter | Type | Description |
|-----------------|--|---------------------------------------|
| stack_resources | Array of StackResource objects | List of resources managed by a stack. |

Table 2-95 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 | <p>Logical name of the resource, defined in a template.</p> <p>Logical variables are only used as identifiers of the resource in the template.</p> <p>For example, in the following HCL template, the value of <code>logical_resource_name</code> is <code>my_hello_world_vpc</code>.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> <p>In a JSON template, the value of <code>logical_resource_name</code> is <code>my_hello_world_vpc</code>.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |

| Parameter | Type | Description |
|-----------------------|--------|--|
| logical_resource_type | String | <p>Resource type.</p> <p>Logical variables are only used as identifiers of the resource in the template.</p> <p>For example, in the following HCL template, the value of logical_resource_type is huaweicloud_vpc.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> <p>In a JSON template, the value of logical_resource_type is huaweicloud_vpc.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |

| Parameter | Type | Description |
|-----------|--------|--|
| index_key | String | <p>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.</p> <p>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.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>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.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc", "count": 2 } } } }</pre> <p>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.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { for_each = { "vpc1" = "test_vpc" "vpc2" = "test_vpc" } name = each.value }</pre> <p>In a JSON template, huaweicloud_vpc.my_hello_world_vpc["vpc1"] and</p> |

| Parameter | Type | Description |
|-----------------|--------|---|
| | | <p>huaweicloud_vpc.my_hello_world_vpc["vpc2"] identify two resources.</p> <pre> { "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "for_each": { "vpc1": "test_vpc", "vpc2": "test_vpc" } } } } } </pre> |
| resource_status | String | <p>Status of the resource.</p> <ul style="list-style-type: none"> • 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. |

| 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 2-96 ResourceAttribute

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

Status code: 400

Table 2-97 Response body parameters

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

Table 2-98 Detail

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

Status code: 401

Table 2-99 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-100 Detail

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

Status code: 403

Table 2-101 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-102 Detail

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

Status code: 404

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: 429

Table 2-105 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-106 Detail

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

Status code: 500

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. |

Example Requests

- List the stack resources.
GET https://{endpoint}/v1/ba2b9930c977f71eda3a5e96a8ff1/stacks/my_hello_world_stack/resources
- List the stack resources and check whether the stack ID matches the current stack.
GET https://{endpoint}/v1/ba2b9930c977f71eda3a5e96a8ff1/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"
}]
}
```

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.

URI

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

Table 2-109 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 2-110 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-111 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 2-112 Response body parameters

| Parameter | Type | Description |
|-----------|--|--------------------|
| outputs | Array of StackOutput objects | Stack output list. |

Table 2-113 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. <pre>output "vpc_id" { value = huaweicloud_vpc.my_hello_world_vpc.id }</pre> In a JSON template, the value of name is vpc_id. <pre>{ "output": { "vpc_id": [{ "value": "\$ {huaweicloud_vpc.my_hello_world_vpc.id}" }] } }</pre> |
| 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. |

Status code: 400

Table 2-114 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-115 Detail

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

Status code: 401

Table 2-116 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-117 Detail

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

Status code: 403

Table 2-118 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-119 Detail

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

Status code: 404

Table 2-120 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-121 Detail

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

Status code: 429

Table 2-122 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-123 Detail

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

Status code: 500

Table 2-124 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-125 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."
  } ]
}
```

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. |
| 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 2-126 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 2-127 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 2-128 Request body parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Response Parameters

Status code: 202

Table 2-129 Response body parameters

| Parameter | Type | Description |
|---------------|--------|---|
| deployment_id | String | <p>Deployment ID</p> <p>Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status.</p> <p>Note:</p> <ul style="list-style-type: none"> 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 2-130 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-131 Detail

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

Status code: 401

Table 2-132 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-133 Detail

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

Status code: 403

Table 2-134 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-135 Detail

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

Status code: 404

Table 2-136 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-137 Detail

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

Status code: 409

Table 2-138 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-139 Detail

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

Status code: 429

Table 2-140 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-141 Detail

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

Status code: 500**Table 2-142** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-143 Detail

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

Example Requests

- Continue to deploy a stack.

```
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.

- 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 2-144 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 2-145 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 2-146 Request body parameters

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| template_body | No | String | <p>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.</p> <p>Either template_body or template_uri must be specified but they both cannot be specified together.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|---|
| template_uri | No | String | <p>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.</p> <p>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.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|-----------------------------|-----------|---------------------------------------|--|
| | | | <ul style="list-style-type: none"> If the template file corresponding to <code>template_uri</code> 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. |
| <code>vars_structure</code> | No | Array of VarsStructure objects | <p>HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> <code>vars_structure</code> allows string variables. RFS supports <code>vars_structure</code>, <code>vars_body</code>, and <code>vars_uri</code>. If they declare the same variable, error code 400 will be reported. <code>vars_structure</code> only supports string variables. To use variables of other types, you need to convert them in HCL reference. Alternatively, you can use <code>vars_uri</code> and <code>vars_body</code>, which support various types and complex structures supported by HCL. If <code>vars_structure</code> is too large, you can use <code>vars_uri</code>. Note: <code>vars_structure</code> 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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| vars_body | No | String | <p>Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| vars_uri | No | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Table 2-147 VarsStructure

| Parameter | Mandatory | Type | Description |
|------------|-----------|-----------------------------------|---|
| var_key | Yes | String | Variable name. |
| var_value | Yes | String | <p>Variable value.</p> <p>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'.</p> <p>For different types or complex structures, you can use vars_uri or vars_body.</p> |
| 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. |

Table 2-148 EncryptionStructure

| Parameter | Mandatory | Type | Description |
|-----------|-----------|-------------------------------------|--|
| kms | Yes | KmsStructure object | <p>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.</p> <p>For more details about KMS encryption and its sample code, refer to KMS Application Scenarios.</p> <p>Note:</p> <ul style="list-style-type: none"> • 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://learn.hashicorp.com/tutorials/terraform/sensitive-variables. |

Table 2-149 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. |

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

Response Parameters

Status code: 202

Table 2-150 Response body parameters

| Parameter | Type | Description |
|---------------|--------|---|
| deployment_id | String | <p>Deployment ID</p> <p>Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status.</p> <p>Note:</p> <ul style="list-style-type: none"> 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 2-151 Response body parameters

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

Table 2-152 Detail

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

Status code: 401

Table 2-153 Response body parameters

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

Table 2-154 Detail

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

Status code: 403

Table 2-155 Response body parameters

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

Table 2-156 Detail

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

Status code: 404

Table 2-157 Response body parameters

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

Table 2-158 Detail

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

Status code: 409

Table 2-159 Response body parameters

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

Table 2-160 Detail

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

Status code: 429

Table 2-161 Response body parameters

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

Table 2-162 Detail

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

Status code: 500

Table 2-163 Response body parameters

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

Table 2-164 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. |
| 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}

Table 2-165 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 |

| 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 2-166 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-167 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: 400

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. |

Status code: 401

Table 2-170 Response body parameters

| Parameter | Type | Description |
|-------------------------------|--------|---|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorization_message | String | The message contains information about unauthorized requests. |

| Parameter | Type | Description |
|-----------|---|--|
| details | Array of Detail objects | Detailed error messages returned by service when permission is denied. |

Table 2-171 Detail

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

Status code: 403

Table 2-172 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-173 Detail

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

Status code: 404

Table 2-174 Response body parameters

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

| 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 2-175 Detail

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

Status code: 429

Table 2-176 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-177 Detail

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

Status code: 500

Table 2-178 Response body parameters

| Parameter | Type | Description |
|------------|--------|----------------|
| error_code | String | Response code. |

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

Table 2-179 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. |
| 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 2-180 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 2-181 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 2-182 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. |
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|----------------------------|-----------|---------|---|
| enable_deletion_protection | No | Boolean | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the deletion protection attribute of the stack will not be updated.</i></p> |
| enable_auto_rollback | No | Boolean | <p>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.)</p> <p><i>In the UpdateStack API, if this variable is not assigned in the RequestBody, the auto-rollback attribute of the stack will not be updated.</i></p> <p><i>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.</i></p> |

| 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 |

Table 2-183 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. agency_name can only receive common agency names. If agency_name is set to a trust agency name, template deployment will fail. |

Response Parameters

Status code: 400

Table 2-184 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-185 Detail

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

Status code: 401

Table 2-186 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-187 Detail

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

Status code: 403

Table 2-188 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-189 Detail

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

Status code: 404

Table 2-190 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-191 Detail

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

Status code: 409

Table 2-192 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-193 Detail

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

Status code: 429

Table 2-194 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-195 Detail

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

Status code: 500

Table 2-196 Response body parameters

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

Table 2-197 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. |
| 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

Table 2-198 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 2-199 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 2-200 Request body parameters

| Parameter | Mandatory | Type | Description |
|----------------------|-----------|---------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| retain_all_resources | No | Boolean | <p>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.)</p> <ul style="list-style-type: none"> 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: 400

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. |

Table 2-202 Detail

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

Status code: 401

Table 2-203 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-204 Detail

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

Status code: 403

Table 2-205 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-206 Detail

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

Status code: 404

Table 2-207 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-208 Detail

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

Status code: 429

Table 2-209 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-210 Detail

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

Status code: 500

Table 2-211 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-212 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
```

```
{
  "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.

URI

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

Table 2-213 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 2-214 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 2-215 Request body parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Response Parameters

Status code: 202

Table 2-216 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: <ul style="list-style-type: none">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 2-217** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-218 Detail

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

Status code: 401

Table 2-219 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-220 Detail

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

Status code: 403

Table 2-221 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-222 Detail

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

Status code: 404

Table 2-223 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-224 Detail

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

Status code: 409

Table 2-225 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-226 Detail

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

Status code: 429

Table 2-227 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-228 Detail

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

Status code: 500

Table 2-229 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-230 Detail

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

Example Requests

- Continue to roll back a stack.

```
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 Execution Plans

2.3.1 Listing Execution Plans

Function

ListExecutionPlans

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

- By default, the execution plans are sorted by creation time in descending order. The one created latest is displayed on the top.
- Currently, all of the existing execution plans are returned. Pagination is not supported.
- 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.

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 2-231 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 2-232 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-233 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 2-234 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. |

Table 2-235 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. |
| stack_id | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Type | Description |
|---------------------|--------|---|
| execution_plan_id | String | <p>Unique execution plan ID.</p> <p>A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> 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 | <p>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.</p> |
| description | String | <p>Execution plan description. It is used to identify your own execution plans.</p> |

| 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. |

Status code: 400

Table 2-236 Response body parameters

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

Table 2-237 Detail

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

Status code: 401

Table 2-238 Response body parameters

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

Table 2-239 Detail

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

Status code: 403

Table 2-240 Response body parameters

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

Table 2-241 Detail

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

Status code: 404

Table 2-242 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 429

Table 2-244 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 500

Table 2-246 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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. |

Example Requests

- List all execution plans of a specified stack.
GET `https://{endpoint}/v1/ba2b9930c977f71eda3a5e96a8ff1/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/ba2b9930c977f71eda3a5e96a8ff1/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",
"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"
}]
}

```

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:

- 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 2-248 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 2-249** 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 2-250 Request body parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| template_body | No | String | <p>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.</p> <p>Either template_body or template_uri must be specified but they both cannot be specified together.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|---|
| template_uri | No | String | <p>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.</p> <p>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.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p>Note:</p> <ul style="list-style-type: none"> 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. |

| Parameter | Mandatory | Type | Description |
|----------------------------------|-----------|--------|---|
| | | | <ul style="list-style-type: none">If the template file corresponding to <code>template_uri</code> 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. |
| <code>execution_plan_name</code> | Yes | String | An execution plan name is unique within its domain (<code>domain_id</code>), region, project (<code>project_id</code>), and stack (<code>stack_id</code>). It is case-sensitive and starts with a letter. Only letters, digits, underscores (<code>_</code>), and hyphens (<code>-</code>) are allowed. |
| <code>description</code> | No | String | Execution plan description. It is used to identify your own execution plans. |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------------------------------------|--|
| vars_structure | No | Array of VarsStructure objects | <p>HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • vars_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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| vars_body | No | String | <p>Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| vars_uri | No | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> • 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 2-251 VarsStructure

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|----------------|
| var_key | Yes | String | Variable name. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|-----------------------------------|---|
| var_value | Yes | String | <p>Variable value.</p> <p>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'.</p> <p>For different types or complex structures, you can use vars_uri or vars_body.</p> |
| encryption | No | EncryptionStructure object | <p>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.</p> |

Table 2-252 EncryptionStructure

| Parameter | Mandatory | Type | Description |
|-----------|-----------|-------------------------------------|---|
| kms | Yes | KmsStructure object | <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> 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://learn.hashicorp.com/tutorials/terraform/sensitive-variables. |

Table 2-253 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 2-254 Response body parameters

| Parameter | Type | Description |
|-------------------|--------|---|
| execution_plan_id | String | <p>Unique execution plan ID.</p> <p>A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> 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

Table 2-255 Response body parameters

| Parameter | Type | Description |
|------------|--------|----------------|
| error_code | String | Response code. |

| 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 2-256 Detail

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

Status code: 401

Table 2-257 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-258 Detail

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

Status code: 403

Table 2-259 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-260 Detail

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

Status code: 409

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: 429

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: 500

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. |

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`

```
{
  "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.

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 =\n        \"huawei.com/provider/huaweicloud\"\n      version = \"1.41.0\"\n    }\n  }\n  provider\n    \"huaweicloud\" {\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n    endpoints = {\n      iam = \"{iam_endpoint}\",\n    }\n  }\n  resource \"huaweicloud_vpc\" \"vpc\" {\n    cidr = \"172.16.0.0/16\"\n    name = \"my_vpc\"\n  }\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 2-267 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. |

Table 2-268 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|--------|---|
| execution_plan_id | No | String | <p>Unique execution plan ID. A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-269 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 2-270 Response body parameters

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

Table 2-271 ExecutionPlanItem

| Parameter | Type | Description |
|---------------|--------|--|
| resource_type | String | <p>Resource type.</p> <p>For example, in the following HCL template, the value of resource_type is huaweicloud_vpc.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> <p>In a JSON template, the value of resource_type is huaweicloud_vpc.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |
| resource_name | String | <p>Resource name. The default value is the logical name of a resource.</p> <p>For example, in the following HCL template, the value of resource_name is my_hello_world_vpc.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> <p>In a JSON template, the value of resource_name is my_hello_world_vpc.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |

| Parameter | Type | Description |
|-----------|--------|---|
| index | String | <p>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.</p> <p>If count is used in a template, index is a number starting from 0.</p> <p>For example, in the following HCL template, <code>huaweicloud_vpc.my_hello_world_vpc[0]</code> and <code>huaweicloud_vpc.my_hello_world_vpc[1]</code> identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>In a JSON template, <code>huaweicloud_vpc.my_hello_world_vpc[0]</code> and <code>huaweicloud_vpc.my_hello_world_vpc[1]</code> identify two resources.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc", "count": 2 } } } }</pre> <p>If for_each is used in a template, index is a user-defined string.</p> <p>For example, in the following HCL template, <code>huaweicloud_vpc.my_hello_world_vpc["vpc1"]</code> and <code>huaweicloud_vpc.my_hello_world_vpc["vpc2"]</code> identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { for_each = { "vpc1" = "test_vpc" "vpc2" = "test_vpc" } name = each.value }</pre> <p>In a JSON template, <code>huaweicloud_vpc.my_hello_world_vpc["vpc1"]</code> and <code>huaweicloud_vpc.my_hello_world_vpc["vpc2"]</code> identify two resources.</p> |

| Parameter | Type | Description |
|---------------|--------|---|
| | | <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "for_each": { "vpc1": "test_vpc", "vpc2": "test_vpc" } } } } }</pre> |
| action | String | <p>Resource change types may include:</p> <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> - 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 | <p>Resource modes may include:</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Type | Description |
|-----------|---------|---|
| drifted | Boolean | <p>Whether the change of the current resource is caused by deviation.</p> <p>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.</p> <p>After a resource deviation occurs:</p> <ul style="list-style-type: none"> • 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. <p>The resource deviation types may include:</p> <ul style="list-style-type: none"> • 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. <p>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.</p> |
| imported | Boolean | Whether changes to the current resource are imported. |

| 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 2-272 ExecutionPlanDiffAttribute

| Parameter | Type | Description |
|----------------|--------|--|
| name | String | Name of the to-be-modified parameter of the current resource. |
| previous_value | String | <p>Original value of the modified parameter of the current resource.</p> <p>During resource creation, previous_value is empty.</p> <p>If a deviation occurs in a remote resource, the resource returns two ExecutionPlanItems, the drifted values of which are true and false, respectively.</p> <ul style="list-style-type: none"> 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. <p>If no deviation occurs in a remote resource, only one ExecutionPlanItem whose drifted is false is returned.</p> <ul style="list-style-type: none"> The previous_value whose drifted is false indicates the original resource attribute and status in the stack. |

| Parameter | Type | Description |
|--------------|--------|--|
| target_value | String | <p>Target value of the modified parameter of the current resource.</p> <p>During resource deletion, target_value is empty.</p> <p>If a deviation occurs in a remote resource, the resource returns two ExecutionPlanItems, the drifted values of which are true and false, respectively.</p> <ul style="list-style-type: none"> • 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. <p>If no deviation occurs in a remote resource, only one ExecutionPlanItem whose drifted is false is returned.</p> <ul style="list-style-type: none"> • The target_value whose drifted is false indicates the resource attribute and status updated based on your template. |

Status code: 400

Table 2-273 Response body parameters

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

Table 2-274 Detail

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

Status code: 401

Table 2-275 Response body parameters

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

Table 2-276 Detail

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

Status code: 403

Table 2-277 Response body parameters

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

Table 2-278 Detail

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

Status code: 404

Table 2-279 Response body parameters

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

Table 2-280 Detail

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

Status code: 429

Table 2-281 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 500

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. |

Table 2-284 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/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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": [ {
```

```
"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 2-285 Path Parameters

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

Request Parameters

Table 2-286 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 2-287 Request body parameters

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|--------|---|
| execution_plan_id | No | String | <p>Unique execution plan ID.</p> <p>A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> • 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. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Response Parameters

Status code: 202

Table 2-288 Response body parameters

| Parameter | Type | Description |
|---------------|--------|---|
| deployment_id | String | <p>Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered.</p> <p>Deployment request is accepted by RFS and will be processed asynchronously. You can call GetStackMetadata to query the stack status.</p> <p>Note:</p> <ul style="list-style-type: none"> 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 2-289 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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. |

Status code: 401

Table 2-291 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-292 Detail

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

Status code: 403

Table 2-293 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-294 Detail

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

Status code: 404

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. |

Status code: 409

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: 429

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: 500

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. |

Example Requests

- Apply an execution plan of a specified stack.

```
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"
}
```

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. |
| 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 2-303 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. |

Table 2-304 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|--------|---|
| execution_plan_id | No | String | <p>Unique execution plan ID. A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-305 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: 400

Table 2-306 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-307 Detail

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

Status code: 401**Table 2-308** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-309 Detail

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

Status code: 403

Table 2-310 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-311 Detail

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

Status code: 404

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: 500

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. |

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 | <ol style="list-style-type: none"> The user does not have the permission to call this API. The execution plan cannot be deleted due to its invalid status. |

| 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 2-316 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. |

| Parameter | Mandatory | Type | Description |
|-------------------------|-----------|--------|--|
| execution_pla n_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 2-317 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|--------|---|
| execution_plan_id | No | String | <p>Unique execution plan ID. A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-318 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 2-319 Response body parameters

| Parameter | Type | Description |
|------------|--------|--|
| stack_id | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_name | String | <p>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.</p> |

| Parameter | Type | Description |
|---------------------|--------|---|
| execution_plan_id | String | <p>Unique execution plan ID.</p> <p>A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note:</p> <ul style="list-style-type: none"> 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 | <p>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.</p> |
| description | String | <p>Execution plan description. It is used to identify your own execution plans.</p> |

| Parameter | Type | Description |
|------------------|---------------------------------------|---|
| vars_structure | Array of VarsStructure objects | <p>HCL variable structure. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none">• 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. |

| Parameter | Type | Description |
|----------------|--------|--|
| vars_body | String | <p>Content of the HCL variable file. Transferring variables is supported by the HCL template. The same template can use different variables for different purposes.</p> <ul style="list-style-type: none"> • 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 | <p>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.</p> |
| status_message | String | <p>If an execution plan is in a CREATION_FAILED status, a brief error information summary is displayed for debugging.</p> |

| Parameter | Type | Description |
|-------------|------------------------------------|--|
| 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: <ul style="list-style-type: none"> • Number of resources to be added. • Number of resources to be updated. • Number of resources to be deleted. ** Note:** <ul style="list-style-type: none"> • The summary is returned only when the execution plan is in the following states: <i>AVAILABLE</i>, <i>APPLY_IN_PROGRESS</i> or <i>APPLIED</i>. • 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. |

Table 2-320 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. |

Table 2-321 EncryptionStructure

| Parameter | Type | Description |
|-----------|-------------------------------------|---|
| kms | KmsStructure object | <p>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.</p> <p>For more details about KMS encryption and its sample code, refer to KMS Application Scenarios.</p> <p>Note:</p> <ul style="list-style-type: none"> 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. <p>More details</p> <ul style="list-style-type: none"> 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://learn.hashicorp.com/tutorials/terraform/sensitive-variables. |

Table 2-322 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 2-323 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 2-324 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-325 Detail

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

Status code: 401

Table 2-326 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-327 Detail

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

Status code: 403

Table 2-328 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-329 Detail

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

Status code: 404

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: 429

Table 2-332 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 500

Table 2-334 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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. |

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
  }
}
```

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. |

| Status Code | Description |
|-------------|------------------------|
| 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:
 - huaweicloud_cce_cluster:
 - Supported billing modes: yearly/monthly and pay-per-use
 - huaweicloud_css_cluster:
 - Supported billing mode: pay-per-use
 - huaweicloud_efs_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
- 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

URI

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

Table 2-336 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. |

Table 2-337 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| stack_id | No | String | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|--------|---|
| execution_plan_id | No | String | <p>Unique execution plan ID. A UUID is generated by RFS when an execution plan is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-338 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 2-339 Response body parameters

| Parameter | Type | Description |
|-----------|--|--|
| currency | String | Currency, which can be: <ul style="list-style-type: none"> • USD: used on Huawei Cloud International website. |
| items | Array of ItemsResponse objects | Inquiry results of all resources in an execution plan. |

Table 2-340 ItemsResponse

| Parameter | Type | Description |
|---------------|--------|--|
| resource_type | String | Resource type. For example, in the following HCL template, the value of resource_type is huaweicloud_vpc. <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> In a JSON template, the value of resource_type is huaweicloud_vpc. <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |
| 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. <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { name = "test_vpc" }</pre> In a JSON template, the value of resource_name is my_hello_world_vpc. <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc" } } } }</pre> |

| Parameter | Type | Description |
|-----------|--------|---|
| index | String | <p>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.</p> <p>If count is used in a template, index is a number starting from 0.</p> <p>For example, in the following HCL template, <code>huaweicloud_vpc.my_hello_world_vpc[0]</code> and <code>huaweicloud_vpc.my_hello_world_vpc[1]</code> identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>In a JSON template, <code>huaweicloud_vpc.my_hello_world_vpc[0]</code> and <code>huaweicloud_vpc.my_hello_world_vpc[1]</code> identify two resources.</p> <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "name": "test_vpc", "count": 2 } } } }</pre> <p>If for_each is used in a template, index is a user-defined string.</p> <p>For example, in the following HCL template, <code>huaweicloud_vpc.my_hello_world_vpc["vpc1"]</code> and <code>huaweicloud_vpc.my_hello_world_vpc["vpc2"]</code> identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { for_each = { "vpc1" = "test_vpc" "vpc2" = "test_vpc" } name = each.value }</pre> <p>In a JSON template, <code>huaweicloud_vpc.my_hello_world_vpc["vpc1"]</code> and <code>huaweicloud_vpc.my_hello_world_vpc["vpc2"]</code> identify two resources.</p> |

| Parameter | Type | Description |
|---------------------|--|--|
| | | <pre>{ "resource": { "huaweicloud_vpc": { "my_hello_world_vpc": { "for_each": { "vpc1": "test_vpc", "vpc2": "test_vpc" } } } } }</pre> |
| 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 2-341 ResourcePriceResponse

| Parameter | Type | Description |
|-------------|--------|---|
| charge_mode | String | Billing mode. <ul style="list-style-type: none"> 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. |

| 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 | <p>Billing unit.</p> <p>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.</p> <ul style="list-style-type: none"> • 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 | <p>Billed amount of the resource. This parameter must be used together with period_type.</p> <p>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.</p> <ul style="list-style-type: none"> • 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. |

| 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 2-342 Response body parameters

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

Table 2-343 Detail

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

Status code: 401**Table 2-344** Response body parameters

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

Table 2-345 Detail

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

Status code: 403**Table 2-346** Response body parameters

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

Table 2-347 Detail

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

Status code: 404

Table 2-348 Response body parameters

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

Table 2-349 Detail

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

Status code: 429

Table 2-350 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 500**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. |

Table 2-353 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",
 "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 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

**Table 2-354** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                               |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | A project ID is obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |

## Request Parameters

**Table 2-355** 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 2-356** Request body parameters

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_body | No        | String | <p>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.</p> <p>Either template_body or template_uri must be specified but they both cannot be specified together.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul> |



| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_uri | No        | String | <p>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.</p> <p>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.</p> <p><i>In the CreateStack API, template_body and template_uri are optional.</i></p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <ul style="list-style-type: none"> <li>If the template file corresponding to <code>template_uri</code> 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.</li> </ul> |

## Response Parameters

Status code: 200

Table 2-357 Response body parameters

| Parameter | Type                                              | Description                       |
|-----------|---------------------------------------------------|-----------------------------------|
| variables | Array of <a href="#">VariableResponse</a> objects | Variables parsed from a template. |

**Table 2-358** VariableResponse

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | String | <p>Variable name.</p> <p>For example, in the following HCL template, the value of name is <code>my_hello_world_variable</code>.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of name is <code>my_hello_world_variable</code>.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p>Variable type.</p> <p>For example, in the following HCL template, the value of type is string.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of type is string.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | String | <p>Variable description.</p> <p>For example, in the following HCL template, the value of description is <i>this is a variable</i>.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of description is <i>this is a variable</i>.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default   | Object | <p>Default variable value. The type of the return value is the same as that defined in the type field.</p> <p>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.</p> <p>For example, in the following HCL template, the value of default is <i>hello world</i>.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of default is <i>hello world</i>.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sensitive | Boolean | <p>Whether the variable is sensitive.</p> <p>If sensitive is not defined in the variable, false is returned by default.</p> <p>For example, in the following HCL template, the value of sensitive is false.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of sensitive is false.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |

| Parameter   | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nullable    | Boolean                                            | <p>Whether the variable can be set to null.</p> <p>If nullable is not defined in the variable, true is returned by default.</p> <p>For example, in the following HCL template, the value of nullable is false.</p> <pre>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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == "hello"     error_message = "my_hello_world_variable should start with 'hello'."   } }</pre> <p>In a JSON template, the value of nullable is false.</p> <pre>{   "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) &gt; 0 &amp;&amp; substr(var.my_hello_world_variable, 0, 5) == \"hello \"}",             "error_message": "my_hello_world_variable should start with 'hello'."           }         ]       }     ]   } }</pre> |
| validations | Array of <b>VariableValidationResponse</b> objects | Variable verification module.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Table 2-359** VariableValidationResponse

| Parameter | Type   | Description          |
|-----------|--------|----------------------|
| condition | String | Variable expression. |



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

**Status code: 400**

**Table 2-360** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-361** Detail

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

**Status code: 401**

**Table 2-362** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-363** Detail

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

**Status code: 403**

**Table 2-364** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-365** Detail

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

**Status code: 429**

**Table 2-366** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 500**

**Table 2-368** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-369** 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.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/template-analyses/variables
{
 "template_body" : "terraform {
 required_providers {
 huaweicloud = {
 source = \"huawei.com/provider/huaweicloud\"
 version = \"1.41.0\"
 }
 }
 provider \"huaweicloud\" {
 insecure = true
 cloud = \"{cloud_name}\"
 region = \"{region}\"
 endpoints = {
 iam = \"{iam_endpoint}\"
 }
 }
 variable \"name\" {
 type = string
 default = \"my_default_vpc\"
 sensitive = true
 nullable = true
 validation {
 condition = length(var.name) > 2 && substr(var.name, 0, 2) == \"my\"
 error_message = \"The name value must be a valid name, starting with my.\"
 }
 }
 resource \"huaweicloud_vpc\" \"vpc\" {
 cidr = \"172.16.0.0/16\"
 name = var.name
 }
 }"
```

## 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 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.
- Currently, all templates are returned. Pagination is not supported.
- If no template is available, an empty list will be returned.
- To obtain details about template versions, call ListTemplateVersions.

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 2-370** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                     |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |

## Request Parameters

**Table 2-371** 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 2-372** Response body parameters

| Parameter | Type                                      | Description    |
|-----------|-------------------------------------------|----------------|
| templates | Array of <a href="#">Template</a> objects | Template list. |

**Table 2-373** Template

| Parameter            | Type   | Description                                                                    |
|----------------------|--------|--------------------------------------------------------------------------------|
| template_id          | String | Unique template ID. It is randomly generated by the template service.          |
| template_name        | String | Name of the template to be created.                                            |
| template_description | String | Template description. It can be used by users to identify their own templates. |

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

**Status code: 400****Table 2-374** 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 <a href="#">Detail</a> 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. |

**Status code: 401****Table 2-376** Response body parameters

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

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-377** Detail

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

**Status code: 403**

**Table 2-378** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-379** Detail

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

**Status code: 429**

**Table 2-380** Response body parameters

| Parameter  | Type   | Description |
|------------|--------|-------------|
| error_code | String | Error code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Error message.                                                         |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-381** Detail

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

**Status code: 500****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 <a href="#">Detail</a> 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. |

## Example Requests

List all your templates at the current region.

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



## Example Responses

### Status code: 200

Templates listed.

```
{
 "templates": [{
 "template_id": "69f8d5ea-aaa4-4a3b-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-aaa4-4a3b-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"
 }
]
```

## 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 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 2-384** Path Parameters

| Parameter     | Mandatory | Type   | Description                                                                                                     |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |
| template_name | Yes       | String | Name of the template to be created.                                                                             |

**Table 2-385** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                    |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id | No        | String | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, 400 is returned. |

## Request Parameters

**Table 2-386** 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: 400**

**Table 2-387** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-388** Detail

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

**Status code: 401**

**Table 2-389** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-390** Detail

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

**Status code: 403**

**Table 2-391** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-392** Detail

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

**Status code: 404**

**Table 2-393** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-394** Detail

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

**Status code: 429**

**Table 2-395** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-396** Detail

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

**Status code: 500**

**Table 2-397** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-398** 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](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.                                  |

## 2.5.3 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 2-399** Path Parameters

| Parameter     | Mandatory | Type   | Description                                                                                                     |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |
| template_name | Yes       | String | Name of the template to be created.                                                                             |

## Request Parameters

**Table 2-400** 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 2-401** 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: 400**

**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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-403** Detail

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter | Type   | Description       |
|-----------|--------|-------------------|
| error_msg | String | Response message. |

**Status code: 401**

**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 <a href="#">Detail</a> 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: 403**

**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 <a href="#">Detail</a> 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. |

**Status code: 404**

**Table 2-408** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-409** Detail

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

**Status code: 429**

**Table 2-410** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-411** Detail

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

**Status code: 500**

**Table 2-412** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-413** 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.                                  |
| 500         | Internal server error.                                  |

## 2.5.4 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 2-414** Path Parameters

| Parameter               | Mandatory | Type   | Description                                                                                                     |
|-------------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| <code>project_id</code> | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |

| Parameter     | Mandatory | Type   | Description                         |
|---------------|-----------|--------|-------------------------------------|
| template_name | Yes       | String | Name of the template to be created. |

**Table 2-415** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                           |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id | No        | String | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, <b>400</b> is returned. |

## Request Parameters

**Table 2-416** 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 2-417** 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 the template to be created.                                                                                       |
| 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. |

| 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 2-418** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-419** Detail

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

**Status code: 401**

**Table 2-420** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-421** Detail

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

**Status code: 403**

**Table 2-422** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-423** Detail

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

**Status code: 404**

**Table 2-424** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-425** Detail

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

**Status code: 429**

**Table 2-426** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 500**

**Table 2-428** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

## 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-aaa4-4a3b-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.                                  |



## 2.5.5 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.
- Currently, all template versions are returned. Pagination is not supported.
- 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.

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 2-430** Path Parameters

| Parameter     | Mandatory | Type   | Description                                                                                                     |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |
| template_name | Yes       | String | Name of the template to be created.                                                                             |

**Table 2-431** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                           |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id | No        | String | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, <b>400</b> is returned. |

## Request Parameters

**Table 2-432** 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 2-433** Response body parameters

| Parameter | Type                                    | Description            |
|-----------|-----------------------------------------|------------------------|
| versions  | Array of <b>TemplateVersion</b> objects | Template version list. |

**Table 2-434** TemplateVersion

| Parameter           | Type   | Description                                                                                         |
|---------------------|--------|-----------------------------------------------------------------------------------------------------|
| template_id         | String | Unique template ID. It is randomly generated by the template service.                               |
| template_name       | String | Name of the template to be created.                                                                 |
| version_description | String | Description of a template version. It can be used by users to identify their own template versions. |

| Parameter   | Type   | Description                                                                                                                      |
|-------------|--------|----------------------------------------------------------------------------------------------------------------------------------|
| 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.                                                                                                             |

**Status code: 400**

**Table 2-435** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-436** Detail

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

**Status code: 401**

**Table 2-437** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-438** Detail

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

**Status code: 403**

**Table 2-439** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-440** Detail

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

**Status code: 404**

**Table 2-441** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-442** Detail

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

**Status code: 429**

**Table 2-443** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-444** Detail

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

**Status code: 500**

**Table 2-445** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-446** 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-aaa4-4a3b-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-aaa4-4a3b-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"
 }
]
```

## 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. |
| 404         | The template does not exist.                            |
| 429         | Too frequent requests.                                  |
| 500         | Internal server error.                                  |

## 2.5.6 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 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 2-447** Path Parameters

| Parameter     | Mandatory | Type   | Description                                                                                                                 |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a>             |
| template_name | Yes       | String | Name of the template to be created.                                                                                         |
| 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 2-448** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                           |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id | No        | String | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, <b>400</b> is returned. |

## Request Parameters

**Table 2-449** 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: 400**

**Table 2-450** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 401**

**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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-453** Detail

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

**Status code: 403**

**Table 2-454** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-455** Detail

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

**Status code: 404**

**Table 2-456** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-457** Detail

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

**Status code: 429**

**Table 2-458** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-459** Detail

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

**Status code: 500**

**Table 2-460** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

## 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.                                  |

| Status Code | Description            |
|-------------|------------------------|
| 500         | Internal server error. |

## 2.5.7 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 2-462** Path Parameters

| Parameter                  | Mandatory | Type   | Description                                                                                                     |
|----------------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| <code>project_id</code>    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a> |
| <code>template_name</code> | Yes       | String | Name of the template to be created.                                                                             |

| Parameter  | Mandatory | Type   | Description                                                                                                                 |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------|
| 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 2-463** Query Parameters

| Parameter                     | Mandatory | Type             | Description                                                                                                                                                           |
|-------------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id                   | No        | String           | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, <b>400</b> 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 (-).          |

## Request Parameters

**Table 2-464** 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 2-465** 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 2-466** Response body parameters

| Parameter | Type   | Description         |
|-----------|--------|---------------------|
| -         | String | Empty response body |

**Status code: 400**

**Table 2-467** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-468** Detail

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

**Status code: 401**

**Table 2-469** Response body parameters

| Parameter  | Type   | Description |
|------------|--------|-------------|
| error_code | String | Error code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Error message.                                                         |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-470** Detail

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

**Status code: 403**

**Table 2-471** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-472** Detail

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

**Status code: 404**

**Table 2-473** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-474** Detail

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

**Status code: 429**

**Table 2-475** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-476** Detail

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

**Status code: 500**



**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.          |
| details                       | Array of <b>Detail</b> 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. |

## Example Requests

- Obtain a specified version of a specified template.  
GET [https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my\\_template/versions/V1](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](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](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-ad3c-4bca-91t8-53870f3402a9&access\\_control\\_source\\_vpc\\_ids=d42a8768-ad3c-4bca-91t8-53870f3402a8](https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?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                                                                         |
|-------------|-------------------------------------------------------------------------------------|
| 200         | Empty response body.                                                                |
| 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.                                                              |

## 2.5.8 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

**Table 2-479** Path Parameters

| Parameter     | Mandatory | Type   | Description                                                                                                                 |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Project ID. It can be obtained by calling an API or from the console.<br><a href="#">Obtaining a Project ID</a>             |
| template_name | Yes       | String | Name of the template to be created.                                                                                         |
| 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 2-480** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                           |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_id | No        | String | ID of a template. If <b>template_id</b> exists, the template service checks whether <b>template_id</b> matches <b>template_name</b> . If not, <b>400</b> is returned. |

## Request Parameters

**Table 2-481** 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 2-482** 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 the template to be created.                                                                                              |
| 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 2-483** 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 <a href="#">Detail</a> 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: 401****Table 2-485** Response body parameters

| Parameter  | Type   | Description |
|------------|--------|-------------|
| error_code | String | Error code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Error message.                                                         |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 403**

**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 <a href="#">Detail</a> 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. |

**Status code: 404**

**Table 2-489** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-490** Detail

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

**Status code: 429**

**Table 2-491** 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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-492** Detail

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

**Status code: 500**

**Table 2-493** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Error code.                                                            |
| error_msg                  | String                                  | Error message.                                                         |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-494** 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.                    |

| 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 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.

#### URI

GET /v1/stack-sets



**Table 2-495** Query Parameters

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| filter    | No        | String           | <p>Filter condition.</p> <ul style="list-style-type: none"> <li>• The AND operator is defined by commas (,).</li> <li>• The OR operator is defined using a vertical bar ( ). The OR operator has a higher priority than the AND operator.</li> <li>• Parentheses are not supported.</li> <li>• The filter operator only supports the equal sign (=).</li> <li>• The filter parameter name and value can contain only letters, digits, and underscores (_).</li> <li>• Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid.</li> <li>• 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.</li> </ul> |
| sort_key  | No        | Array of strings | <p>Sorting field. Only create_time is supported.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| sort_dir  | No        | Array of strings | <p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> <li>• <i>asc</i>: ascending order</li> <li>• <i>desc</i>: descending order</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-496** 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 2-497** Response body parameters

| Parameter  | Type                                      | Description |
|------------|-------------------------------------------|-------------|
| stack_sets | Array of <a href="#">StackSet</a> objects | Stack sets. |

**Table 2-498** StackSet

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id          | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_set_name        | String | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| stack_set_description | String | <p>Description of a stack set. It can be used by customers to identify their own stack sets.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| permission_model | String | <p>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.</p> <p>* <i>SERVICE_MANAGED</i>: 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.</p> <p>* <i>SELF_MANAGED</i>: 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.</p> |
| status           | String | <p>The stack set status can be:</p> <ul style="list-style-type: none"> <li>• <i>IDLE</i>: The stack set is idle.</li> <li>• <i>OPERATION_IN_PROGRESS</i>: The stack set operation is in progress.</li> <li>• <i>DEACTIVATED</i>: The stack set is disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| create_time      | String | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| update_time      | String | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Status code: 400**

**Table 2-499** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-500** Detail

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

**Status code: 401**

**Table 2-501** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-502** Detail

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

**Status code: 403**

**Table 2-503** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-504** Detail

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

**Status code: 429**

**Table 2-505** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-506** Detail

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

**Status code: 500**

**Table 2-507** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-508** Detail

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

## 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"
}]
}

```

## 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. |
| 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 2-509** 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 2-510** 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.                                                                                                                      |

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| permission_model | No        | String | <p>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.</p> <p>* <i>SERVICE_MANAGED</i>: 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.</p> <p>* <i>SELF_MANAGED</i>: 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.</p> |

| Parameter                  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_agency_name | No        | String | <p>Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>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.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |

| Parameter           | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| managed_agency_name | No        | String | <p>Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources.</p> <p>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.</p> <p>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.</p> |
| template_body       | No        | String | <p>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.</p> <p>You can specify either template_body or template_uri, not both.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext.</li> </ul>                                                                                                  |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_uri | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <p>The corresponding file must be a tf file or a zip package.</p> <p>A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded.</p> <p>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.</p> <p>You can specify either template_body or template_uri, not both.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to template_uri as plaintext. <ul style="list-style-type: none"> <li>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</li> </ul> </li> </ul> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |        | the .zip package cannot exceed 1 MB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| vars_uri  | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> <li>vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported.</li> <li>RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> </ul> <p>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.</p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.</li> </ul> |

| Parameter                 | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_body                 | No        | String | <p>Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes.</p> <ul style="list-style-type: none"> <li>• The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body.</li> <li>• RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> <li>• If vars_body is too large, you can use vars_uri.</li> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.</li> </ul> |
| initial_stack_description | No        | String | <p>Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set.</p> <p>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.</p> <p>If the stack set description is updated later, the managed stack description will not be updated synchronously.</p>                                                                                                                                                                                                                              |

| Parameter          | Mandatory | Type                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_urn | No        | String                          | <p>Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_urn, but not both.</p> <p>You are advised to specify administration_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.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |
| managed_operation  | No        | <b>managed_operation</b> object | A set of properties used to manage the stack set operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"><li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.*<ul style="list-style-type: none"><li>- <code>SELF</code> - Invoked as to the management account.</li><li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li></ul></li></ul> |

**Table 2-511** managed\_operation

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_parallel_operation | No        | Boolean | <p>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.</p> <p>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 <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code> status can be processed.</p> <p>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.</p> <p>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.</p> <p>When the stack set is in <code>OPERATION_IN_PROGRESS</code> status, this parameter is not allowed to be modified by UpdateStackSet API.</p> <p><i>Currently, a maximum of 10 stack set operations in <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code></i></p> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | <i>status can exist in one stack set.</i> |

## Response Parameters

**Status code: 201**

**Table 2-512** Response body parameters

| Parameter    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

**Status code: 400**

**Table 2-513** Response body parameters

| Parameter                     | Type   | Description                                                   |
|-------------------------------|--------|---------------------------------------------------------------|
| error_code                    | String | Response code.                                                |
| error_msg                     | String | Response message.                                             |
| encoded_authorization_message | String | The message contains information about unauthorized requests. |

| Parameter | Type                                    | Description                                                            |
|-----------|-----------------------------------------|------------------------------------------------------------------------|
| details   | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-514** Detail

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

**Status code: 401****Table 2-515** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 409****Table 2-517** Response body parameters

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

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-518** Detail

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

**Status code: 429**

**Table 2-519** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 500**

**Table 2-521** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-522** 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.

```
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 =\n \"huawei.com/provider/huaweicloud\"\n version = \"1.41.0\"\n }\n }\n provider\n \"huaweicloud\" {\n insecure = true\n cloud = \"{cloud_name}\"\n region = \"{region}\"\n endpoints = {\n iam = \"{iam_endpoint}\"\n }\n }\n resource \"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"
}
```

## 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.<br>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 2-523 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 2-524** Query Parameters

| Parameter                     | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id                  | No        | String           | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack set is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| access_control_source_ips     | No        | Array of strings | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| access_control_source_vpc_ids | No        | Array of strings | <p>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 (-).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-525** 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 2-526** 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 2-527** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 401**

**Table 2-529** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 403**

**Table 2-531** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 404**

**Table 2-533** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 429**

**Table 2-535** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 500**

**Table 2-537** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-538** 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.                                  |

## 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.

### URI

GET /v1/stack-sets/{stack\_set\_name}/operations

**Table 2-539** Path Parameters

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                            |
|----------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_name | Yes       | String | Stack set name. The name is unique within its domain ( <code>domain_id</code> ) and region. Only letters, digits, underscores ( <code>_</code> ), and hyphens ( <code>-</code> ) are allowed. The name is case-sensitive and must start with a letter. |

**Table 2-540** Query Parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id | No        | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack set is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| filter    | No        | String           | <p>Filter condition.</p> <ul style="list-style-type: none"> <li>• The AND operator is defined by commas (,).</li> <li>• The OR operator is defined using a vertical bar ( ). The OR operator has a higher priority than the AND operator.</li> <li>• Parentheses are not supported.</li> <li>• The filter operator only supports the equal sign (=).</li> <li>• The filter parameter name and value can contain only letters, digits, and underscores (_).</li> <li>• Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid.</li> <li>• 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.</li> </ul> |
| sort_key  | No        | Array of strings | Sorting field. Only create_time is supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| sort_dir  | No        | Array of strings | <p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> <li>• <i>asc</i>. ascending order</li> <li>• <i>desc</i>. descending order</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-541** 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 2-542** Response body parameters

| Parameter            | Type                                               | Description           |
|----------------------|----------------------------------------------------|-----------------------|
| stack_set_operations | Array of <a href="#">StackSetOperation</a> objects | Stack set operations. |

**Table 2-543** StackSetOperation

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation_id   | String | Stack set operation ID.<br>It is a UUID generated by RFS when a stack set operation is created.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| stack_set_id   | String | Unique ID of a stack set.<br>It is a UUID generated by RFS when a stack is created.<br>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.<br>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.<br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | String | Current operation of the user can be: <ul style="list-style-type: none"> <li>• <i>CREATE_STACK_INSTANCES</i>: Create a stack instance.</li> <li>• <i>DELETE_STACK_INSTANCES</i>: Delete a stack instance.</li> <li>• <i>DEPLOY_STACK_SET</i>: Deploy a stack set.</li> <li>• <i>DEPLOY_STACK_INSTANCES</i>: Deploy a stack instance.</li> </ul>                                                                                                                                                                                                                                       |
| status         | String | The stack set operation status can be: <ul style="list-style-type: none"> <li>• <i>QUEUE_IN_PROGRESS</i>: The operation is in queue.</li> <li>• <i>OPERATION_IN_PROGRESS</i>: The operation is in progress.</li> <li>• <i>OPERATION_COMPLETE</i>: The operation is complete.</li> <li>• <i>OPERATION_FAILED</i>: The operation failed.</li> <li>• <i>STOP_IN_PROGRESS</i>: The operation is being stopped.</li> <li>• <i>STOP_COMPLETE</i> - The operation stopped. <ul style="list-style-type: none"> <li>- <i>STOP_FAILED</i>: Failed to stop the operation.</li> </ul> </li> </ul> |
| 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.<br><br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Status code: 400**

**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 <a href="#">Detail</a> 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: 401**

**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 <a href="#">Detail</a> 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: 403**

**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 <a href="#">Detail</a> 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: 404**

**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 <a href="#">Detail</a> 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. |

**Status code: 429**

**Table 2-552** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-553** Detail

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

**Status code: 500****Table 2-554** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-555** 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",
 "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"
 }
]
}
```

## 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

**Table 2-556** 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 2-557** Query Parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id | No        | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack set is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-558** 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 2-559** Response body parameters

| Parameter                 | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id              | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_set_name            | String | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| stack_set_description     | String | <p>Description of a stack set. It can be used by customers to identify their own stack sets.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| initial_stack_description | String | <p>Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set.</p> <p>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.</p> <p>If the stack set description is updated later, the managed stack description will not be updated synchronously.</p>                                                                                                                                                                                                                                                                                                                                   |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| permission_model | String | <p>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.</p> <p>* <i>SERVICE_MANAGED</i>: 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.</p> <p>* <i>SELF_MANAGED</i>: 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.</p> |

| Parameter                  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_agency_name | String | <p>Administration agency names.</p> <p>RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>You are advised to specify administration_agency_urn when using a trust agency.</p> <p>administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |
| managed_agency_name        | String | <p>Name of the managed agency.</p> <p>RFS uses this agency to obtain the permissions required for deploying resources.</p> <p>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.</p> <p>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.</p>                                                                                                                                                                                                                                                                                                                         |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status           | String | The stack set status can be: <ul style="list-style-type: none"> <li>• <i>IDLE</i>: The stack set is idle.</li> <li>• <i>OPERATION_IN_PROGRESS</i>: The stack set operation is in progress.</li> <li>• <i>DEACTIVATED</i>: The stack set is disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                    |
| 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. <ul style="list-style-type: none"> <li>• The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body.</li> <li>• RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> <li>• If vars_body is too large, you can use vars_uri.</li> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.</li> </ul> |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter                 | Type                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_agency_urn | String                          | <p>Administration agency URNs.</p> <p>RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>You are advised to specify administration_agency_urn when using a trust agency.</p> <p>administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |
| managed_operation         | <b>managed_operation</b> object | A set of properties used to manage the stack set operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Parameter               | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> |



| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

**Table 2-560** managed\_operation

| Parameter                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_parallel_operation | Boolean | <p>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.</p> <p>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 <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code> status can be processed.</p> <p>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.</p> <p>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.</p> <p>When the stack set is in <code>OPERATION_IN_PROGRESS</code> status, this parameter is not allowed to be modified by UpdateStackSet API.</p> <p><i>Currently, a maximum of 10 stack set operations in <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code> status can exist in one stack set.</i></p> |

**Status code: 400**

**Table 2-561** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-562** Detail

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

**Status code: 401**

**Table 2-563** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-564** Detail

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

**Status code: 403**

**Table 2-565** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-566** Detail

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

**Status code: 404**

**Table 2-567** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-568** Detail

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

**Status code: 429**

**Table 2-569** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-570** Detail

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

**Status code: 500****Table 2-571** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-572** 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

- 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.

## URI

GET `/v1/stack-sets/{stack_set_name}/stack-instances`

**Table 2-573** Path Parameters

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                            |
|-----------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>stack_set_name</code> | Yes       | String | Stack set name. The name is unique within its domain ( <code>domain_id</code> ) and region. Only letters, digits, underscores ( <code>_</code> ), and hyphens ( <code>-</code> ) are allowed. The name is case-sensitive and must start with a letter. |

**Table 2-574** Query Parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id | No        | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack set is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |



| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| filter    | No        | String           | <p>Filter condition.</p> <ul style="list-style-type: none"> <li>• The AND operator is defined by commas (,).</li> <li>• The OR operator is defined using a vertical bar ( ). The OR operator has a higher priority than the AND operator.</li> <li>• Parentheses are not supported.</li> <li>• The filter operator only supports the equal sign (=).</li> <li>• The filter parameter name and value can contain only letters, digits, and underscores (_).</li> <li>• Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid.</li> <li>• 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.</li> </ul> |
| sort_key  | No        | Array of strings | Sorting field. Only create_time is supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| sort_dir  | No        | Array of strings | <p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> <li>• <i>asc</i>. ascending order</li> <li>• <i>desc</i>. descending order</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-575** 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 2-576** Response body parameters

| Parameter       | Type                                           | Description          |
|-----------------|------------------------------------------------|----------------------|
| stack_instances | Array of <a href="#">StackInstance</a> objects | Stack instance list. |

**Table 2-577** StackInstance

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id   | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_set_name | String | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status         | String | Stack instance status can be: <ul style="list-style-type: none"><li>• <i>WAIT_IN_PROGRESS</i>: The stack instance is waiting for operation.</li><li>• <i>CANCEL_COMPLETE</i> - The stack instance operation is canceled.</li><li>• <i>OPERATION_IN_PROGRESS</i>: The stack instance operation is in progress.</li><li>• <i>OPERATION_FAILED</i>: The stack instance operation failed.</li><li>• <i>INOPERABLE</i> - The stack instance cannot be operated.</li><li>• <i>OPERATION_COMPLETE</i>: The stack instance operation is complete.</li></ul>                                                                                                                                           |
| 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.<br>It is a UUID generated by RFS when a stack is created.<br>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.<br>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.<br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter                     | Type   | Description                                                                                                                                     |
|-------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>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.                  |
| 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.                  |

**Status code: 400****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 <a href="#">Detail</a> 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: 401**

**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 <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-581** Detail

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

**Status code: 403**

**Table 2-582** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-583** Detail

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

**Status code: 404**

**Table 2-584** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-585** Detail

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

**Status code: 429**

**Table 2-586** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-587** Detail

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

**Status code: 500**

**Table 2-588** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

## 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",
 }
]
```



```
"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"
}]
}
```

## 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.

- 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 2-590** 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 2-591** 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 2-592** Request body parameters

| Parameter          | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id       | No        | String                           | <p>Unique ID of a stack set. It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | Yes       | <b>deployment_targets</b> object | Deployment target information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter     | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|-----------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| var_overrides | No        | <a href="#">var_overrides</a> object | <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.)</p> <p>In a new update, existing variables cannot be retained. Instead, all existing variables should be overridden.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>through replacement. The new variables assigned by you override related variables in the specified stack instance.</p> <p>All variable sets declared in <code>vars_body</code>, <code>vars_uri</code>, and <code>use_stack_set_vars</code> 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.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• To override a specified variable value, specify the name and value of the variable to be overridden in <code>vars_uri</code> or <code>vars_body</code>.</li> <li>• 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 <code>use_stack_set_vars</code>. <ul style="list-style-type: none"> <li>- 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 <code>use_stack_set_vars</code>.</li> <li>- To use the variable values recorded in the current stack instance for deployment, <code>var_overrides</code> are not required.</li> </ul> </li> </ul> |

| Parameter             | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation_preferences | No        | <a href="#">operation_preferences</a> object | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs:<br/>CreateStackInstance,<br/>DeployStackSet,<br/>UpdateStackInstance,<br/>DeleteStackInstance.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>- <code>SELF</code> - Invoked as to the management account.</li> <li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |



**Table 2-593** deployment\_targets

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| regions   | Yes       | Array of strings | <p>Regions involved in the stack set operations are specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> |

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids | No        | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none"><li>• 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. *</li></ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids_uri | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | No        | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_id_filter_type | No        | String | <p>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.</p> <ul style="list-style-type: none"> <li>• <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>UNION</i> - 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.</li> <li>• <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can</li> </ul> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | not specify domain_ids or domain_ids_uri. |

**Table 2-594** var\_overrides

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_uri  | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> <li>vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported.</li> <li>RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> </ul> <p>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.</p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.</li> </ul> |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_body          | No        | String           | <p>Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes.</p> <ul style="list-style-type: none"> <li>• The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body.</li> <li>• RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> <li>• If vars_body is too large, you can use vars_uri.</li> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.</li> </ul> |
| use_stack_set_vars | No        | Array of strings | <p>Names of the variables whose values are recorded in the stack set and expected to be used for deployment.</p> <p>You can select only the variables that have been recorded in the stack set. Otherwise, error code 400 is returned.</p> <p>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.</p>                                                                                                                                                                                                                       |



**Table 2-595** operation\_preferences

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| region_concurrency_type | No        | String           | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"><li>• <i>SEQUENTIAL</i>: 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.</li><li>• <i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently.</li></ul> |
| region_order            | No        | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p>                                                                                                                                                                             |

| Parameter               | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_count | No        | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>If the value of <code>region_concurrency_type</code> is <code>SEQUENTIAL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, all other instances that are still in <code>WAIT_IN_PROGRESS</code> status will be canceled. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>;</p> <p>If the value of <code>region_concurrency_type</code> is <code>PARALLEL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, the stack set only cancels all instances that are still in <code>WAIT_IN_PROGRESS</code> status in this region. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>.</p> <p>Stack instances that are in <code>OPERATION_IN_PROGRESS</code> status or have been deployed (that is, in <code>OPERATION_COMPLETE</code> or <code>OPERATION_FAILED</code> status) are not affected.</p> <p>Only one of <code>failure_tolerance_count</code> and <code>failure_tolerance_percentage</code> can exist.</p> |

| Parameter                    | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_percentage | No        | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p>                                                                                                                                                                         |
| max_concurrent_count         | No        | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter                 | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_concurrent_percentage | No        | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_mode | No        | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li> <p><b>STRICT_FAILURE_TOLERANCE</b>: 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.</p> </li> <li> <p>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.</p> </li> <li> <p><b>SOFT_FAILURE_TOLERANCE</b>: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual</p> </li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the <code>max_concurrent_count</code>, or <code>max_concurrent_percentage</code>.</p> <ul style="list-style-type: none"> <li>This option does not ensure the number of failed stack instances is less than <code>failure_tolerance_count + 1</code>. If <code>failure_tolerance_percentage</code> is specified, this option does not ensure the number of failed stack instances is less than the result of <code>max_concurrent_percentage</code> multiplied by the number of stack instances.</li> </ul> |

## Response Parameters

Status code: 202

Table 2-596 Response body parameters

| Parameter                           | Type   | Description                                                                                              |
|-------------------------------------|--------|----------------------------------------------------------------------------------------------------------|
| <code>stack_set_operation_id</code> | 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 2-597 Response body parameters

| Parameter               | Type   | Description       |
|-------------------------|--------|-------------------|
| <code>error_code</code> | String | Response code.    |
| <code>error_msg</code>  | String | Response message. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-598** Detail

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

**Status code: 401**

**Table 2-599** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-600** Detail

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

**Status code: 403**

**Table 2-601** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-602** Detail

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

**Status code: 404****Table 2-603** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-604** Detail

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

**Status code: 429**



**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 <a href="#">Detail</a> 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: 500**

**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 <a href="#">Detail</a> 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. |

## Example Requests

- Assign member account information through the array of domain IDs. Stack instances are created in sequential mode among regions.

```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances
{
 "deployment_targets": {
 "regions": ["cn-north-7"],
 "domain_ids": ["6cbcca2a2f114a63841bdb7a19b7b12", "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.ulanhqab.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.<br>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.                                                                                                                 |

## 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 2-609** 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 2-610** 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 2-611** Request body parameters

| Parameter          | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id       | No        | String                           | <p>Unique ID of a stack set. It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | Yes       | <b>deployment_targets</b> object | Deployment target information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter             | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation_preferences | No        | <a href="#">operation_preferences</a> object | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs:<br/>CreateStackInstance,<br/>DeployStackSet,<br/>UpdateStackInstance,<br/>DeleteStackInstance.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>- <code>SELF</code> - Invoked as to the management account.</li> <li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

**Table 2-612** deployment\_targets

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| regions   | Yes       | Array of strings | Regions involved in the stack set operations are specified by the user. <ul style="list-style-type: none"><li>• 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. *</li></ul> |

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids | No        | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |



| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids_uri | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | No        | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_id_filter_type | No        | String | <p>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.</p> <ul style="list-style-type: none"> <li>• <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>UNION</i> - 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.</li> <li>• <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can</li> </ul> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | not specify domain_ids or domain_ids_uri. |

**Table 2-613** operation\_preferences

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| region_concurrency_type | No        | String           | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li><i>SEQUENTIAL</i>: 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.</li> <li><i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently.</li> </ul> |
| region_order            | No        | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p>                                                                                                                                                                            |

| Parameter               | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_count | No        | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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;</p> <p>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.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p> |

| Parameter                    | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_percentage | No        | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p>                                                                                                                                                                         |
| max_concurrent_count         | No        | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter                 | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_concurrent_percentage | No        | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |



| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_mode | No        | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li> <p><b>STRICT_FAILURE_TOLERANCE</b>: 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.</p> </li> <li> <p>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.</p> </li> <li> <p><b>SOFT_FAILURE_TOLERANCE</b>: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual</p> </li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the <code>max_concurrent_count</code>, or <code>max_concurrent_percentage</code>.</p> <ul style="list-style-type: none"> <li>This option does not ensure the number of failed stack instances is less than <code>failure_tolerance_count + 1</code>. If <code>failure_tolerance_percentage</code> is specified, this option does not ensure the number of failed stack instances is less than the result of <code>max_concurrent_percentage</code> multiplied by the number of stack instances.</li> </ul> |

## Response Parameters

Status code: 202

**Table 2-614** Response body parameters

| Parameter                           | Type   | Description                                                                                              |
|-------------------------------------|--------|----------------------------------------------------------------------------------------------------------|
| <code>stack_set_operation_id</code> | 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 2-615** Response body parameters

| Parameter               | Type   | Description       |
|-------------------------|--------|-------------------|
| <code>error_code</code> | String | Response code.    |
| <code>error_msg</code>  | String | Response message. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 401**

**Table 2-617** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-618** Detail

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

**Status code: 403**

**Table 2-619** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-620** Detail

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

**Status code: 404**

**Table 2-621** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-622** Detail

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

**Status code: 429**

**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 <a href="#">Detail</a> 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. |

**Status code: 500**

**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 <a href="#">Detail</a> 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. |

**Example Requests**

- Assign member account information through the URL signed by domain IDs. Stack instances are deleted in sequential 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_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.<br>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.                                                                                                                 |

## 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 2-627** Path Parameters

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                            |
|-----------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>stack_set_name</code> | Yes       | String | Stack set name. The name is unique within its domain ( <code>domain_id</code> ) and region. Only letters, digits, underscores ( <code>_</code> ), and hyphens ( <code>-</code> ) are allowed. The name is case-sensitive and must start with a letter. |

## Request Parameters

**Table 2-628** 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 2-629** Request body parameters

| Parameter          | Mandatory | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|-----------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id       | No        | String                                    | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | Yes       | <a href="#">deployment_targets</a> object | Deployment target information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



| Parameter     | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| var_overrides | No        | <a href="#">var_overrides</a> object | <p>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.</p> <p>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 <code>DeployStackSet</code> API to update the variable set (vars) recorded in the stack set. After the stack set variable set (vars) is updated through the <code>DeployStackSet</code> API, the overridden variables in the stack instance are not updated and the overridden values are retained.</p> <p>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 <code>DeployStackSet</code> API to update the vars recorded in the stack set and explicitly define related variables in the vars.</p> <p>Each time a user use the <code>DeployStackSet</code> API to update the vars of the stack set, error code 400 is returned for loss of the overridden variables</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.)</p> <p>In a new update, existing variables cannot be retained. Instead, all existing variables should be overridden.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>through replacement. The new variables assigned by you override related variables in the specified stack instance.</p> <p>All variable sets declared in <code>vars_body</code>, <code>vars_uri</code>, and <code>use_stack_set_vars</code> 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.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• To override a specified variable value, specify the name and value of the variable to be overridden in <code>vars_uri</code> or <code>vars_body</code>.</li> <li>• 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 <code>use_stack_set_vars</code>. <ul style="list-style-type: none"> <li>- 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 <code>use_stack_set_vars</code>.</li> <li>- To use the variable values recorded in the current stack instance for deployment, <code>var_overrides</code> are not required.</li> </ul> </li> </ul> |

| Parameter             | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation_preferences | No        | <a href="#">operation_preferences</a> object | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs:<br/>CreateStackInstance,<br/>DeployStackSet,<br/>UpdateStackInstance,<br/>DeleteStackInstance.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>- <code>SELF</code> - Invoked as to the management account.</li> <li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

**Table 2-630** deployment\_targets

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| regions   | Yes       | Array of strings | <p>Regions involved in the stack set operations are specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> |

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids | No        | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids_uri | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |



| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | No        | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_id_filter_type | No        | String | <p>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.</p> <ul style="list-style-type: none"> <li>• <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>UNION</i> - 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.</li> <li>• <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can</li> </ul> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | not specify domain_ids or domain_ids_uri. |

**Table 2-631** var\_overrides

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_uri  | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> <li>vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported.</li> <li>RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> </ul> <p>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.</p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.</li> </ul> |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_body          | No        | String           | <p>Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes.</p> <ul style="list-style-type: none"> <li>• The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body.</li> <li>• RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> <li>• If vars_body is too large, you can use vars_uri.</li> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.</li> </ul> |
| use_stack_set_vars | No        | Array of strings | <p>Names of the variables whose values are recorded in the stack set and expected to be used for deployment.</p> <p>You can select only the variables that have been recorded in the stack set. Otherwise, error code 400 is returned.</p> <p>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.</p>                                                                                                                                                                                                                       |

**Table 2-632** operation\_preferences

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| region_concurrency_type | No        | String           | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li>• <i>SEQUENTIAL</i>: 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.</li> <li>• <i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently.</li> </ul> |
| region_order            | No        | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p>                                                                                                                                                                                |

| Parameter               | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_count | No        | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>If the value of <code>region_concurrency_type</code> is <code>SEQUENTIAL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, all other instances that are still in <code>WAIT_IN_PROGRESS</code> status will be canceled. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>;</p> <p>If the value of <code>region_concurrency_type</code> is <code>PARALLEL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, the stack set only cancels all instances that are still in <code>WAIT_IN_PROGRESS</code> status in this region. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>.</p> <p>Stack instances that are in <code>OPERATION_IN_PROGRESS</code> status or have been deployed (that is, in <code>OPERATION_COMPLETE</code> or <code>OPERATION_FAILED</code> status) are not affected.</p> <p>Only one of <code>failure_tolerance_count</code> and <code>failure_tolerance_percentage</code> can exist.</p> |

| Parameter                    | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_percentage | No        | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p>                                                                                                                                                                         |
| max_concurrent_count         | No        | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |



| Parameter                 | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_concurrent_percentage | No        | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_mode | No        | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li> <p><b>STRICT_FAILURE_TOLERANCE</b>: 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.</p> </li> <li> <p>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.</p> </li> <li> <p><b>SOFT_FAILURE_TOLERANCE</b>: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual</p> </li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the <code>max_concurrent_count</code>, or <code>max_concurrent_percentage</code>.</p> <ul style="list-style-type: none"> <li>This option does not ensure the number of failed stack instances is less than <code>failure_tolerance_count + 1</code>. If <code>failure_tolerance_percentage</code> is specified, this option does not ensure the number of failed stack instances is less than the result of <code>max_concurrent_percentage</code> multiplied by the number of stack instances.</li> </ul> |

## Response Parameters

Status code: 202

Table 2-633 Response body parameters

| Parameter                           | Type   | Description                                                                                              |
|-------------------------------------|--------|----------------------------------------------------------------------------------------------------------|
| <code>stack_set_operation_id</code> | 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 2-634 Response body parameters

| Parameter               | Type   | Description       |
|-------------------------|--------|-------------------|
| <code>error_code</code> | String | Response code.    |
| <code>error_msg</code>  | String | Response message. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-635** Detail

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

**Status code: 401**

**Table 2-636** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-637** Detail

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

**Status code: 403**

**Table 2-638** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-639** Detail

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

**Status code: 404**

**Table 2-640** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-641** Detail

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

**Status code: 429**

**Table 2-642** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 500**

**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 <a href="#">Detail</a> 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. |

## 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-bddb-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-bddb-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.<br>2. The stack set status is invalid. Parallel operations are not allowed. |

| 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 2-646** 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 2-647** 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 2-648** Request body parameters

| Parameter          | Mandatory | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|-----------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id       | No        | String                                    | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | Yes       | <a href="#">deployment_targets</a> object | Deployment target information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter             | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation_preferences | No        | <a href="#">operation_preferences</a> object | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs:<br/>CreateStackInstance,<br/>DeployStackSet,<br/>UpdateStackInstance,<br/>DeleteStackInstance.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>- <code>SELF</code> - Invoked as to the management account.</li> <li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

**Table 2-649** deployment\_targets

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| regions   | Yes       | Array of strings | Regions involved in the stack set operations are specified by the user. <ul style="list-style-type: none"><li>• 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. *</li></ul> |

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids | No        | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids_uri | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | No        | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |



| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_id_filter_type | No        | String | <p>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.</p> <ul style="list-style-type: none"> <li>• <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>UNION</i> - 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.</li> <li>• <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can</li> </ul> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | not specify domain_ids or domain_ids_uri. |

**Table 2-650** operation\_preferences

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| region_concurrency_type | No        | String           | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li>• <i>SEQUENTIAL</i>: 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.</li> <li>• <i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently.</li> </ul> |
| region_order            | No        | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p>                                                                                                                                                                                |

| Parameter               | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_count | No        | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>If the value of <code>region_concurrency_type</code> is <code>SEQUENTIAL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, all other instances that are still in <code>WAIT_IN_PROGRESS</code> status will be canceled. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>;</p> <p>If the value of <code>region_concurrency_type</code> is <code>PARALLEL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, the stack set only cancels all instances that are still in <code>WAIT_IN_PROGRESS</code> status in this region. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>.</p> <p>Stack instances that are in <code>OPERATION_IN_PROGRESS</code> status or have been deployed (that is, in <code>OPERATION_COMPLETE</code> or <code>OPERATION_FAILED</code> status) are not affected.</p> <p>Only one of <code>failure_tolerance_count</code> and <code>failure_tolerance_percentage</code> can exist.</p> |

| Parameter                    | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_percentage | No        | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p>                                                                                                                                                                         |
| max_concurrent_count         | No        | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter                 | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_concurrent_percentage | No        | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_mode | No        | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li> <p><b>STRICT_FAILURE_TOLERANCE</b>: 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.</p> </li> <li> <p>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.</p> </li> <li> <p><b>SOFT_FAILURE_TOLERANCE</b>: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual</p> </li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the <code>max_concurrent_count</code>, or <code>max_concurrent_percentage</code>.</p> <ul style="list-style-type: none"> <li>This option does not ensure the number of failed stack instances is less than <code>failure_tolerance_count + 1</code>. If <code>failure_tolerance_percentage</code> is specified, this option does not ensure the number of failed stack instances is less than the result of <code>max_concurrent_percentage</code> multiplied by the number of stack instances.</li> </ul> |

## Response Parameters

Status code: 202

Table 2-651 Response body parameters

| Parameter                           | Type   | Description                                                                                              |
|-------------------------------------|--------|----------------------------------------------------------------------------------------------------------|
| <code>stack_set_operation_id</code> | 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 2-652 Response body parameters

| Parameter               | Type   | Description       |
|-------------------------|--------|-------------------|
| <code>error_code</code> | String | Response code.    |
| <code>error_msg</code>  | String | Response message. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 401**

**Table 2-654** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-655** Detail

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

**Status code: 403**

**Table 2-656** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |



| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-657** Detail

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

**Status code: 404**

**Table 2-658** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-659** Detail

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

**Status code: 429**

**Table 2-660** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 500**

**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 <a href="#">Detail</a> 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. |

## Example Requests

- Assign member account information through the URL signed by domain IDs. Stack instances are deleted in sequential 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_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.<br>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.                                                                                                                 |

## 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 2-664** 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 2-665** 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 2-666** Request body parameters

| Parameter          | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id       | No        | String                           | <p>Unique ID of a stack set. It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | Yes       | <b>deployment_targets</b> object | Deployment target information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| template_body      | No        | String                           | <p>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.</p> <p>You can specify either template_body or template_uri, not both.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext.</li> </ul>                                                                                                                                                                                                                                                                                                                        |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| template_uri | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <p>The corresponding file must be a tf file or a zip package.</p> <p>A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded.</p> <p>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.</p> <p>You can specify either template_body or template_uri, not both.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to template_uri as plaintext. <ul style="list-style-type: none"> <li>- 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</li> </ul> </li> </ul> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |        | the .zip package cannot exceed 1 MB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| vars_uri  | No        | String | <p>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.</p> <p>Ensure that the OBS address is located in the same region as the RFS.</p> <ul style="list-style-type: none"> <li>vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported.</li> <li>RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> </ul> <p>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.</p> <ul style="list-style-type: none"> <li>Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext.</li> </ul> |

| Parameter             | Mandatory | Type                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vars_body             | No        | String                              | <p>Content of the HCL variable file. Transferring parameters is supported by the HCL template. The same template can use different parameters for different purposes.</p> <ul style="list-style-type: none"> <li>• The vars_body uses the tfvars format of HCL. You can submit the content in the .tfvars file to the vars_body.</li> <li>• RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported.</li> <li>• If vars_body is too large, you can use vars_uri.</li> <li>• Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores vars_body as plaintext.</li> </ul> |
| operation_preferences | No        | <b>operation_preferences</b> object | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs:<br/>CreateStackInstance,<br/>DeployStackSet,<br/>UpdateStackInstance,<br/>DeleteStackInstance.</p>                      |



| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"><li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.*<ul style="list-style-type: none"><li>- <code>SELF</code> - Invoked as to the management account.</li><li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li></ul></li></ul> |

**Table 2-667** deployment\_targets

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| regions   | Yes       | Array of strings | <p>Regions involved in the stack set operations are specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> |

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids | No        | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_ids_uri | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>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. *</li> </ul> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| organizational_unit_ids | No        | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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). *</li> <li>• [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. *</li> </ul> <p>To deploy or delete resource stack instances (including DeployStackSet, UpdateStackInstances,</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_id_filter_type | No        | String | <p>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.</p> <ul style="list-style-type: none"> <li>• <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both.</li> <li>• <i>UNION</i> - 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.</li> <li>• <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can</li> </ul> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | not specify domain_ids or domain_ids_uri. |

**Table 2-668** operation\_preferences

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| region_concurrency_type | No        | String           | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li><i>SEQUENTIAL</i>: 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.</li> <li><i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently.</li> </ul> |
| region_order            | No        | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p>                                                                                                                                                                            |



| Parameter               | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_count | No        | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>If the value of <code>region_concurrency_type</code> is <code>SEQUENTIAL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, all other instances that are still in <code>WAIT_IN_PROGRESS</code> status will be canceled. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>;</p> <p>If the value of <code>region_concurrency_type</code> is <code>PARALLEL</code>, when the number of stack instances that deploy failed in a region exceeds the <code>failure_tolerance_count</code>, the stack set only cancels all instances that are still in <code>WAIT_IN_PROGRESS</code> status in this region. The status of the canceled instance changes to <code>CANCEL_COMPLETE</code>.</p> <p>Stack instances that are in <code>OPERATION_IN_PROGRESS</code> status or have been deployed (that is, in <code>OPERATION_COMPLETE</code> or <code>OPERATION_FAILED</code> status) are not affected.</p> <p>Only one of <code>failure_tolerance_count</code> and <code>failure_tolerance_percentage</code> can exist.</p> |

| Parameter                    | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_percentage | No        | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p>                                                                                                                                                                         |
| max_concurrent_count         | No        | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter                 | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_concurrent_percentage | No        | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| failure_tolerance_mode | No        | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> <li> <p><b>STRICT_FAILURE_TOLERANCE</b>: 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.</p> </li> <li> <p>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.</p> </li> <li> <p><b>SOFT_FAILURE_TOLERANCE</b>: This option separates failure_tolerance_count (failure_tolerance_percentage) from the actual</p> </li> </ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>maximum number of concurrent accounts. This option allows actual maximum number of concurrent accounts to keep at the concurrency level set by the <code>max_concurrent_count</code>, or <code>max_concurrent_percentage</code>.</p> <ul style="list-style-type: none"> <li>This option does not ensure the number of failed stack instances is less than <code>failure_tolerance_count + 1</code>. If <code>failure_tolerance_percentage</code> is specified, this option does not ensure the number of failed stack instances is less than the result of <code>max_concurrent_percentage</code> multiplied by the number of stack instances.</li> </ul> |

## Response Parameters

Status code: 202

**Table 2-669** Response body parameters

| Parameter                           | Type   | Description                                                                                              |
|-------------------------------------|--------|----------------------------------------------------------------------------------------------------------|
| <code>stack_set_operation_id</code> | 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 2-670** Response body parameters

| Parameter               | Type   | Description       |
|-------------------------|--------|-------------------|
| <code>error_code</code> | String | Response code.    |
| <code>error_msg</code>  | String | Response message. |

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 401**

**Table 2-672** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-673** Detail

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

**Status code: 403**

**Table 2-674** Response body parameters

| Parameter  | Type   | Description    |
|------------|--------|----------------|
| error_code | String | Response code. |

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-675** Detail

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

**Status code: 404**

**Table 2-676** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-677** Detail

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

**Status code: 409**

**Table 2-678** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-679** Detail

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

**Status code: 429**

**Table 2-680** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-681** Detail

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

**Status code: 500**



**Table 2-682** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-683** 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"
}
```

## 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.<br>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}

**Table 2-684** 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 2-685** Query Parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id | No        | String | <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>SELF - Invoked as the management account.</li> <li>DELEGATED_ADMIN - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

## Request Parameters

**Table 2-686** 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: 400**

**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 <a href="#">Detail</a> 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: 401**

**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 <a href="#">Detail</a> 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. |

**Status code: 403**

**Table 2-691** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-692** Detail

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

**Status code: 429**

**Table 2-693** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-694** Detail

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

**Status code: 500**

**Table 2-695** Response body parameters

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

**Table 2-696** 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
- 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.<br>2. The stack set cannot be deleted. |
| 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`, `permission_model`, `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`.
- Currently, only `SELF_MANAGED` permissions can be updated.
- 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 2-697** Path Parameters

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                            |
|-----------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>stack_set_name</code> | Yes       | String | Stack set name. The name is unique within its domain ( <code>domain_id</code> ) and region. Only letters, digits, underscores ( <code>_</code> ), and hyphens ( <code>-</code> ) are allowed. The name is case-sensitive and must start with a letter. |

### Request Parameters

**Table 2-698** Request header parameters

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



**Table 2-699** Request body parameters

| Parameter                 | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| stack_set_id              | No        | String | <p>Unique ID of a stack set. It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_set_description     | No        | String | <p>Description of a stack set. It can be used by customers to identify their own stack sets.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| initial_stack_description | No        | String | <p>Description of stacks that is being initialized. It can be used to identify stacks managed by a stack set.</p> <p>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.</p> <p>If the stack set description is updated later, the managed stack description will not be updated synchronously.</p>                                                                                                                                                                                                                                                                                                                            |

| Parameter                  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_agency_name | No        | String | <p>Administration agency names. RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>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.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |

| Parameter           | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| managed_agency_name | No        | String | <p>Name of the managed agency. RFS uses this agency to obtain the permissions required for deploying resources.</p> <p>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.</p> <p>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.</p> |

| Parameter          | Mandatory | Type                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| administration_urn | No        | String                          | <p>Administration agency URNs. RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_urn, but not both.</p> <p>You are advised to specify administration_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.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |
| managed_operation  | No        | <b>managed_operation</b> object | A set of properties used to manage the stack set operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| call_identity | No        | String | <p>This parameter is only supported when the stack set permission model is <code>SERVICE_MANAGED</code>. 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, <code>SELF</code> is specified.</p> <p>Use <code>SELF</code> for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> <li>• No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> <li>- <code>SELF</code> - Invoked as to the management account.</li> <li>- <code>DELEGATED_ADMIN</code> - Invoked as a delegated administrator account. User account must be registered as a delegated administrator in the management account.</li> </ul> </li> </ul> |

**Table 2-700** managed\_operation

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_parallel_operation | No        | Boolean | <p>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.</p> <p>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 <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code> status can be processed.</p> <p>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.</p> <p>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.</p> <p>When the stack set is in <code>OPERATION_IN_PROGRESS</code> status, this parameter is not allowed to be modified by UpdateStackSet API.</p> <p><i>Currently, a maximum of 10 stack set operations in <code>QUEUE_IN_PROGRESS</code> or <code>OPERATION_IN_PROGRESS</code></i></p> |

| Parameter | Mandatory | Type | Description                               |
|-----------|-----------|------|-------------------------------------------|
|           |           |      | <i>status can exist in one stack set.</i> |

## Response Parameters

**Status code: 400**

**Table 2-701** Response body parameters

| Parameter                     | Type                                    | Description                                                            |
|-------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                    | String                                  | Response code.                                                         |
| error_msg                     | String                                  | Response message.                                                      |
| encoded_authorization_message | String                                  | The message contains information about unauthorized requests.          |
| details                       | Array of <a href="#">Detail</a> 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: 401**

**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 <a href="#">Detail</a> 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: 403**

**Table 2-705** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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: 404**

**Table 2-707** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> 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. |

**Status code: 409**

**Table 2-709** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-710** Detail

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

**Status code: 429**

**Table 2-711** Response body parameters

| Parameter                  | Type                                    | Description                                                            |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------|
| error_code                 | String                                  | Response code.                                                         |
| error_msg                  | String                                  | Response message.                                                      |
| encoded_authorized_message | String                                  | The message contains information about unauthorized requests.          |
| details                    | Array of <a href="#">Detail</a> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-712** Detail

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

**Status code: 500**

**Table 2-713** Response body parameters

| Parameter                  | Type                           | Description                                                            |
|----------------------------|--------------------------------|------------------------------------------------------------------------|
| error_code                 | String                         | Response code.                                                         |
| error_msg                  | String                         | Response message.                                                      |
| encoded_authorized_message | String                         | The message contains information about unauthorized requests.          |
| details                    | Array of <b>Detail</b> objects | Detailed error messages returned by service when permission is denied. |

**Table 2-714** 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",
```

- ```
"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

Table 2-715 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 2-716 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. |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| call_identity | No | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> 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 2-717 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 2-718 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. |

| Parameter | Type | Description |
|----------------|--------|--|
| status | String | <p>The stack set operation status can be:</p> <ul style="list-style-type: none"> • <i>QUEUE_IN_PROGRESS</i>: The operation is in queue. • <i>OPERATION_IN_PROGRESS</i>: The operation is in progress. • <i>OPERATION_COMPLETE</i>: The operation is complete. • <i>OPERATION_FAILED</i>: The operation failed. • <i>STOP_IN_PROGRESS</i>: The operation is being stopped. • <i>STOP_COMPLETE</i> - The operation stopped. <ul style="list-style-type: none"> - <i>STOP_FAILED</i>: Failed to stop the operation. |
| status_message | String | <p>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.</p> <p>To view failure details, use the ListStackInstances API to obtain status_message of the stack instance.</p> |
| action | String | <p>Current operation of the user can be:</p> <ul style="list-style-type: none"> • <i>CREATE_STACK_INSTANCES</i>: Create a stack instance. • <i>DELETE_STACK_INSTANCES</i>: Delete a stack instance. • <i>DEPLOY_STACK_SET</i>: Deploy a stack set. • <i>DEPLOY_STACK_INSTANCES</i>: Deploy a stack instance. |

| Parameter | Type | Description |
|----------------------------|--------|--|
| administration_agency_name | String | <p>Administration agency names.</p> <p>RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>You are advised to specify administration_agency_urn when using a trust agency.</p> <p>administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |

| Parameter | Type | Description |
|---------------------------|---|---|
| administration_agency_urn | String | <p>Administration agency URNs.</p> <p>RFS uses this agency to obtain permissions that a member account grants to a management account.</p> <p>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.</p> <p>When you define SELF_MANAGED permissions, you must specify either administration_agency_name or administration_agency_urn, but not both.</p> <p>You are advised to specify administration_agency_urn when using a trust agency.</p> <p>administration_agency_name only receives agency names. If trust agency names are assigned to administration_agency_name, template fails to be deployed.</p> <p>Do not specify this parameter when SERVICE_MANAGED permissions are used. Otherwise, error code 400 is returned.</p> |
| managed_agency_name | String | <p>Name of the managed agency.</p> <p>RFS uses this agency to obtain the permissions required for deploying resources.</p> <p>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.</p> <p>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.</p> |
| deployment_targets | deployment_targets object | Deployment target information. |

| 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 | <p>The user-specified preferences for how to perform a stack set operation. This parameter takes effect only in a specified single operation.</p> <p>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.</p> <p>This parameter can be specified in the following APIs: CreateStackInstance, DeployStackSet, UpdateStackInstance, DeleteStackInstance.</p> |

Table 2-719 deployment_targets

| Parameter | Type | Description |
|-----------|------------------|--|
| regions | Array of strings | <p>Regions involved in the stack set operations are specified by the user.</p> <ul style="list-style-type: none"> 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 | Type | Description |
|------------|------------------|--|
| domain_ids | Array of strings | <p>When the stack set permission model is SELF_MANAGED, the domain IDs involved in this operation is specified by the user.</p> <ul style="list-style-type: none">• 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. * <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter | Type | Description |
|----------------|--------|--|
| domain_ids_uri | String | <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> 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. <p>*</p> <p>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.</p> <p>You can specify either domain_ids or domain_ids_uri, but not both.</p> |

| Parameter | Type | Description |
|-------------------------|------------------|--|
| organizational_unit_ids | Array of strings | <p>Organizational Unit (OU) IDs list. This parameter is only allowed to be specified when the stack set permission model is SERVICE_MANAGED.</p> <p>The list of organizational_unit_ids, it can be the root organization (Root) ID or the ID of organizational units.</p> <p>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.</p> <ul style="list-style-type: none"> • 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. * <p>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.</p> <p>This parameter must be specified in the DeleteStackInstances API.</p> |

| Parameter | Type | Description |
|-----------|------|--|
| | | <p>You can call ShowStackSetMetadata API to get the OU IDs specified by CreateStackInstances API request.</p> <p>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.</p> <p><i>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.</i></p> |

| Parameter | Type | Description |
|-----------------------|--------|--|
| domain_id_filter_type | String | <p>Domain IDs filter type. This parameter is only supported when stack set permission model is SERVICE_MANAGED. By default, NONE is specified.</p> <p>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.</p> <ul style="list-style-type: none"> • <i>INTERSECTION</i> - Select specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. • <i>DIFFERENCE</i> - Exclude specified accounts from the OUs in deployment target for deployment. You can specify either domain_ids or domain_ids_uri, but not both. • <i>UNION</i> - 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. • <i>NONE</i> - Only deploy to all accounts from the OUs in deployment target. You can not specify domain_ids or domain_ids_uri. |

Table 2-720 operation_preferences

| Parameter | Type | Description |
|-------------------------|------------------|--|
| region_concurrency_type | String | <p>The concurrency type of deploying stack instances in regions. The value can be SEQUENTIAL (default) or PARALLEL. The value is case-sensitive.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> • <i>SEQUENTIAL</i>: 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. • <i>PARALLEL</i>: Stack instances are deployed in all specified regions concurrently. |
| region_order | Array of strings | <p>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.</p> <p>If this parameter is not specified, the region deployment order is random. The region_order takes effect only during a specified single operation.</p> |

| Parameter | Type | Description |
|------------------------------|------|---|
| failure_tolerance_count | Long | <p>The maximum number of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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;</p> <p>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.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p> |
| failure_tolerance_percentage | Long | <p>The maximum percentage of failed stack instances in a region. The value must be 0 or a positive integer. The default value is 0.</p> <p>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.</p> <p>Only one of failure_tolerance_count and failure_tolerance_percentage can exist.</p> |

| Parameter | Type | Description |
|---------------------------|------|--|
| max_concurrent_count | Long | <p>The maximum number of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |
| max_concurrent_percentage | Long | <p>The maximum percentage of concurrent accounts can be deployed in a region. The value must be a positive integer. The default value is 1.</p> <p>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.</p> <p>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.</p> <p>Only one of max_concurrent_count and max_concurrent_percentage can exist.</p> |

| Parameter | Type | Description |
|------------------------|--------|--|
| failure_tolerance_mode | String | <p>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.</p> <p>Detailed introduction:</p> <ul style="list-style-type: none"> • <i>STRICT_FAILURE_TOLERANCE</i>: 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. • <i>SOFT_FAILURE_TOLERANCE</i>: 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 + |

| 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 2-721 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: 401

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: 403

Table 2-725 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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: 404

Table 2-727 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_message | String | 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. |

Status code: 429

Table 2-729 Response body parameters

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

Table 2-730 Detail

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

Status code: 500

Table 2-731 Response body parameters

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

Table 2-732 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. |

| 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 2-733 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). |

Table 2-734 Query Parameters

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|--|
| stack_set_id | No | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack set is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| call_identity | No | String | <p>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.</p> <p>Use SELF for stack sets with self-managed permissions.</p> <ul style="list-style-type: none"> No matter what call identity is specified, the stack set involved in request is always belonging to management account.* <ul style="list-style-type: none"> 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 2-735 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 2-736 Response body parameters

| Parameter | Type | Description |
|----------------|--------|--|
| stack_set_id | String | <p>Unique ID of a stack set.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| stack_set_name | String | <p>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.</p> |
| status | String | <p>Stack instance status can be:</p> <ul style="list-style-type: none"> • <i>WAIT_IN_PROGRESS</i>: The stack instance is waiting for operation. • <i>CANCEL_COMPLETE</i> - The stack instance operation is canceled. • <i>OPERATION_IN_PROGRESS</i>: The stack instance operation is in progress. • <i>OPERATION_FAILED</i>: The stack instance operation failed. • <i>INOPERABLE</i> - The stack instance cannot be operated. • <i>OPERATION_COMPLETE</i>: The stack instance operation is complete. |

| 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 | <p>Unique stack ID.</p> <p>It is a UUID generated by RFS when a stack is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| 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 | <p>Stack set operation ID for the latest deployment of the stack instance.</p> <p>It is a UUID generated by RFS when a stack set operation is created.</p> |
| 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. |

| 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 2-737 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. <ul style="list-style-type: none">• 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

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: 401

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: 403

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. |

Status code: 404

Table 2-744 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-745 Detail

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

Status code: 429

Table 2-746 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-747 Detail

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

Status code: 500**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. |

Example Requests

Obtain details about the stack instance whose region is cn-north-7 and domain_id is my-domain-id.

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 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.

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}"  
        }  
      ]  
    }  
  }  
}
```

When RFS supports users to use the HTTP 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 HTTP 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 HTTP 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 HTTP 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:

`method_name`: RFS expects the gRPC method name invoked in FG's HTTP 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 HTTP 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:

```
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 HTTP 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.

`config_data`: Used for initialization before provider handles actual requests. If the `config_data` in the context is not empty, FG's HTTP 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.

3. The request response implemented in FG's HTTP 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 HTTP function, the response returned by the gRPC method needs to be base64 encoded and returned.

"error": Error message returned by invoking gRPC method.

****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 methods defined in FG by users. Each method needs to complete execution within 30 seconds to minimize failure probability.
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 2-750 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 2-751 Request body parameters

| Parameter | Mandatory | Type | Description |
|----------------------|-----------|--------|--|
| provider_name | Yes | String | <p>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.</p> <p>Following the HCL best practices, provider name is recommended to be the local name of the private provider defined in the template.</p> <p>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.</p> |
| 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. |

| Parameter | Mandatory | Type | Description |
|--------------------|-----------|--------|---|
| function_graph_urn | No | String | <p>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.</p> <p>For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html</p> |

Response Parameters

Status code: 201

Table 2-752 Response body parameters

| Parameter | Type | Description |
|-------------|--------|--|
| provider_id | String | <p>Unique ID of a private provider. It is a UUID generated by RFS when a private provider is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

| 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. |

Status code: 400

Table 2-753 Response body parameters

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

Table 2-754 Detail

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

Status code: 401

Table 2-755 Response body parameters

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

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

Table 2-756 Detail

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

Status code: 403

Table 2-757 Response body parameters

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

Table 2-758 Detail

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

Status code: 409

Table 2-759 Response body parameters

| Parameter | Type | Description |
|------------|--------|----------------|
| error_code | String | Response code. |

| 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 2-760 Detail

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

Status code: 429

Table 2-761 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-762 Detail

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

Status code: 500

Table 2-763 Response body parameters

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

Table 2-764 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",
  "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 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.

URI

POST /v1/private-providers/{provider_name}/versions

Table 2-765 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 2-766 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 2-767 Request body parameters

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|--------|---|
| provider_id | No | String | <p>Unique ID of a private provider.</p> <p>It is a UUID generated by RFS when a private provider is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| provider_version | Yes | String | <p>Private provider version. The version number follows the Semantic Version and is customized by the user.</p> |
| version_description | No | String | <p>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.</p> |

| 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: 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. |

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. |

Table 2-775 Detail

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

Status code: 409

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: 429

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. |

Table 2-779 Detail

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

Status code: 500

Table 2-780 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-781 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
```

```
{
  "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. |

2.8 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 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:
 - CreateExecutionPlan
 - ApplyExecutionPlan
 - CreateStack
 - DeployStack
 - ContinueDeployStack
 - DeleteStack
 - DeleteStackEnhanced
- 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.
- 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.

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 2-782 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. |

Table 2-783 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. 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. |
| 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. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| policy_uri | No | String | <p>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.</p> <p>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.</p> <p>The policy file verification requirements are as follows:</p> <ul style="list-style-type: none"> 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. <p>Either policy_uri or policy_body must be specified.</p> |

| 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 2-784 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. 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. 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: 201

Table 2-785 Response body parameters

| Parameter | Type | Description |
|-----------|--------|---|
| hook_id | String | <p>Unique ID of a private hook.</p> <p>It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Status code: 400

Table 2-786 Response body parameters

| 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 |

Status code: 403

Table 2-788 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 409

Table 2-789 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-790 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-791 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

POST https://{endpoint}/v1/private-hooks

```
{
  "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"  
}
```

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. |

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.
- Currently, all hooks are returned. Pagination is not supported.
- If there is no private hook, an empty list will be returned.
- The specific information returned can be found in `ListPrivateHooksResponseBody`.

URI

GET /v1/private-hooks

Table 2-792 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. <ul style="list-style-type: none"> • <i>asc</i>: ascending order • <i>desc</i>: descending order |

Request Parameters

Table 2-793 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 2-794 Response body parameters

| Parameter | Type | Description |
|-----------|---|--|
| hooks | Array of PrivateHookSummary objects | Private hooks, sorted by creation time in descending order by default. |

Table 2-795 PrivateHookSummary

| Parameter | Type | Description |
|------------------|--------|---|
| hook_name | String | <p>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.</p> <p>We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.</p> |
| hook_id | String | <p>Unique ID of a private hook.</p> <p>It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| hook_description | String | <p>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.</p> |
| default_version | String | <p>Private hook default version. The version number follows the Semantic Version and is customized by the user.</p> |

| Parameter | Type | Description |
|---------------|--------------------------------|--|
| 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. |

Table 2-796 configuration

| Parameter | Type | Description |
|---------------|--------|--|
| target_stacks | String | Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. 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. 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 2-797 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-798 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-799 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-800 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-801 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

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"
  }
]
```

Status Codes

| Status Code | Description |
|-------------|---|
| 200 | List private hooks succeeded. |
| 400 | Invalid request. |
| 401 | Authentication failed. |
| 403 | The user does not have the permission to call this API. |

| Status Code | Description |
|-------------|------------------------|
| 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 2-802 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. |

Table 2-803 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-804 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: 400

Table 2-805 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-806 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-807 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-808 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-809 Response body parameters

| 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 |

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. |

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 2-811 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. |

Request Parameters

Table 2-812 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 2-813 Request body parameters

| Parameter | Mandatory | Type | Description |
|--------------------------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| hook_version | Yes | String | Private hook version. The version number follows the Semantic Version and is customized by the user. |
| hook_version_description | No | String | <p>Description of the private hook version. It can be used by users to identify and manage private hook versions.</p> <p>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.</p> |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| policy_uri | No | String | <p>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.</p> <p>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.</p> <p>The policy file verification requirements are as follows:</p> <ul style="list-style-type: none"> 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. <p>Either policy_uri or policy_body must be specified.</p> |

| 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: 400

Table 2-814 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-815 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-816 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-817 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 409**Table 2-818** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429**Table 2-819** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500**Table 2-820** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

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\n\"is_passed\": input.message == \"world\",\n\n\"err_msg\": \"The error msg when private hook is not passed the validation\",\n\n}\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

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 2-821 Path Parameters

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|--|
| hook_name | Yes | String | <p>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.</p> <p>We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.</p> |
| hook_version | Yes | String | <p>Private hook version. The version number follows the Semantic Version and is customized by the user.</p> |

Table 2-822 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-823 Request header parameters

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

Response Parameters

Status code: 400

Table 2-824 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-825 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-826 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-827 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-828 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500**Table 2-829** 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. |

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 2-830 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. |

Table 2-831 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-832 Request header parameters

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

Response Parameters

Status code: 307

Table 2-833 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 2-834 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-835 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-836 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-837 Response body parameters

| Parameter | Type | Description |
|------------|--------|---------------|
| error_code | String | Response code |

| Parameter | Type | Description |
|-----------|--------|------------------|
| error_msg | String | Response message |

Status code: 429

Table 2-838 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-839 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. |

| 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 2-840 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. |

Table 2-841 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-842 Request header parameters

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

Response Parameters

Status code: 200

Table 2-843 Response body parameters

| Parameter | Type | Description |
|------------------|--------|---|
| hook_name | String | <p>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.</p> <p>We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.</p> |
| hook_id | String | <p>Unique ID of a private hook.</p> <p>It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| hook_description | String | <p>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.</p> |
| default_version | String | <p>Private hook default version. The version number follows the Semantic Version and is customized by the user.</p> |

| Parameter | Type | Description |
|---------------|--------------------------------|--|
| 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. |

Table 2-844 configuration

| Parameter | Type | Description |
|---------------|--------|--|
| target_stacks | String | Specifies the target stack where the private hook takes effect. The value can be NONE or ALL. 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. 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 2-845 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401**Table 2-846** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403**Table 2-847** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404**Table 2-848** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429**Table 2-849** Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-850 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. |

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 2-851 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. |

Request Parameters

Table 2-852 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 2-853 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. |

| Parameter | Mandatory | Type | Description |
|-----------------|-----------|-----------------------------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| 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. |

Table 2-854 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. 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. 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: 400

Table 2-855 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 401

Table 2-856 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 403

Table 2-857 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-858 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 409

Table 2-859 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-860 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-861 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

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

Table 2-862 Path Parameters

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|--|
| hook_name | Yes | String | <p>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.</p> <p>We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.</p> |
| hook_version | Yes | String | <p>Private hook version. The version number follows the Semantic Version and is customized by the user.</p> |

Table 2-863 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| hook_id | No | String | <p>Unique ID of a private hook. It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-864 Request header parameters

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

Response Parameters

Status code: 200

Table 2-865 Response body parameters

| Parameter | Type | Description |
|--------------------------|--------|---|
| hook_name | String | <p>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.</p> <p>We recommend users to use a three-part namespace for naming: {custom-hook-name}-{hook application context}-hook.</p> |
| hook_id | String | <p>Unique ID of a private hook.</p> <p>It is an UUID generated by RFS when a private hook is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| hook_version | String | <p>Private hook version. The version number follows the Semantic Version and is customized by the user.</p> |
| hook_version_description | String | <p>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.</p> |

| Parameter | Type | Description |
|-------------|--------|--|
| 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. |

Status code: 400

Table 2-866 Response body parameters

| 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 |

Status code: 403

Table 2-868 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 404

Table 2-869 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 429

Table 2-870 Response body parameters

| Parameter | Type | Description |
|------------|--------|------------------|
| error_code | String | Response code |
| error_msg | String | Response message |

Status code: 500

Table 2-871 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. |

| Status Code | Description |
|-------------|--|
| 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. |
| 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

Request Parameters

Table 2-872 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 2-873 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. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|--|
| module_uri | No | String | <p>Address for accessing the module package in OBS. Modules allow you to bundle reusable code together.</p> <p>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.</p> <p>The module package must be ZIP-formatted. To ensure the validity of the module package, the module package:</p> <ul style="list-style-type: none"> • 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). <p>Notes:</p> <ul style="list-style-type: none"> • 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. |

| 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 2-874 Response body parameters

| Parameter | Type | Description |
|-----------|--------|---|
| module_id | String | <p>Unique ID of a private module. It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Status code: 400

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 information. It is returned by the service when the "permission denied" error occurs. |

Table 2-876 Detail

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

Status code: 401

Table 2-877 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-878 Detail

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

Status code: 403

Table 2-879 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-880 Detail

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

Status code: 409

Table 2-881 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-882 Detail

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

Status code: 429

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 information. It is returned by the service when the "permission denied" error occurs. |

Table 2-884 Detail

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

Status code: 500

Table 2-885 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-886 Detail

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

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.

- 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`.

`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 2-887 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|------------------|---|
| <code>sort_key</code> | No | Array of strings | Sorting field. Only <code>create_time</code> is supported. |
| <code>sort_dir</code> | No | Array of strings | Specify an ascending or descending order. <ul style="list-style-type: none">• <i>asc</i>: ascending order• <i>desc</i>: descending order |

Request Parameters

Table 2-888 Request header parameters

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

Response Parameters

Status code: 200

Table 2-889 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. |

Table 2-890 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. |
| 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. |

| Parameter | Type | Description |
|-------------|--------|--|
| 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 2-891 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 information. It is returned by the service when the "permission denied" error occurs. |

Table 2-892 Detail

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

Status code: 401

Table 2-893 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-894 Detail

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

Status code: 403

Table 2-895 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-896 Detail

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

Status code: 429

Table 2-897 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-898 Detail

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

Status code: 500

Table 2-899 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-900 Detail

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

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"
  } ]
}
```

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. |

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 2-901 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 2-902 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-903 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: 400

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 information. It is returned by the service when the "permission denied" error occurs. |

Table 2-905 Detail

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

Status code: 401

Table 2-906 Response body parameters

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

| Parameter | Type | Description |
|----------------------------|---|--|
| encoded_authorized_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 2-907 Detail

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

Status code: 403

Table 2-908 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-909 Detail

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

Status code: 404

Table 2-910 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-911 Detail

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

Status code: 429**Table 2-912** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-913 Detail

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

Status code: 500

Table 2-914 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-915 Detail

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

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

Table 2-916 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 2-917 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-918 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 2-919 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_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 2-920 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-921 Detail

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

Status code: 401

Table 2-922 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-923 Detail

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

Status code: 403

Table 2-924 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-925 Detail

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

Status code: 404

Table 2-926 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-927 Detail

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

Status code: 429

Table 2-928 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-929 Detail

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

Status code: 500

Table 2-930 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-931 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. |
| 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.
- 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 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 2-932 Path Parameters

| Parameter | Mandatory | Type | Description |
|--------------------------|-----------|--------|--|
| <code>module_name</code> | Yes | String | Name of a private module. The name is unique within its domain (<code>domain_id</code>) and region. Only letters, digits, underscores (<code>_</code>), and hyphens (<code>-</code>) are allowed. The name is case-sensitive and must start with a letter. |

Request Parameters

Table 2-933 Request header parameters

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

Table 2-934 Request body parameters

| Parameter | Mandatory | Type | Description |
|---------------------------------|-----------|--------|---|
| <code>module_description</code> | 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 <code>UpdatePrivateModuleMetadata</code> API. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Response Parameters

Status code: 400

Table 2-935 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-936 Detail

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

Status code: 401

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 information. It is returned by the service when the "permission denied" error occurs. |

Table 2-938 Detail

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

Status code: 403

Table 2-939 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-940 Detail

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

Status code: 404

Table 2-941 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-942 Detail

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

Status code: 429

Table 2-943 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-944 Detail

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

Status code: 500

Table 2-945 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-946 Detail

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

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`

Table 2-947 Path Parameters

| Parameter | Mandatory | Type | Description |
|--------------------------|-----------|--------|--|
| <code>module_name</code> | Yes | String | Name of a private module. The name is unique within its domain (<code>domain_id</code>) and region. Only letters, digits, underscores (<code>_</code>), and hyphens (<code>-</code>) are allowed. The name is case-sensitive and must start with a letter. |

Request Parameters

Table 2-948 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 2-949 Request body parameters

| Parameter | Mandatory | Type | Description |
|----------------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| module_version | No | String | Module version number. Each version number can be defined by following the semantic versioning format. |

| 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. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|--|
| module_uri | No | String | <p>Address for accessing the module package in OBS. Modules allow you to bundle reusable code together.</p> <p>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.</p> <p>The module package must be ZIP-formatted. To ensure the validity of the module package, the module package:</p> <ul style="list-style-type: none"> • 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). <p>Notes:</p> <ul style="list-style-type: none"> • 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. |

Response Parameters

Status code: 400

Table 2-950 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-951 Detail

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

Status code: 401

Table 2-952 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-953 Detail

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

Status code: 403

Table 2-954 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-955 Detail

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

Status code: 404

Table 2-956 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-957 Detail

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

Status code: 409

Table 2-958 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-959 Detail

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

Status code: 429

Table 2-960 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-961 Detail

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

Status code: 500

Table 2-962 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-963 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.

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.

URI

GET /v1/private-modules/{module_name}/versions

Table 2-964 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 2-965 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------------------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| sort_key | No | Array of strings | Sorting field. Only create_time is supported. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------------------|--|
| sort_dir | No | Array of strings | Specify an ascending or descending order. <ul style="list-style-type: none"> • <i>asc</i>: ascending order • <i>desc</i>: descending order |

Request Parameters

Table 2-966 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 2-967 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. |

Table 2-968 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. |

| Parameter | Type | Description |
|---------------------|--------|--|
| module_id | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| module_version | String | Module version number. Each version number can be defined by following the semantic versioning format. |
| 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. |

Status code: 400**Table 2-969** Response body parameters

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

| Parameter | Type | Description |
|----------------------------|---|--|
| encoded_authorized_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 2-970 Detail

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

Status code: 401

Table 2-971 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-972 Detail

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

Status code: 403

Table 2-973 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-974 Detail

| Parameter | Type | Description |
|------------|--------|-------------------|
| error_code | String | Response code. |
| 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. |
| encoded_authorized_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 2-976 Detail

| 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. |
| 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 2-978 Detail

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

Status code: 500

Table 2-979 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-980 Detail

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

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"
  } ]
}
```

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. |

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 2-981 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 2-982 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-983 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 2-984 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 2-985** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-986 Detail

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

Status code: 401**Table 2-987** Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-988 Detail

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

Status code: 403

Table 2-989 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-990 Detail

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

Status code: 404

Table 2-991 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-992 Detail

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

Status code: 429

Table 2-993 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-994 Detail

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

Status code: 500

Table 2-995 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-996 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 2-997 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 2-998 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-999 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: 400

Table 2-1000 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-1001 Detail

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

Status code: 401

Table 2-1002 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-1003 Detail

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

Status code: 403

Table 2-1004 Response body parameters

| Parameter | Type | Description |
|----------------------------|---|--|
| error_code | String | Response code. |
| error_msg | String | Response message. |
| encoded_authorized_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 2-1005 Detail

| 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. |
| encoded_authorized_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 2-1007 Detail

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

Status code: 429

Table 2-1008 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1009 Detail

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

Status code: 500

Table 2-1010 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1011 Detail

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

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
```

Table 2-1012 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 2-1013 Query Parameters

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| module_id | No | String | <p>Unique ID of a private module.</p> <p>It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

Request Parameters

Table 2-1014 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 2-1015 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 | <p>Unique ID of a private module. It is a UUID generated by RFS when a module is created.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| module_version | String | Module version number. Each version number can be defined by following the semantic versioning format. |

| 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: <pre>module "my_hello_word_module" { source = {module_source} }</pre> {module_source} indicates the source argument. |

Status code: 400

Table 2-1016 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1017 Detail

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

Status code: 401

Table 2-1018 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1019 Detail

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

Status code: 403

Table 2-1020 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1021 Detail

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

Status code: 404

Table 2-1022 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1023 Detail

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

Status code: 429

Table 2-1024 Response body parameters

| Parameter | Type | Description |
|-------------------------------|---|--|
| error_code | String | Response 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 2-1025 Detail

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

Status code: 500

Table 2-1026 Response body parameters

| Parameter | Type | Description |
|-------------------------------|--------------------------------|--|
| error_code | String | Response 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 2-1027 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. |

| 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 that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

If you want to allow or deny the access to an API, fine-grained authorization is a good choice.

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

IAM provides system-defined policies that can be directly used. 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: added to a custom policy to control permissions for specific operations.
- Dependent actions: actions on which a specific action depends to take effect. When assigning permissions for the action to a user, you also need to assign permissions for the dependent actions.
- IAM project/Enterprise project: An action in a custom policy can be applied to either or both of these projects. 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 2-1028 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 |

| 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 2-1029 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 |

| 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 |

| 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 2-1030 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 |

| 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 2-1031 Template

| Permission | API | Action | IAM Project | Enterprise Project |
|---------------------------|---|------------------------------------|-------------|--------------------|
| Parse template parameters | POST /v1/{project_id}/template-analyses/variables | rf:template:parseTemplateVariables | √ | x |

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. |

| 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. |

| 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 exists, 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. |

| 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 | UnprocessableEntity | 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](#).

| 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 <code>template_uri</code> and <code>template_body</code> are given, you should only give exactly one parameter from <code>template_uri</code> and <code>template_body</code> . | 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. |

| 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. |

| 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 <code>template_uri</code> and <code>template_body</code> are absence, you should give exactly one parameter from <code>template_uri</code> and <code>template_body</code> . | Both <code>template_uri</code> and <code>template_body</code> are missing. Either of them must be specified but they both cannot be specified together. | Contact technical support. |

| 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. |

| 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. |

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](#).

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.

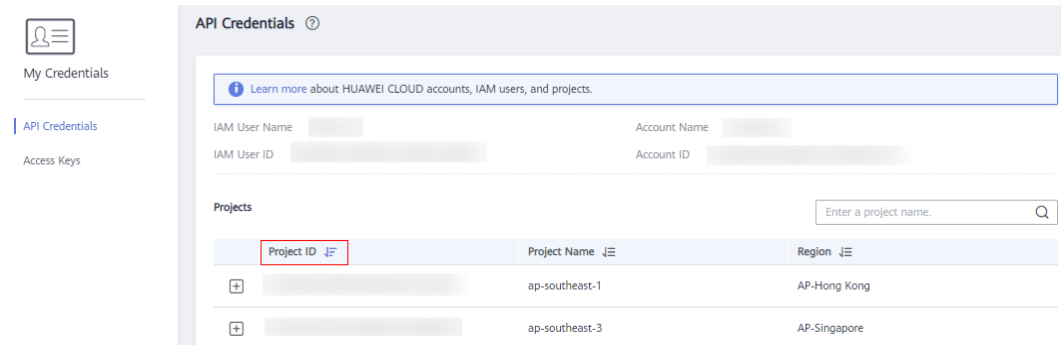
```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "project_name",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
      },
      "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.

Figure 3-1 Viewing the project ID



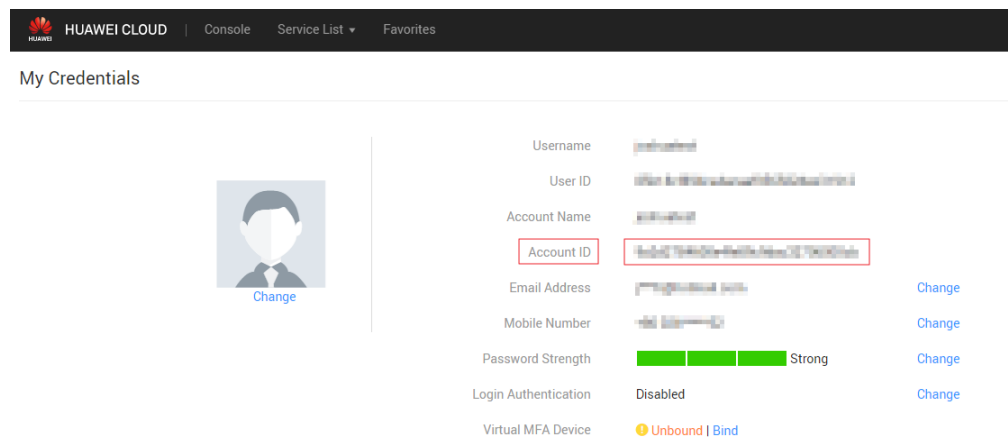
3.4 Obtaining an Account ID

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.

On the **My Credentials** page, view account ID.

Figure 3-2 Obtaining your account ID



4 Change History

| Date | Change History |
|------------|--|
| 2022-10-28 | Added: <ul style="list-style-type: none"><li>• Resource Formation APIs<li>• ErrorCode |