

Resource Formation Service

API Reference

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Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: <https://www.huawei.com>

Email: support@huawei.com

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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](#).

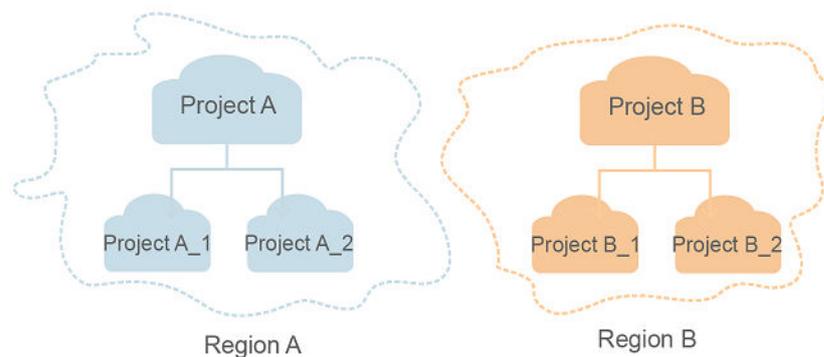
- AZ

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 Resource Formation Service

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 → MIIVXQVJKoZIhvcNAQcCoIIYJCCEoCAQExDQALBgIghkgB8ZQMEAgEwgharBgkqhkiG9w0BBwwGgghacBIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6IjIwMTk0MTU0MCBj3KJ56YgKnpVNRbW2eZ5eb78SZOkqjACgkIQ1wi4JlGzrpd18LGXK5tdfdq4lqHCYb8P4NaY0NyejAgzJVeFYtLWT1GSO0zxKZmlQHqj82HBqHdglZO9fuEbL5dMhdavj+33wEIxHRCE9I87o+k9-j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jgglFkNPQuFSOU8+uSsttVwRtNfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUVhVpXk8pxiX1wTEboX-RzT6MUUbpvGw-oPNFYjJECKnoH3HRozv0vN--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](#)

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.

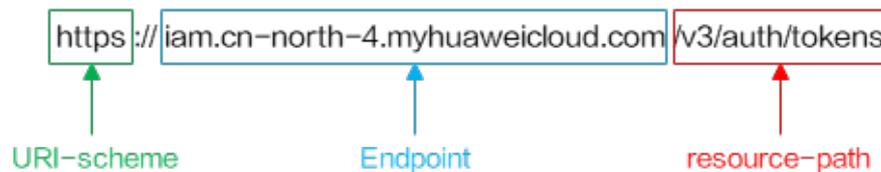
Table 2-1 Parameters in a URI

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 *xxxxxxxxxxxxxxxxxxx* (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
→ MIiYXQYJKoZIhvcNAQcCoIIYtJCCGEOCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IiwMTktMDItMTNUMC
fj3Kjs6YgKnpVNRbW2eZ5eb78SZOkqjACgkqlqO1wi4JIGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgz/VeFYtLWT1GSO0zxKZmlQHQj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jggIFkNPQuFSOU8+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 Minimum: 3 Maximum: 64

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. Minimum: 1 Maximum: 128

Table 2-5 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned. Minimum: 36 Maximum: 36

Parameter	Mandatory	Type	Description
deployment_id	No	String	<p>Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered.</p> <p>Minimum: 36 Maximum: 36</p>
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 (_). Semicolons (;) are not allowed in filter criteria. If semicolons are used, the filter criteria will be ignored. • 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. <p>Minimum: 0 Maximum: 512</p>
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 (,). <p>Minimum: 0 Maximum: 128</p>

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. Minimum: 36 Maximum: 128

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. 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>
time	String	<p>Occurrence time of an event. The format complies with RFC 3339 (YYYY-MM-DDTHH:MM:SSZ), for example, 1970-01-01T00:00:00Z.</p>

Parameter	Type	Description
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. – 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. <p>Enumeration values:</p> <ul style="list-style-type: none"> ● LOG ● ERROR ● DRIFT ● SUMMARY ● CREATION_IN_PROGRESS ● CREATION_FAILED ● CREATION_COMPLETE ● DELETION_IN_PROGRESS ● DELETION_FAILED

Parameter	Type	Description
		<ul style="list-style-type: none"> • DELETION_COMPLETE • UPDATE_IN_PROGRESS • UPDATE_FAILED • UPDATE_COMPLETE
event_message	String	Details about a stack event.
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. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-10 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-11 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-12 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-13 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-14 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

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

```
GET https://{endpoint}/v1/ba2b9930c977f71edaea3a5e96a8ff1/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/ba2b9930c977f71edaea3a5e96a8ff1/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/ba2b9930c977f71edaea3a5e96a8ff1/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 2-15 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Table 2-16 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-17 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-18 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</p>
description	String	<p>Description of a stack. It can be used by customers to identify their own stacks.</p> <p>Minimum: 0</p> <p>Maximum: 1024</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. <p>Array Length: 0 - 100</p>
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. <p>Minimum: 0 Maximum: 51200</p>

Parameter	Type	Description
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>
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. 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	Type	Description
status	String	<p>Status of a stack. * CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. * DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. * DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. * DEPLOYMENT_COMPLETE indicates the deployment completed. * ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. * ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. * ROLLBACK_COMPLETE indicates the rollback completed. * DELETION_IN_PROGRESS indicates the deletion is in progress. * DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● CREATION_COMPLETE ● DEPLOYMENT_IN_PROGRESS ● DEPLOYMENT_FAILED ● DEPLOYMENT_COMPLETE ● ROLLBACK_IN_PROGRESS ● ROLLBACK_FAILED ● ROLLBACK_COMPLETE ● DELETION_IN_PROGRESS ● DELETION_FAILED

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 Array Length: 0 - 10
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 2-19 VarsStructure

Parameter	Type	Description
var_key	String	Variable name. Minimum: 1 Maximum: 32
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. Minimum: 0 Maximum: 2048

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 2-20 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 2-21 KmsStructure

Parameter	Type	Description
id	String	<p>KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.</p> <p>Minimum: 36</p> <p>Maximum: 36</p>

Parameter	Type	Description
cipher_text	String	Ciphertext of data encryption key. Minimum: 2 Maximum: 2048

Table 2-22 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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 64
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 2-23 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401**Table 2-24** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-25** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-26** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-27 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-28 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-29 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 Minimum: 3 Maximum: 64

Request Parameters

Table 2-30 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-31 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 2-32 Stack

Parameter	Type	Description
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> <p>Minimum: 1 Maximum: 128</p>
description	String	<p>Description of a stack. It can be used by customers to identify their own stacks.</p> <p>Minimum: 0 Maximum: 1024</p>
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> <p>Minimum: 36 Maximum: 36</p>

Parameter	Type	Description
status	String	<p>Status of a stack. * CREATION_COMPLETE indicates an empty stack has been created and no deployment is performed. * DEPLOYMENT_IN_PROGRESS indicates the stack deployment is in progress. * DEPLOYMENT_FAILED indicates the deployment fails. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. * DEPLOYMENT_COMPLETE indicates the deployment completed. * ROLLBACK_IN_PROGRESS indicates the deployment failed and the rollback is in progress. * ROLLBACK_FAILED indicates the rollback failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents. * ROLLBACK_COMPLETE indicates the rollback completed. * DELETION_IN_PROGRESS indicates the deletion is in progress. * DELETION_FAILED indicates the deletion failed. You can obtain the error information summary from status_message. To obtain event details, you can call ListStackEvents.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● CREATION_COMPLETE ● DEPLOYMENT_IN_PROGRESS ● DEPLOYMENT_FAILED ● DEPLOYMENT_COMPLETE ● ROLLBACK_IN_PROGRESS ● ROLLBACK_FAILED ● ROLLBACK_COMPLETE ● DELETION_IN_PROGRESS ● DELETION_FAILED
create_time	String	<p>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.</p>
update_time	String	<p>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.</p>

Parameter	Type	Description
status_message	String	If a stack is in a failure state (ending with FAILED), a brief error information summary is displayed for debugging.

Status code: 400**Table 2-33** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401**Table 2-34** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-35 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-36 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-37 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-38 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 Minimum: 3 Maximum: 64

Request Parameters

Table 2-39 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. Minimum: 36 Maximum: 128

Table 2-40 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. Minimum: 1 Maximum: 128

Parameter	Mandatory	Type	Description
agencies	No	Array of Agency objects	<p>Agency information.</p> <p>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.</p> <p>Creating Delegation and Authorisation Methods</p> <p>Array Length: 0 - 10</p>
description	No	String	<p>Description of a stack. It can be used by customers to identify their own stacks.</p> <p>Minimum: 0</p> <p>Maximum: 1024</p>
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>

Parameter	Mandatory	Type	Description
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. 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. <p>Minimum: 0 Maximum: 51200</p>

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.</p> <p>The OBS address allows mutual access to 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 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.</p> <p>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.</p> <p>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,

Parameter	Mandatory	Type	Description
			<p>you are advised to use <code>vars_structure</code> to change the information to a variable and set the encryption field to enable encrypted transmission.</p> <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. <p>Minimum: 0 Maximum: 2048</p>

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. <p>Minimum: 0 Maximum: 51200</p>

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. <p>Array Length: 0 - 100</p>

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>The OBS address allows mutual access to 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> <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. <p>Minimum: 0 Maximum: 2048</p>

Table 2-41 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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 64
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 2-42 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	Variable name. Minimum: 1 Maximum: 32

Parameter	Mandatory	Type	Description
var_value	Yes	String	Variable value. Variables must be in the form of a string. If a parameter is a number, it must also be in the form of a string, for example, '10'. For different types or complex structures, you can use vars_uri or vars_body. Minimum: 0 Maximum: 2048
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 2-43 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. <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 2-44 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	<p>KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.</p> <p>Minimum: 36</p> <p>Maximum: 36</p>

Parameter	Mandatory	Type	Description
cipher_text	Yes	String	Ciphertext of data encryption key. Minimum: 2 Maximum: 2048

Response Parameters

Status code: 201

Table 2-45 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> <p>Minimum: 36 Maximum: 36</p>
deployment_id	String	Deployment ID.

Status code: 400

Table 2-46 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-47 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-48 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-49 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-50 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-51 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Create a stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/stacks
{
  "stack_name": "my_first_stack",
  "description": "my first stack"
}
```

- Create a stack using an agency.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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}\nprovider\n  \"huaweicloud\" {\n  insecure = true\n  cloud = \"{cloud_name}\"\n  region = \"{region}\"\n  endpoints = {\n    iam = \"{iam_endpoint}\",\n  }\n}\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\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.

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

2.2.5 Obtaining a Stack Template

Function

GetStackTemplate

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

Note: When a stack is in a non-final state (ending with IN_PROGRESS), the stack is in the transition phase. This API obtains the template used for the last deployment of the stack. Only when the stack is in the final state (ending with COMPLETE or FAILED), this API obtains the template used for the current deployment. CREATION_COMPLETE is an exception because there is no template yet and 404 is returned, indicating that the template does not exist.

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 2-52 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>A project ID is obtained by calling an API or from the console.</p> <p>Obtaining a Project ID</p> <p>Minimum: 3</p> <p>Maximum: 64</p>
stack_name	Yes	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> <p>Minimum: 1</p> <p>Maximum: 128</p>

Table 2-53 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-54 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 307

Table 2-55 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 2-56 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-57 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-58 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-59 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-60 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-61 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Obtain a stack template.
GET https://{endpoint}/v1/my_hello_world_stack/templates
- Obtain a stack template and check whether the stack ID matches the current stack.
GET https://{endpoint}/v1/my_hello_world_stack/templates?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2

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 2-62 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 Minimum: 3 Maximum: 64
<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. Minimum: 1 Maximum: 128

Table 2-63 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> <p>Minimum: 36</p> <p>Maximum: 36</p>

Request Parameters

Table 2-64 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36</p> <p>Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-65 Response body parameters

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

Table 2-66 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 logical_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 logical_resource_name is my_hello_world_vpc.</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.</p> <p>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 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>

Parameter	Type	Description
		<pre> "name": "\${each.value}" } } } } </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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATION_IN_PROGRESS • CREATION_FAILED • CREATION_COMPLETE • DELETION_IN_PROGRESS • DELETION_FAILED • DELETION_COMPLETE • UPDATE_IN_PROGRESS • UPDATE_FAILED • UPDATE_COMPLETE
status_message	String	<p>If the resource is in a failure state (ending with FAILED), a summary of the error information is displayed for debugging.</p>

Parameter	Type	Description
resource_attri butes	Array of ResourceAttri bute objects	Resource attribute list.

Table 2-67 ResourceAttribute

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

Status code: 400

Table 2-68 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-69 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-70 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-71 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-72 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-73 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Example Requests

- List the stack resources.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/resources
- List the stack resources and check whether the stack ID matches the current stack.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/resources?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2

Example Responses

Status code: 200

Stack resources listed.

```
{
  "stack_resources": [ {
    "logical_resource_name": "vpc",
    "logical_resource_type": "huaweicloud_vpc",
    "physical_resource_id": "38d617da-9b7f-4550-9ff7-d0e271dd4735",
    "physical_resource_name": "my_vpc",
    "resource_attributes": [ {
      "key": "cidr",
      "value": "172.16.0.0/16"
    }, {
      "key": "description",
      "value": ""
    }, {
      "key": "enterprise_project_id",
      "value": "0"
    }, {
      "key": "id",
      "value": "38d617da-9b7f-4550-9ff7-d0e271dd4735"
    }, {
      "key": "name",
      "value": "test_name"
    }, {
      "key": "region",
      "value": "cn-north-7"
    }, {
      "key": "routes",
      "value": "[]"
    }
  ]
}
```

```

    }, {
      "key": "secondary_cidr",
      "value": "null"
    }, {
      "key": "status",
      "value": "OK"
    }, {
      "key": "tags",
      "value": "null"
    }, {
      "key": "timeouts",
      "value": "null"
    }
  ],
  "resource_status": "CREATION_COMPLETE"
}
}

```

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 2-74 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Table 2-75 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-76 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-77 Response body parameters

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

Table 2-78 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 2-79 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-80 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-81 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-82 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-83 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-84 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-85 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-86 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. Minimum: 36 Maximum: 128

Table 2-87 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> <p>Minimum: 36 Maximum: 36</p>

Response Parameters

Status code: 202

Table 2-88 Response body parameters

Parameter	Type	Description
deployment_id	String	Deployment ID.

Status code: 400

Table 2-89 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-90 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-91 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-92 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-93 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-94 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-95 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Continue to deploy a stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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.

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

2.2.9 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 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 2-96 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 Minimum: 3 Maximum: 64

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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-97 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. Minimum: 36 Maximum: 128

Table 2-98 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. <p>Minimum: 0 Maximum: 51200</p>

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.</p> <p>The OBS address allows mutual access to 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 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.</p> <p>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.</p> <p>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,

Parameter	Mandatory	Type	Description
			<p>you are advised to use <code>vars_structure</code> to change the information to a variable and set the encryption field to enable encrypted transmission.</p> <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. <p>Minimum: 0 Maximum: 2048</p>

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. <p>Array Length: 0 - 100</p>

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. <p>Minimum: 0 Maximum: 51200</p>

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>The OBS address allows mutual access to 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> <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. <p>Minimum: 0 Maximum: 2048</p>

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> <p>Minimum: 36</p> <p>Maximum: 36</p>

Table 2-99 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	<p>Variable name.</p> <p>Minimum: 1</p> <p>Maximum: 32</p>

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> <p>Minimum: 0</p> <p>Maximum: 2048</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 2-100 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. <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 2-101 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	<p>KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.</p> <p>Minimum: 36 Maximum: 36</p>

Parameter	Mandatory	Type	Description
cipher_text	Yes	String	Ciphertext of data encryption key. Minimum: 2 Maximum: 2048

Response Parameters

Status code: 202

Table 2-102 Response body parameters

Parameter	Type	Description
deployment_id	String	Deployment ID.

Status code: 400

Table 2-103 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-104 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.

Parameter	Type	Description
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-105 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-106 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-107 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-108** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-109** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 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 2-110 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Table 2-111 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-112 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 400

Table 2-113 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-114 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-115 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-116 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-117 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-118 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-119 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-120 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. Minimum: 36 Maximum: 128

Table 2-121 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. Minimum: 0 Maximum: 1024
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned. Minimum: 36 Maximum: 36
enable_deletion_protection	No	Boolean	Deletion protection flag. If this variable is not assigned, the default value is false, indicating that deletion protection is disabled by default. (After deletion protection is enabled, stacks cannot be deleted.) <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>

Parameter	Mandatory	Type	Description
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. 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>
agencies	No	Array of Agency objects	<p>Agency information.</p> <p>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.</p> <p>Creating Delegation and Authorisation Methods</p> <p>Array Length: 0 - 10</p>

Table 2-122 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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 64
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 2-123 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-124 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-125 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-126 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-127 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-128 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-129 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-130 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 Minimum: 3 Maximum: 64

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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-131 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. Minimum: 36 Maximum: 128

Table 2-132 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> <p>Minimum: 36 Maximum: 36</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 2-133 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-134 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-135 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-136** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-137** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-138** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-139 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-140 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. Minimum: 36 Maximum: 128

Table 2-141 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> <p>Minimum: 36 Maximum: 36</p>

Response Parameters

Status code: 202

Table 2-142 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.

Status code: 400

Table 2-143 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-144 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-145 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-146 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-147 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-148 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-149 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Continue to roll back a stack.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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.

Status Code	Description
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 2-150 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 Minimum: 3 Maximum: 64

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. Minimum: 1 Maximum: 128

Table 2-151 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-152 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-153 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 2-154 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. Minimum: 1 Maximum: 128

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> <p>Minimum: 36</p> <p>Maximum: 36</p>
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>Minimum: 36</p> <p>Maximum: 36</p>

Parameter	Type	Description
execution_plan_name	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 1 Maximum: 128
description	String	Execution plan description. It is used to identify your own execution plans. Minimum: 0 Maximum: 1024
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. Enumeration values: <ul style="list-style-type: none"> ● CREATION_IN_PROGRESS ● CREATION_FAILED ● AVAILABLE ● APPLY_IN_PROGRESS ● 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 2-155** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401**Table 2-156** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-157** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-158** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-159** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-160** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- List all execution plans of a specified stack.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans
- List all execution plans of a specified stack with a stack ID to check whether the stack ID matches the current stack.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans?stack_id=f689e9fd-97e7-4185-bd8a-7d5f708d45d7

Example Responses

Status code: 200

Execution plans listed.

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

Status Code	Description
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 2-161 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-162 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. Minimum: 36 Maximum: 128

Table 2-163 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> <p>Minimum: 36 Maximum: 36</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. <p>Minimum: 0 Maximum: 51200</p>

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.</p> <p>The OBS address allows mutual access to 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 corresponding file must be a tf file or a zip package.</p> <p>A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax.</p> <p>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.</p> <p>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,

Parameter	Mandatory	Type	Description
			<p>you are advised to use <code>vars_structure</code> to change the information to a variable and set the encryption field to enable encrypted transmission.</p> <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. <p>Minimum: 0 Maximum: 2048</p>
<code>execution_plan_name</code>	Yes	String	<p>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.</p> <p>Minimum: 1 Maximum: 128</p>
<code>description</code>	No	String	<p>Execution plan description. It is used to identify your own execution plans.</p> <p>Minimum: 0 Maximum: 1024</p>

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. <p>Array Length: 0 - 100</p>

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. <p>Minimum: 0 Maximum: 51200</p>

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>The OBS address allows mutual access to 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> <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. <p>Minimum: 0 Maximum: 2048</p>

Table 2-164 VarsStructure

Parameter	Mandatory	Type	Description
var_key	Yes	String	Variable name. Minimum: 1 Maximum: 32
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. Minimum: 0 Maximum: 2048
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 2-165 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. <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 2-166 KmsStructure

Parameter	Mandatory	Type	Description
id	Yes	String	<p>KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.</p> <p>Minimum: 36 Maximum: 36</p>

Parameter	Mandatory	Type	Description
cipher_text	Yes	String	Ciphertext of data encryption key. Minimum: 2 Maximum: 2048

Response Parameters

Status code: 202

Table 2-167 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>Minimum: 36 Maximum: 36</p>

Status code: 400

Table 2-168 Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11 Maximum: 11</p>

Parameter	Type	Description
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-169 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-170 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-171 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-172 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-173 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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\nprovider\n  \"huaweicloud\" {\n    insecure = true\n    cloud = \"{cloud_name}\"\n    region = \"{region}\"\n\n    endpoints = {\n      iam = \"{iam_endpoint}\"\n    }\n\nresource \"huaweicloud_vpc\" \"vpc\" {\n  cidr = \"172.16.0.0/16\"\n  name = \"my_vpc\"\n}"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

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

Status Codes

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

2.3.3 Obtaining Execution Plans

Function

GetExecutionPlan

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

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

URI

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

Table 2-174 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 128

Table 2-175 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-176 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-177 Response body parameters

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

Table 2-178 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. If count is used in a template, index is a number starting from 0.</p> <p>For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>In a JSON template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] 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. 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 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>

Parameter	Type	Description
		} }
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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • ADD • ADD_THEN_DELETE • DELETE • DELETE_THEN_ADD • UPDATE • NO_OPERATION
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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • DATA • RESOURCE

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.
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 2-179 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 2-180 Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11</p> <p>Maximum: 11</p>
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-181 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-182 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-183 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-184 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-185** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Obtain the details (items) of a specified execution plan.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan
- Obtain the details (items) of a specified execution plan, with a stack ID and an execution plan ID provided to check whether they match the current stack and execution plan.
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f

Example Responses

Status code: 200

Execution plan details obtained.

```
{
  "execution_plan_items": [ {
    "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 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 2-186 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-187 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. Minimum: 36 Maximum: 128

Table 2-188 Request body parameters

Parameter	Mandatory	Type	Description
execution_plan_id	No	String	Unique execution plan ID. A UUID is generated by RFS when an execution plan is created. Execution plan names are unique at one specific time, so you can create an execution plan named HelloWorld and another execution plan with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the execution plan they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each execution plan has a unique ID that does not change with updates. If the execution_plan_id value differs from the current execution plan ID, 400 is returned. Minimum: 36 Maximum: 36

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> <p>Minimum: 36</p> <p>Maximum: 36</p>

Response Parameters

Status code: 202

Table 2-189 Response body parameters

Parameter	Type	Description
deployment_id	String	Unique deployment ID. It is a UUID generated by RFS when deployment or rollback is triggered.

Status code: 400

Table 2-190 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-191 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-192 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-193 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-194 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-195 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-196 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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.

Status Code	Description
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 2-197 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Parameter	Mandatory	Type	Description
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 1 Maximum: 128

Table 2-198 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned. Minimum: 36 Maximum: 36

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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-199 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 400

Table 2-200 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-201 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-202 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-203 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-204 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Delete an execution plan of a specified stack.
DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan
- Delete an execution plan of a specified stack, with a stack ID and an execution plan ID provided to check whether they match the current stack and execution plan.
DELETE https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/execution-plans/my_first_execution_plan?stack_id=ea6a4f0e-ee8a-494e-b12a-8be4a1e65af2&execution_plan_id=fb5e781e-a27d-46e2-9954-242753857a9f

Example Responses

None

Status Codes

Status Code	Description
204	Execution plan deleted.
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The execution plan cannot be deleted due to its invalid status.
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 2-205 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 Minimum: 3 Maximum: 64

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. Minimum: 1 Maximum: 128
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. Minimum: 1 Maximum: 128

Table 2-206 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-207 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-208 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</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>Minimum: 36</p> <p>Maximum: 36</p>
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> <p>Minimum: 1</p> <p>Maximum: 128</p>
description	String	<p>Execution plan description. It is used to identify your own execution plans.</p> <p>Minimum: 0</p> <p>Maximum: 1024</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. <p>Array Length: 0 - 100</p>
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. <p>Minimum: 0 Maximum: 51200</p>
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> <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATION_IN_PROGRESS • CREATION_FAILED • AVAILABLE • APPLY_IN_PROGRESS • APPLIED
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:** • 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 2-209 VarsStructure

Parameter	Type	Description
var_key	String	Variable name. Minimum: 1 Maximum: 32
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. Minimum: 0 Maximum: 2048

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 2-210 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 2-211 KmsStructure

Parameter	Type	Description
id	String	<p>KMS key ID is used by RFS during decryption. Generally, the key ID is that used for encryption.</p> <p>Minimum: 36</p> <p>Maximum: 36</p>

Parameter	Type	Description
cipher_text	String	Ciphertext of data encryption key. Minimum: 2 Maximum: 2048

Table 2-212 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 2-213 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorization_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-214 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11

Parameter	Type	Description
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-215 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-216 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_auth orization_mes sage	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-217 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-218 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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.
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 2-219 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 Minimum: 3 Maximum: 64
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. Minimum: 1 Maximum: 128

Parameter	Mandatory	Type	Description
execution_plan_name	Yes	String	An execution plan name is unique within its domain (domain_id), region, project (project_id), and stack (stack_id). It is case-sensitive and starts with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed. Minimum: 1 Maximum: 128

Table 2-220 Query Parameters

Parameter	Mandatory	Type	Description
stack_id	No	String	Unique stack ID. It is a UUID generated by RFS when a stack is created. Stack names are unique at one specific time, so you can create a stack named HelloWorld and another stack with the same name after deleting the first one. For parallel development, team members may want to ensure that they are operating the stack they created, not one with the same name created by other members after deleting the previous one. To avoid this mismatch, check the ID, since RFS ensures each stack has a unique ID that does not change with updates. If the stack_id value differs from the current stack ID, 400 is returned. Minimum: 36 Maximum: 36

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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-221 Request header parameters

Parameter	Mandatory	Type	Description
Client-Request-Id	Yes	String	<p>A unique request ID is specified by a user to locate a request. UUID is recommended.</p> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-222 Response body parameters

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

Table 2-223 ItemsResponse

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>

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>

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. If count is used in a template, index is a number starting from 0.</p> <p>For example, in the following HCL template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] identify two resources.</p> <pre>resource "huaweicloud_vpc" "my_hello_world_vpc" { count = 2 name = "test_vpc" }</pre> <p>In a JSON template, huaweicloud_vpc.my_hello_world_vpc[0] and huaweicloud_vpc.my_hello_world_vpc[1] 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. 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 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>

Parameter	Type	Description
		} }
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 2-224 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 Enumeration values: <ul style="list-style-type: none"> • PRE_PAID • POST_PAID • FREE
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.
original_price	Double	Original price of the resource. The value is rounded up to two decimal places. The default currency is USD.

Parameter	Type	Description
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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • HOUR • DAY • MONTH • YEAR • BYTE • MB • GB
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.

Status code: 400

Table 2-225 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-226 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-227 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-228 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-229** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-230** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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": "CNY",
  "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 2-231 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 Minimum: 3 Maximum: 64

Request Parameters

Table 2-232 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. Minimum: 36 Maximum: 128

Table 2-233 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. <p>Minimum: 0 Maximum: 51200</p>

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.</p> <p>The OBS address allows mutual access to 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 corresponding file must be a tf file or a zip package.</p> <p>A pure .tf file must end with .tf or .tf.json and comply with the HCL syntax.</p> <p>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.</p> <p>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,

Parameter	Mandatory	Type	Description
			<p>you are advised to use vars_structure to change the information to a variable and set the encryption field to enable encrypted transmission.</p> <ul style="list-style-type: none"> If the template file corresponding to template_uri is of zip type, the length of the internal file or folder name must not exceed 255 bytes, the length of the deepest path must not exceed 2048 bytes, and the size of the zip package must not exceed 1MB. <p>Minimum: 0 Maximum: 2048</p>

Response Parameters

Status code: 200

Table 2-234 Response body parameters

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

Table 2-235 VariableResponse

Parameter	Type	Description
name	String	<p>Variable name.</p> <p>For example, in the following HCL template, the value of name is my_hello_world_variable.</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) > 0 && 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 my_hello_world_variable.</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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && 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) > 0 && substr(var.my_hello_world_variable, 0, 5) == \"hello \"}", "error_message": "my_hello_world_variable should start with 'hello'." }] }] } }</pre>
validations	Array of VariableValidationResponse objects	Variable verification module.

Table 2-236 VariableValidationResponse

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

Status code: 400

Table 2-237 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-238 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-239 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-240 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-241 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Parse template variables in the URI.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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 2-242 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64

Request Parameters

Table 2-243 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-244 Response body parameters

Parameter	Type	Description
templates	Array of Template objects	Template list. Array Length: 0 - 100

Table 2-245 Template

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service. Minimum: 36 Maximum: 36
template_name	String	Name of the template to be created. Minimum: 1 Maximum: 128
template_description	String	Template description. It can be used by users to identify their own templates. Minimum: 0 Maximum: 1024
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. Minimum: 2 Maximum: 11
latest_version_description	String	Description of the latest template version. Minimum: 0 Maximum: 1024

Status code: 400**Table 2-246** Response body parameters

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

Status code: 401

Table 2-247 Response body parameters

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

Status code: 403**Table 2-248** Response body parameters

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

Status code: 429**Table 2-249** Response body parameters

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

Status code: 500**Table 2-250** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error 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 2-251 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128

Table 2-252 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-253 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 400

Table 2-254 Response body parameters

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

Status code: 401

Table 2-255 Response body parameters

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

Status code: 403

Table 2-256 Response body parameters

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

Status code: 404

Table 2-257 Response body parameters

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

Status code: 429

Table 2-258 Response body parameters

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

Status code: 500

Table 2-259 Response body parameters

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

Example Requests

- Delete a template.
DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template
- Delete a template and check whether the template ID matches the current template.
DELETE https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template?template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3

Example Responses

None

Status Codes

Status Code	Description
204	Template deleted. No data returned.
400	Invalid request.
401	Authentication failed.
403	The user does not have the permission to call this API.
404	The template does not exist.
429	Too frequent requests.
500	Internal server error.

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 2-260 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128

Request Parameters

Table 2-261 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. Minimum: 36 Maximum: 128

Table 2-262 Request body parameters

Parameter	Mandatory	Type	Description
template_id	No	String	Unique template ID. It is randomly generated by the template service. Minimum: 36 Maximum: 36
template_description	No	String	Template description. It can be used by users to identify their own templates. Minimum: 0 Maximum: 1024

Response Parameters

Status code: 400

Table 2-263 Response body parameters

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

Status code: 401

Table 2-264 Response body parameters

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

Status code: 403

Table 2-265 Response body parameters

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

Status code: 404**Table 2-266** Response body parameters

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

Status code: 429**Table 2-267** Response body parameters

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

Status code: 500**Table 2-268** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error 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 2-269 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128

Table 2-270 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-271 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-272 Response body parameters

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service. Minimum: 36 Maximum: 36
template_name	String	Name of the template to be created. Minimum: 1 Maximum: 128
template_description	String	Template description. It can be used by users to identify their own templates. Minimum: 0 Maximum: 1024
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.

Status code: 400**Table 2-273** Response body parameters

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

Status code: 401**Table 2-274** Response body parameters

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

Status code: 403**Table 2-275** Response body parameters

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

Status code: 404**Table 2-276** Response body parameters

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

Status code: 429**Table 2-277** Response body parameters

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

Status code: 500**Table 2-278** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error 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 2-279 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128

Table 2-280 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-281 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-282 Response body parameters

Parameter	Type	Description
versions	Array of TemplateVersion objects	Template version list. Array Length: 0 - 100

Table 2-283 TemplateVersion

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service. Minimum: 36 Maximum: 36
template_name	String	Name of the template to be created. Minimum: 1 Maximum: 128
version_description	String	Description of a template version. It can be used by users to identify their own template versions. Minimum: 0 Maximum: 1024
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.

Parameter	Type	Description
version_id	String	Template version ID. Minimum: 2 Maximum: 11

Status code: 400

Table 2-284 Response body parameters

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

Status code: 401

Table 2-285 Response body parameters

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

Status code: 403

Table 2-286 Response body parameters

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

Status code: 404

Table 2-287 Response body parameters

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

Status code: 429**Table 2-288** Response body parameters

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

Status code: 500**Table 2-289** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error 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 2-290 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128
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. Minimum: 2 Maximum: 11

Table 2-291 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-292 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 400

Table 2-293 Response body parameters

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

Status code: 401

Table 2-294 Response body parameters

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

Status code: 403

Table 2-295 Response body parameters

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

Status code: 404

Table 2-296 Response body parameters

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

Status code: 429

Table 2-297 Response body parameters

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

Status code: 500

Table 2-298 Response body parameters

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

Status Code	Description
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.

2.5.7 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.

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 2-299 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128
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. Minimum: 2 Maximum: 11

Table 2-300 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-301 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 307

Table 2-302 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.

Status code: 400

Table 2-303 Response body parameters

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

Status code: 401

Table 2-304 Response body parameters

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

Status code: 403**Table 2-305** Response body parameters

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

Status code: 404**Table 2-306** Response body parameters

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

Status code: 429**Table 2-307** Response body parameters

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

Status code: 500**Table 2-308** Response body parameters

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

Example Requests

- Obtain a specified version of a specified template.
GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1
- Obtain a specified version of a specified template and check whether the template ID matches the current template.

```
GET https://{endpoint}/v1/c364070ab35041ddae68cf8b4839b60f/templates/my_template/versions/V1?
template_id=1b15e005-bdbb-4bd7-8f9a-a09b6774b4b3
```

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 2-309 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
template_name	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128
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. Minimum: 2 Maximum: 11

Table 2-310 Query Parameters

Parameter	Mandatory	Type	Description
template_id	No	String	ID of a template. If template_id exists, the template service checks whether template_id matches template_name . If not, 400 is returned. Minimum: 36 Maximum: 36

Request Parameters

Table 2-311 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200**Table 2-312** Response body parameters

Parameter	Type	Description
template_id	String	Unique template ID. It is randomly generated by the template service. Minimum: 36 Maximum: 36
template_name	String	Name of the template to be created. Minimum: 1 Maximum: 128
version_description	String	Description of a template version. It can be used by users to identify their own template versions. Minimum: 0 Maximum: 1024
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 2-313 Response body parameters

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

Status code: 401

Table 2-314 Response body parameters

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

Status code: 403

Table 2-315 Response body parameters

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

Status code: 404

Table 2-316 Response body parameters

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

Status code: 429

Table 2-317 Response body parameters

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

Status code: 500

Table 2-318 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error 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.
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 2-319 Query Parameters

Parameter	Mandatory	Type	Description
filter	No	String	<p>Filter condition.</p> <ul style="list-style-type: none"> • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion. <p>Minimum: 0 Maximum: 512</p>
sort_key	No	Array	<p>Sorting field. Only create_time is supported.</p> <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • create_time
sort_dir	No	Array	<p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> • <i>asc</i>: ascending order • <i>desc</i>: descending order <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • asc • desc

Request Parameters

Table 2-320 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-321 Response body parameters

Parameter	Type	Description
stack_sets	Array of StackSet objects	Stack sets.

Table 2-322 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</p>
stack_set_description	String	<p>Description of a stack set. It can be used by customers to identify their own stack sets.</p> <p>Minimum: 0</p> <p>Maximum: 1024</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. The permission model can be: * <i>SERVICE_MANAGED</i>: You can use this model to create stack sets only after setting RFS as a trustworthy service in your organization. You do not need to manually create agencies. RFS automatically creates agencies for you based on the organization. Only an organization administrator or a delegated administrator can create stack sets using <i>SERVICE_MANAGED</i> permissions. * <i>SELF_MANAGED</i>: For deployment, you 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 even if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.</p> <p>Default: SELF_MANAGED</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● SELF_MANAGED
status	String	<p>The stack set status can be:</p> <ul style="list-style-type: none"> ● <i>IDLE</i>: The stack set is idle. ● <i>OPERATION_IN_PROGRESS</i>: The stack set operation is in progress. ● <i>DEACTIVATED</i>: The stack set is disabled. <p>Enumeration values:</p> <ul style="list-style-type: none"> ● IDLE ● OPERATION_IN_PROGRESS ● DEACTIVATED
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.

Status code: 400

Table 2-323 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-324 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-325 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-326 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-327** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-328 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. Minimum: 36 Maximum: 128

Table 2-329 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. Minimum: 1 Maximum: 128
stack_set_description	No	String	Description of a stack set. It can be used by customers to identify their own stack sets. Minimum: 0 Maximum: 1024

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. The permission model can be: * <i>SERVICE_MANAGED</i>. You can use this model to create stack sets only after setting RFS as a trustworthy service in your organization. You do not need to manually create agencies. RFS automatically creates agencies for you based on the organization. Only an organization administrator or a delegated administrator can create stack sets using <i>SERVICE_MANAGED</i> permissions. * <i>SELF_MANAGED</i>. For deployment, you 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 even if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.</p> <p>Default: SELF_MANAGED</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • SELF_MANAGED

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> <p>Minimum: 0 Maximum: 64</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> <p>Minimum: 0 Maximum: 64</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>Note:</p> <ul style="list-style-type: none"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext. <p>Minimum: 0 Maximum: 51200</p>

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>The OBS address allows mutual access to 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 corresponding file must be a tf file or a zip package. A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded.</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 <code>template_body</code> or <code>template_uri</code>, not both.</p> <p>Note:</p> <ul style="list-style-type: none"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to <code>template_uri</code> as plaintext. <ul style="list-style-type: none"> If the template file specified by the <code>template_uri</code> is in .zip format, the names of

Parameter	Mandatory	Type	Description
			<p>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 the .zip package cannot exceed 1 MB.</p> <p>Minimum: 0 Maximum: 2048</p>

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>The OBS address allows mutual access to 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> <ul style="list-style-type: none"> vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. <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"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext. <p>Minimum: 0 Maximum: 2048</p>

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"> • 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. <p>Minimum: 0 Maximum: 51200</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> <p>Minimum: 0 Maximum: 1024</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>

Response Parameters

Status code: 201

Table 2-330 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> <p>Minimum: 36</p> <p>Maximum: 36</p>

Status code: 400**Table 2-331** Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11</p> <p>Maximum: 11</p>
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-332 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-333 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-334 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-335 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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

Status Code	Description
400	Invalid request.
401	Authentication failed.
403	1. The user does not have the permission to call this API. 2. The maximum number of stack sets has been reached.
409	Creation requests conflict. The stack set with the same name already exists.
429	Too frequent requests.
500	Internal server error.

2.6.3 Obtaining a Stack Set Template

Function

ShowStackSetTemplate

This API obtains the template of a specified stack set.

If the template is successfully obtained, the template download link (OBS Pre Signed address, valid for 5 minutes) is returned in temporary redirection mode. Most clients automatically redirect and download the template. If automatic redirection is not performed, the template download link is obtained by referring to the HTTP redirection rule and manually download the template.

URI

GET /v1/stack-sets/{stack_set_name}/templates

Table 2-336 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. Minimum: 1 Maximum: 128

Table 2-337 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-338 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> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 307

Table 2-339 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 2-340 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-341 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-342 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-343 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-344 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-345 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Obtaining 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

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 2-346 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. Minimum: 1 Maximum: 128

Table 2-347 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> <p>Minimum: 36</p> <p>Maximum: 36</p>

Parameter	Mandatory	Type	Description
filter	No	String	<p>Filter condition.</p> <ul style="list-style-type: none"> • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion. <p>Minimum: 0 Maximum: 512</p>
sort_key	No	Array	<p>Sorting field. Only create_time is supported.</p> <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • create_time
sort_dir	No	Array	<p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> • <i>asc</i>: ascending order • <i>desc</i>: descending order <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • asc • desc

Request Parameters

Table 2-348 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200**Table 2-349** Response body parameters

Parameter	Type	Description
stack_set_operations	Array of StackSetOperation objects	Stack set operations.

Table 2-350 StackSetOperation

Parameter	Type	Description
operation_id	String	Stack set operation ID. It is a UUID generated by RFS when a stack set operation is created.

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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATE_STACK_INSTANCES • DELETE_STACK_INSTANCES • DEPLOY_STACK_SET • DEPLOY_STACK_INSTANCES • UPDATE_STACK_INSTANCES

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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • QUEUE_IN_PROGRESS • OPERATION_IN_PROGRESS • OPERATION_COMPLETE • OPERATION_FAILED • STOP_IN_PROGRESS • STOP_COMPLETE • STOP_FAILED
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 <code>ListStackInstances</code> API to obtain <code>status_message</code> of the stack instance.</p>
create_time	String	<p>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.</p>
update_time	String	<p>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.</p>

Status code: 400

Table 2-351 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-352 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-353 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-354 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-355 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-356 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-357 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. Minimum: 1 Maximum: 128

Table 2-358 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-359 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> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-360 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</p>
stack_set_description	String	<p>Description of a stack set. It can be used by customers to identify their own stack sets.</p> <p>Minimum: 0</p> <p>Maximum: 1024</p>

Parameter	Type	Description
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> <p>Minimum: 0 Maximum: 1024</p>
permission_model	String	<p>Permission model. It defines the creation mode of the agency required for RFS to operate stack sets. The permission model can be: * <i>SERVICE_MANAGED</i>: You can use this model to create stack sets only after setting RFS as a trustworthy service in your organization. You do not need to manually create agencies. RFS automatically creates agencies for you based on the organization. Only an organization administrator or a delegated administrator can create stack sets using <i>SERVICE_MANAGED</i> permissions. * <i>SELF_MANAGED</i>: For deployment, you 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 even if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.</p> <p>Default: SELF_MANAGED</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● SELF_MANAGED

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. 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> <p>Minimum: 0 Maximum: 64</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> <p>Minimum: 0 Maximum: 64</p>

Parameter	Type	Description
status	String	<p>The stack set status can be:</p> <ul style="list-style-type: none"> • <i>IDLE</i>: The stack set is idle. • <i>OPERATION_IN_PROGRESS</i>: The stack set operation is in progress. • <i>DEACTIVATED</i>: The stack set is disabled. <p>Enumeration values:</p> <ul style="list-style-type: none"> • IDLE • OPERATION_IN_PROGRESS • DEACTIVATED
vars_uri_content	String	File content corresponding to vars_uri.
vars_body	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"> • 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. <p>Minimum: 0 Maximum: 51200</p>
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_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_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>

Status code: 400

Table 2-361 Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11</p> <p>Maximum: 11</p>
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-362 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-363** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-364** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-365 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-366 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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"  
}
```

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 2-367 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. Minimum: 1 Maximum: 128

Table 2-368 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. Minimum: 36 Maximum: 36

Parameter	Mandatory	Type	Description
filter	No	String	<p>Filter condition.</p> <ul style="list-style-type: none"> • The AND operator is defined by commas (,). • The OR operator is defined using a vertical bar (). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • The filter operator only supports the equal sign (=). • The filter parameter name and value can contain only letters, digits, and underscores (_). • Semicolons (;) are not allowed in filter criteria. If semicolons (;) are used, the filter criteria will be invalid. • A filter parameter can be related to only one AND condition. Multiple OR conditions in an AND condition can be related to only one filter criterion. <p>Minimum: 0 Maximum: 512</p>
sort_key	No	Array	<p>Sorting field. Only create_time is supported.</p> <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • create_time
sort_dir	No	Array	<p>Specify an ascending or descending order.</p> <ul style="list-style-type: none"> • <i>asc</i>: ascending order • <i>desc</i>: descending order <p>Minimum: 1</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • asc • desc

Request Parameters

Table 2-369 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200

Table 2-370 Response body parameters

Parameter	Type	Description
stack_instances	Array of StackInstance objects	Stack instance list.

Table 2-371 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Type	Description
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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • WAIT_IN_PROGRESS • CANCEL_COMPLETE • OPERATION_IN_PROGRESS • OPERATION_FAILED • INOPERABLE • OPERATION_COMPLETE
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>

Parameter	Type	Description
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. Minimum: 1 Maximum: 128
stack_domain_id	String	Tenant ID of the stack associated with the stack instance.
latest_stack_set_operation_id	String	Stack set operation ID for the latest deployment of the stack instance. It is a UUID generated by RFS when a stack set operation is created.
region	String	Region of the stack associated with the stack instance.
create_time	String	Time when a stack instance is created. It uses a UTC (YYYY-MM-DDTHH:mm:ss.SSSZ) format, for example, 1970-01-01T00:00:00.000Z.
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 2-372** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-373 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-374** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-375** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-376 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-377 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-378 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-379 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. Minimum: 36 Maximum: 128

Table 2-380 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> <p>Minimum: 36 Maximum: 36</p>
deployment_targets	Yes	deployment_targets object	Deployment target information.

Parameter	Mandatory	Type	Description
var_overrides	No	var_overrides 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"> • 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>. • 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"> - 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>. - To use the variable values recorded in the current stack instance for deployment, <code>var_overrides</code> are not required.

Table 2-381 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"> 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. *
domain_ids	No	Array of strings	<p>When SELF_MANAGED permissions are used, the information about the tenant 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Table 2-382 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>The OBS address allows mutual access to 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> <ul style="list-style-type: none"> vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. <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"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext. <p>Minimum: 0 Maximum: 2048</p>

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"> • 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. <p>Minimum: 0 Maximum: 51200</p>
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>

Response Parameters

Status code: 202

Table 2-383 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. Minimum: 36 Maximum: 36

Status code: 400

Table 2-384 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-385 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-386 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404**Table 2-387** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-388** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-389 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Assign member account information through the array of domain IDs.

```
POST https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances
```

```
{
  "deployment_targets": {
    "regions": [ "cn-north-7" ],
    "domain_ids": [ "6cbcca2a2f114a63841bdb7a19b7b12", "1e03325ba3cc47b1fdb03f3771bbb4f3" ]
  }
}
```

- Assign member account information through the URL signed by domain IDs.

```
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"
  }
}
```

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.

Status Code	Description
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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 2-390 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-391 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> <p>Minimum: 36 Maximum: 128</p>

Table 2-392 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> <p>Minimum: 36 Maximum: 36</p>
deployment_targets	Yes	deployment_targets object	Deployment target information.

Table 2-393 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"> 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. *
domain_ids	No	Array of strings	<p>When SELF_MANAGED permissions are used, the information about the tenant 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Response Parameters

Status code: 202

Table 2-394 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. Minimum: 36 Maximum: 36

Status code: 400

Table 2-395 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-396 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-397 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-398 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-399 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-400 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Assign member account information through the URL signed by domain IDs.

```
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"
  }
}
```

- Assign member account information through the array of domain IDs.

```
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" ]
  }
}
```

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.

Status Code	Description
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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 2-401 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-402 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. Minimum: 36 Maximum: 128

Table 2-403 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> <p>Minimum: 36 Maximum: 36</p>
deployment_targets	Yes	deployment_targets object	Deployment target information.

Parameter	Mandatory	Type	Description
var_overrides	No	var_overrides 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"> • 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>. • 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"> - 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>. - To use the variable values recorded in the current stack instance for deployment, <code>var_overrides</code> are not required.

Table 2-404 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"> 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. *
domain_ids	No	Array of strings	<p>When SELF_MANAGED permissions are used, the information about the tenant 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Table 2-405 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>The OBS address allows mutual access to 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> <ul style="list-style-type: none"> vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. <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"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext. <p>Minimum: 0 Maximum: 2048</p>

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"> • 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. <p>Minimum: 0 Maximum: 51200</p>
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>

Response Parameters

Status code: 202

Table 2-406 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. Minimum: 36 Maximum: 36

Status code: 400

Table 2-407 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-408 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-409 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-410 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-411 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-412 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Assign the new variable through vars uri, retain the overridden variable var_key_1 in the stack instance, and trigger deployment.

```
PATCH https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances
```

```
{
  "deployment_targets": {
    "regions": [ "cn-north-7" ],
    "domain_ids_uri": "https://your-bucket.cn-north-7.myhuaweicloud.com/my-domain-ids.csv"
  },
  "var_overrides": {
    "vars_uri": "https://{bucket_name}.{region}.myhuaweicloud.com/my-hello-world-vars.tfvars",
    "use_stack_set_vars": [ "var_key_1" ]
  },
  "stack_set_id": "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

- The stack instance whose tenant ID is my-domain-id is deployed in cn-north-7. The variables are not overridden.

```
PATCH https://{endpoint}/v1/stack-sets/my_hello_world_stack_set/stack-instances
```

```
{
  "deployment_targets": {
    "regions": [ "cn-north-7" ],
    "domain_ids": [ "my-domain-id" ]
  },
  "stack_set_id": "1b15e005-bdbb-4bd7-8f9a-a09b6774b4b4"
}
```

Example Responses

Status code: 202

The request is accepted and processed asynchronously.

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

Status Codes

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

2.6.10 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 2-413 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-414 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. Minimum: 36 Maximum: 128

Table 2-415 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> <p>Minimum: 36 Maximum: 36</p>
deployment_targets	Yes	deployment_targets object	Deployment target information.

Parameter	Mandatory	Type	Description
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>Note:</p> <ul style="list-style-type: none"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores template_body as plaintext. <p>Minimum: 0 Maximum: 51200</p>

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>The OBS address allows mutual access to 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 corresponding file must be a tf file or a zip package. A .tf file must be named with a .tf or .tf.json suffix, compatible with HCL, and UTF-8 encoded.</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 <code>template_body</code> or <code>template_uri</code>, not both.</p> <p>Note:</p> <ul style="list-style-type: none"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the template file content corresponding to <code>template_uri</code> as plaintext. <ul style="list-style-type: none"> If the template file specified by the <code>template_uri</code> is in .zip format, the names of

Parameter	Mandatory	Type	Description
			<p>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 the .zip package cannot exceed 1 MB.</p> <p>Minimum: 0 Maximum: 2048</p>

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>The OBS address allows mutual access to 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> <ul style="list-style-type: none"> vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. <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"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext. <p>Minimum: 0 Maximum: 2048</p>

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"> • 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. <p>Minimum: 0 Maximum: 51200</p>

Parameter	Mandatory	Type	Description
var_overrides	No	var_overrides 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"> • 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>. • 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"> - 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>. - To use the variable values recorded in the current stack instance for deployment, <code>var_overrides</code> are not required.

Table 2-416 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">• 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. *
domain_ids	No	Array of strings	<p>When SELF_MANAGED permissions are used, the information about the tenant 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Table 2-417 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>The OBS address allows mutual access to 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> <ul style="list-style-type: none"> vars_uri directs to a pre-signed URL of OBS. Currently, other addresses are not supported. RFS supports vars_structure, vars_body, and vars_uri. If they declare the same variable, error 400 will be reported. <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"> Stack sets do not encrypt sensitive data. RFS uses, logs, displays, and stores the variable file content corresponding to vars_uri as plaintext. <p>Minimum: 0 Maximum: 2048</p>

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"> • 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. <p>Minimum: 0 Maximum: 51200</p>
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>

Response Parameters

Status code: 202

Table 2-418 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. Minimum: 36 Maximum: 36

Status code: 400

Table 2-419 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-420 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-421 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-422 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-423 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-424 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-425 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

The following example shows how to pass template and parameter information using OBS Signed URL:

```
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" ]
  }
}
```

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. 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.

2.6.11 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 2-426 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-427 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. Minimum: 36 Maximum: 128

Table 2-428 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> <p>Minimum: 36 Maximum: 36</p>
deployment_targets	Yes	deployment_targets object	Deployment target information.

Table 2-429 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"> 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. *
domain_ids	No	Array of strings	<p>When SELF_MANAGED permissions are used, the information about the tenant 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Mandatory	Type	Description
domain_ids_uri	No	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Response Parameters

Status code: 202

Table 2-430 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. Minimum: 36 Maximum: 36

Status code: 400

Table 2-431 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-432 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-433 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-434 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-435 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-436 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Example Requests

- Assign member account information through the URL signed by domain IDs.

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"
  }
}
```

- Assign member account information through the array of domain IDs.

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" ]
  }
}
```

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.

Status Code	Description
403	1. The user does not have the permission to call this API. 2. The stack set status is invalid. Parallel operations are not allowed.
404	The stack set does not exist.
429	Too frequent requests.
500	Internal server error.

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 2-437 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. Minimum: 1 Maximum: 128

Table 2-438 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-439 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> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 400

Table 2-440 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-441 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-442 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-443 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-444 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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. 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 2-445 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. Minimum: 1 Maximum: 128

Request Parameters

Table 2-446 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. Minimum: 36 Maximum: 128

Table 2-447 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> <p>Minimum: 36</p> <p>Maximum: 36</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> <p>Minimum: 0</p> <p>Maximum: 1024</p>

Parameter	Mandatory	Type	Description
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> <p>Minimum: 0 Maximum: 1024</p>

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. The permission model can be: * <i>SERVICE_MANAGED</i>. You can use this model to create stack sets only after setting RFS as a trustworthy service in your organization. You do not need to manually create agencies. RFS automatically creates agencies for you based on the organization. Only an organization administrator or a delegated administrator can create stack sets using <i>SERVICE_MANAGED</i> permissions. * <i>SELF_MANAGED</i>. For deployment, you 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 even if the agency does not exist or is incorrect. An error is reported only when the stack set or stack instance is deployed.</p> <p>Default: SELF_MANAGED</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • SELF_MANAGED

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> <p>Minimum: 0 Maximum: 64</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> <p>Minimum: 0 Maximum: 64</p>

Parameter	Mandatory	Type	Description
administration_agency_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_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>

Response Parameters

Status code: 400

Table 2-448 Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11</p> <p>Maximum: 11</p>
error_msg	String	Response message.

Parameter	Type	Description
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-449 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-450 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-451 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-452 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-453 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-454 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 stack set permission model.

```
PATCH https://{endpoint}/v1/stack-sets/{stack_set_name}
{
  "permission_model" : "SELF_MANAGED",
  "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 2-455 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. Minimum: 1 Maximum: 128
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. Minimum: 36 Maximum: 36

Table 2-456 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-457 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> <p>Minimum: 36 Maximum: 128</p>

Response Parameters

Status code: 200

Table 2-458 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. Minimum: 36 Maximum: 36
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. Minimum: 36 Maximum: 36
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. Minimum: 1 Maximum: 128

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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • QUEUE_IN_PROGRESS • OPERATION_IN_PROGRESS • OPERATION_COMPLETE • OPERATION_FAILED • STOP_IN_PROGRESS • STOP_COMPLETE • STOP_FAILED
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 <code>ListStackInstances</code> API to obtain <code>status_message</code> of the stack instance.</p>

Parameter	Type	Description
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. <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATE_STACK_INSTANCES • DELETE_STACK_INSTANCES • DEPLOY_STACK_SET • DEPLOY_STACK_INSTANCES • UPDATE_STACK_INSTANCES
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. 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> <p>Minimum: 0</p> <p>Maximum: 64</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. 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> <p>Minimum: 0</p> <p>Maximum: 64</p>
deployment_targets	deployment_targets object	Deployment target information.
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.

Parameter	Type	Description
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.

Table 2-459 deployment_targets

Parameter	Type	Description
regions	Array of strings	Regions involved in the stack set operations are specified by the user. <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. *
domain_ids	Array of strings	When SELF_MANAGED permissions are used, the information about the tenant IDs involved in this operation is specified by the user. <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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 1</p> <p>Maximum: 64</p>

Parameter	Type	Description
domain_ids_uri	String	<p>When SELF_MANAGED permissions are used, the OBS address of the tenant 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"> 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>You can specify either domain_ids or domain_ids_uri, but not both.</p> <p>Minimum: 0 Maximum: 2048</p>

Status code: 400

Table 2-460 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authorized_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-461 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-462 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-463 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-464 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-465 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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"  
}
```

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.
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 2-466 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. Minimum: 1 Maximum: 128

Parameter	Mandatory	Type	Description
stack_instance_addr	Yes	String	<p>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).</p> <p>Minimum: 1</p>

Table 2-467 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> <p>Minimum: 36 Maximum: 36</p>

Request Parameters

Table 2-468 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. Minimum: 36 Maximum: 128

Response Parameters

Status code: 200**Table 2-469** Response body parameters

Parameter	Type	Description
stack_set_id	String	Unique ID of a stack set. It is a UUID generated by RFS when a stack is created. Stack set names are unique only at one specific time, so you can create a stack set named HelloWorld and another stack set with the same name after deleting the first one. For parallel development in a team, users may want to ensure that the stack set they operate is the one created by themselves, not the one with the same name created by other teammates after deleting the previous one. Therefore, they can use this ID for strong matching. RFS ensures that the ID of each stack set is different and does not change with updates. If the stack_set_id value is different from the current stack set ID, 400 is returned. Minimum: 36 Maximum: 36

Parameter	Type	Description
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. Minimum: 1 Maximum: 128
status	String	Stack instance status can be: <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. Enumeration values: <ul style="list-style-type: none"> • WAIT_IN_PROGRESS • CANCEL_COMPLETE • OPERATION_IN_PROGRESS • OPERATION_FAILED • INOPERABLE • OPERATION_COMPLETE
status_message	String	When the stack instance is in an INOPERABLE or OPERATION_FAILED state, brief error information is displayed for debugging.

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 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	<p>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.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>
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.
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.

Parameter	Type	Description
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 2-470 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 2-471 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.

Parameter	Type	Description
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401**Table 2-472** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-473** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-474 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429**Table 2-475** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500**Table 2-476** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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 2-477 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. Minimum: 36 Maximum: 128

Table 2-478 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> <p>Minimum: 1 Maximum: 64</p>
provider_description	No	String	<p>Description of a private provider. It can be used by customers to identify their own private providers.</p> <p>Minimum: 0 Maximum: 1024</p>
provider_version	No	String	<p>Private provider version. The version number follows the Semantic Version and is customized by the user.</p> <p>Minimum: 5 Maximum: 128</p>

Parameter	Mandatory	Type	Description
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. Minimum: 0 Maximum: 1024
function_graph_urn	No	String	Uniform resource identifier for FunctionGraph methods, it can be used to uniquely identify FunctionGraph methods. Only supports the function graph urns in the same region as RFS. If provided in other regions, 400 is returned. For more detail about this parameter, please refer to the official documentation: https://support.huaweicloud.com/api-functiongraph/functiongraph_06_0102.html Minimum: 32 Maximum: 256

Response Parameters

Status code: 201

Table 2-479 Response body parameters

Parameter	Type	Description
provider_id	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> <p>Minimum: 36</p> <p>Maximum: 36</p>
provider_source	String	<p>When users use private providers and define required_providers information in the template, they need to specify the source using provider_source value.</p> <p>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.</p>

Status code: 400**Table 2-480** Response body parameters

Parameter	Type	Description
error_code	String	<p>Response code.</p> <p>Minimum: 11</p> <p>Maximum: 11</p>
error_msg	String	Response message.

Parameter	Type	Description
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401

Table 2-481 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403

Table 2-482 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-483 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-484 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-485 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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

None

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 exist, RFS checks whether they match. If provider_id does not match with 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 2-486 Path Parameters

Parameter	Mandatory	Type	Description
<code>provider_name</code>	Yes	String	Private provider name. The name is unique within its domain (<code>domain_id</code>) and region. Only letters, digits, and hyphens (-) are allowed. The name only supports starting and ending with lowercase English and numbers. Minimum: 1 Maximum: 64

Request Parameters

Table 2-487 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. Minimum: 36 Maximum: 128

Table 2-488 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> <p>Minimum: 36 Maximum: 36</p>
provider_version	Yes	String	<p>Private provider version. The version number follows the Semantic Version and is customized by the user.</p> <p>Minimum: 5 Maximum: 128</p>

Parameter	Mandatory	Type	Description
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. Minimum: 0 Maximum: 1024
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 Minimum: 32 Maximum: 256

Response Parameters

Status code: 400

Table 2-489 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.

Parameter	Type	Description
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 401**Table 2-490** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 403**Table 2-491** Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 404

Table 2-492 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 409

Table 2-493 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 429

Table 2-494 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

Status code: 500

Table 2-495 Response body parameters

Parameter	Type	Description
error_code	String	Response code. Minimum: 11 Maximum: 11
error_msg	String	Response message.
encoded_authentication_message	String	The message contains information about unauthorized requests.

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.

Status Code	Description
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.

3 Application Orchestration Service

- [API Overview](#)
- [Calling APIs](#)
- [Getting Started](#)
- [Template Management](#)
- [Stack Management](#)

3.1 API Overview

Category	Description
Template management APIs	AOS template management APIs, which include APIs for creating, querying, updating, downloading, and deleting AOS templates. These APIs enable you to create, update, and delete templates; query templates, template lists, and template inputs.
Stack management APIs	AOS stack management APIs, which include APIs for creating, querying, and deleting stacks. These APIs enable you to create and delete stacks, execute stack lifecycle; query stacks, stack lists, stack elements, stack element lists, stack input and output, stack execution records, and lists of stack execution records.

Template Management APIs

AOS template management APIs include APIs for creating, querying, updating, and deleting AOS templates. These APIs enable you to create, update, download, and delete templates; query templates, template lists, and template inputs.

Table 3-1 Template management APIs

API	Description
Creating a template	This API is used to create a template by uploading a local template to the server.
Querying a template list	This API is used to query a template list based on the parameters provided.
Updating a template	This API is used to update a template through either uploading local binary files or providing a template URL. The update can be performed only when the template has not been used to create any stacks or stacks created from this template have been deleted.
Deleting a template	This API is used to delete a specific template. The deletion can be performed only when the template has not been used to create a stack or stacks created from this template have been deleted.
Downloading a template	This API is used to download a specified template.
Querying a template	This API is used to query details about a specified template, including the template name, version, description, creation time, and update time.
Querying the input parameters of a template	This API is used to query the input parameters of a specific template.

Stack Management APIs

AOS stack management APIs include APIs for creating, querying, and deleting stacks. These APIs enable you to create and delete stacks, execute stack lifecycle; query stacks, stack lists, stack elements, stack element lists, stack input and output, stack execution records, and lists of stack execution records.

Table 3-2 Stack management APIs

API	Description
Creating a stack	This API is used to create a stack. Stack inputs consist of templates and input parameters. <ul style="list-style-type: none">• A template defines the framework of a stack, and determines the structure of the nodes in the stack, the relationships between nodes, and the value or source of the attributes of each node.• Input parameters are one of the sources of the node attribute values in the template. They are defined in the input fields of the template and are triggered by the get_input function in the template.
Deleting a stack	This API is used to delete a specific stack.
Executing a stack lifecycle	This API is used to perform lifecycle operations for a specific stack.
Querying the stack list	This API is used to query a stack list.
Querying a stack	This API is used to query details about a specified stack, including the stack name, stack description, template ID, template name, and stack status.
Querying a stack element list	This API is used to query a stack element list.
Querying a stack element	This API is used to query details about an element in a stack.
Querying a stack output	This API is used to query the output of a specified stack.
Querying a stack input	This API is used to query the input of a specific stack.
Querying an execution record of a stack	This API is used to query a stack execution record.
Querying a stack execution record list	This API is used to query the latest execution record list of a stack.

3.2 Calling APIs

3.2.1 Making an API Request

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

Request URI

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.

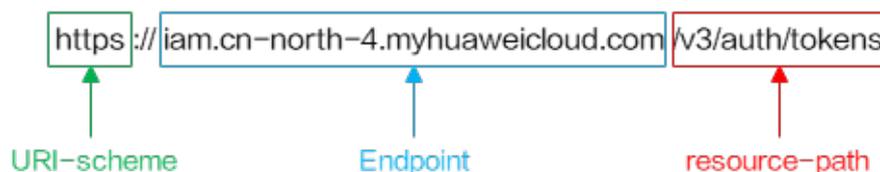
Table 3-3 Parameters in a URI

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 3-1 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 3-4 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 3-5](#) lists common request header fields.

Table 3-5 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>MIIPAgYJKoZlhvcNAQc-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 *xxxxxxxxxxxxxxxxxxx* (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.

3.2.2 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.

3.2.3 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 3-2 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → MIiYXQYJKoZIhvcNAQcCoIIYtJCCGEOCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IiwMTktMDItMTNUMD
fj3Kjs6YgKnpVNRbW2eZ5eb78SZOkqjACgkqlqO1wi4JIGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgz/VeFYtLWT1GSO0zxKZmlQHq82HBqHdgIZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jggIFkNPQuFSOU8+uSsttVwrtnfsC+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.

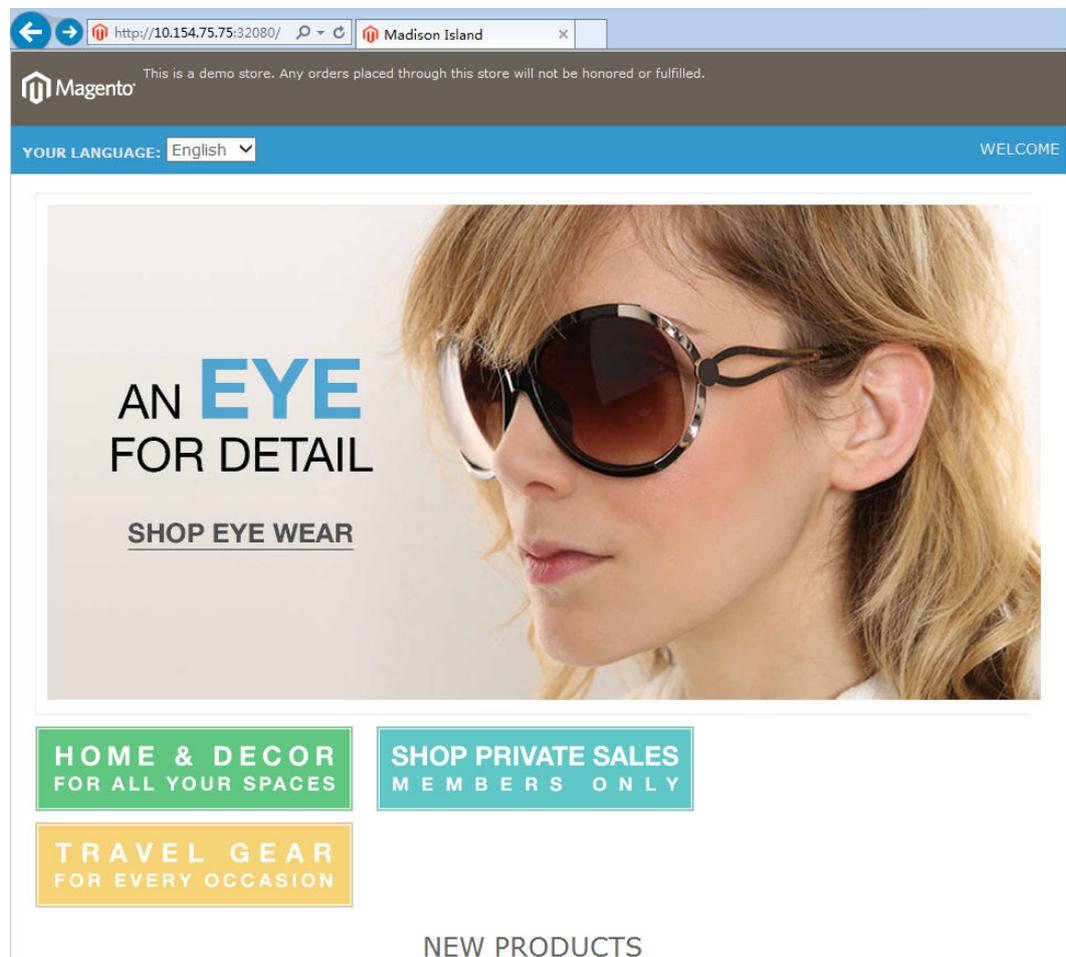
3.3 Getting Started

Introduction

This chapter uses the Magento e-commerce platform as an example to show how to deploy applications by calling AOS APIs.

In this tutorial, you will create a Magento e-commerce platform as shown in [Figure 3-3](#).

Figure 3-3 Magento e-commerce platform



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

Procedure

1. Call the API for [creating a template](#) to upload the public template **Magento E-commerce Application (e-business-app)**.

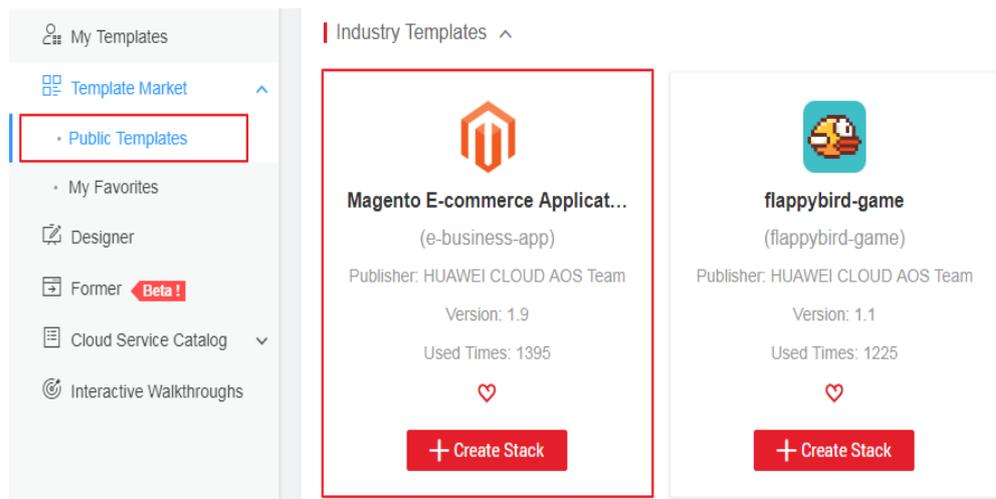
2. Call the API for [querying the input parameters of a template](#) to view the input parameters of the template. Some of these parameters need to be configured during stack creation.
3. Call the API for [creating a stack](#) to create a Magento e-commerce platform stack.
4. Call the API for [querying a stack](#) to check whether the stack has been successfully created.
5. Call the API for [querying a stack output](#) to view the stack output and the created Magento e-commerce platform.

Orchestrating and Deploying the Magento E-commerce Platform

Step 1 Call the API for [creating a template](#) to upload the public template **Magento E-commerce Application (e-business-app)**.

1. Log in to the AOS console. In the navigation pane on the left, choose **Template Market > Public Templates**. In the **Industry Templates** area, click **Magento E-commerce Application** to view the template details. Click **Download Template** to save the template file, for example, **e-business-app.yaml**, to the local host.

Figure 3-4 Selecting the public template



2. Edit the **Magento E-commerce Application** template locally and save it to the **e-business-app.yaml** file. Upload the template file **e-business-app.yaml** to any path on the server where the **curl** command is executed, for example, **/home/paas**.
3. Access the path of the template file on the server, call the API for [creating a template](#), and upload the public template **Magento E-commerce Application**.

```
curl -k -X POST -H "X-Auth-Token: ${Token}" -F "resource={\"name\": \"aos-magento\", \"description\": \"aos magento template\", \"version\": \"1.9\"}" -F "archive_content=@e-business-app.yaml" -i "${AOS_Endpoint}/v2/templates"
```

Specify the following parameters:

- **Token:** value of **x-subject-token** in the response header for obtaining a user token in [making an API request](#)
- **name:** template name

- **description:** template description
- **version:** template version
- **archive_content:** Template package to be uploaded. If you did not access the path of the template file when running the **curl** command, add a path to this parameter in the command. For example, if the template file **e-business-app.yaml** is in the **/home/paas** path, the command should be **archive_content=@/home/paas/e-business-app.yaml**.
- **AOS_Endpoint:** **{URI-scheme} :// {Endpoint}** , for example, **https://aos.cn-north-4.myhuaweicloud.com**

Response Body

```
HTTP/1.1 100 Continue
.....
{
  "id": "10185add-acde-cc18-b8dd-b3a87a1f484c"
}
```

Record the template ID **10185add-acde-cc18-b8dd-b3a87a1f484c**, which will be used in stack creation.

- Step 2** Call the API for [querying the input parameters of a template](#) to view the input parameters of the template. Some of these parameters need to be configured during stack creation.

```
curl -k -X GET -H "X-Auth-Token: ${Token}" "${AOS_Endpoint}/v2/templates/${TEMPLATE_ID}/inputs"
```

Specify the following parameters:

- **Token:** value of **x-subject-token** in the response header for obtaining a user token in [making an API request](#)
- **TEMPLATE_ID:** template ID obtained in [Step 1.3](#)
- **AOS_Endpoint:** **{URI-scheme} :// {Endpoint}** , for example, **https://aos.cn-north-4.myhuaweicloud.com**

Response Body

```
{
  .....
  "app-name": {
    "default": "magento",
    "description": "application name",
    "immutable": false,
    "label": "magento",
    "usednodes": [
      "magento",
      "magento-service"
    ]
  },
  "magento-EIP": {
    "description": "external access address of the Magento service",
    "immutable": false,
    "label": "magento",
    "usednodes": [
      "magento-config"
    ]
  },
  "magento-EPORT": {
    "default": 32080,
    "description": "external listening port of the Magento service",
    "immutable": false,
    "label": "magento",
    "type": "integer",
    "usednodes": [
```

```
"magento-config",
"magento-service"
]
},
"mysql-database": {
  "default": "magento",
  "description": "MySQL database created for the Magento service"
  "immutable": false,
  "label": "mysql",
  "usednodes": [
    "mysql-conf"
  ]
},
"mysql-password": {
  "default": "*****",
  "description": "password of the MySQL database",
  "immutable": false,
  "label": "mysql",
  "usednodes": [
    "mysql-conf"
  ]
},
"mysql-port": {
  "default": 3306,
  "description": "listening port of the MySQL database",
  "immutable": false,
  "label": "mysql",
  "type": "integer"
},
.....
}
```

When creating a stack from this template, you can configure the parameters in bold in the preceding script. These parameters define the template attributes. Default values will be used for unset parameters. In this example, you will need to change the values of **magento-EIP** and **magento-EPORT**, and retain the default values of other parameters.

Step 3 Call the API for **creating a stack** to create a Magento e-commerce platform stack.

```
curl -k -X POST -H "X-Auth-Token: ${Token}" -d '{
  "name": "magento-stack-test",
  "project_id": "c51567523b744d098a8a81ede51894ac",
  "template_id": ""${TEMPLATE_ID}""",
  "force": true,
  "cluster_id": "f2637630-5d83-11e8-a6de-0255ac101a0c",
  "namespace": "default",
  "inputs_json": {
    "magento-EIP": "*.78.102",
    "magento-EPORT": 32080
  },
  "action_parameters": {
    "auto_create": true,
    "timeout": 20
  }
}' "${AOS_Endpoint}/v2/stacks"
```

Create an available container cluster which includes a node of 2 vCPUs and 4 GB of memory. The node should also be bound with an elastic IP.

Specify the following parameters:

- **Token:** value of **x-subject-token** in the response header for obtaining a user token in [making an API request](#)
- **name:** Enter a stack name, for example, **magento-stack-test**.
- **project_id:** project ID. For details about how to obtain a project ID, see [Obtaining a Project ID](#).

- **cluster_id**: cluster ID To obtain the cluster ID, log in to the [CCE console](#). In the navigation pane on the left, select **Resource Management > Clusters**, and click the target cluster name to enter its details page. Obtain the cluster ID in the **Basic Information** area.
- **namespace**: an available namespace in the cluster To obtain a namespace name, log in to the [CCE console](#). In the navigation pane on the left, select **Resource Management > Namespaces**. Obtain namespace names on the page displayed.
- **magento-EIP**: elastic IP address of the node To obtain an EIP, log in to the [CCE console](#). In the navigation pane on the left, select **Resource Management > Nodes**, and click the target node name to enter its details page. Obtain the node's EIP in the **Basic Information** area.
- **magento-EPORT**: Node port. Enter an integer ranging from 30000 to 32767 and ensure that the value is unique in the cluster. You can retain the default value **32080**.

When the stack is successfully created, the stack information is returned. Record the stack ID, which will be used in the following steps.

```
{
  "force": true,
  "guid": "0cec7a8c-5fc1-11e8-a532-0242ac110007",
  "namespace": "default",
  "project_id": "c51567523b744d098a8a81ede51894ac",
  "cluster_name": "k8s19-lm-do-not-delete",
  "cluster_id": "f2637630-5d83-11e8-a6de-0255ac101a0c",
  "domain_id": "b0148a2cb4f347289b477bab429e48e7",
  "name": "magento-stack-test",
  "description": "",
  "status": "",
  "template_id": "10185add-acde-cc18-b8dd-b3a87a1f484c",
  "previous_template_id": "",
  "template_name": "aos-magento",
  "inputs_json": "....."
  ...
}
```

- Step 4** Call the API for [querying a stack](#) to check whether the stack has been successfully created.

```
curl -k -X GET -H "X-Auth-Token: ${Token}" "${AOS_Endpoint}/v2/stacks/${STACK_ID}"
```

Specify the following parameters:

- **Token**: value of **x-subject-token** in the response header for obtaining a user token in [making an API request](#)
- **STACK_ID**: stack ID obtained in [Step 3](#)
- **AOS_Endpoint**: **{URI-scheme}://{Endpoint}**, for example, <https://aos.cn-north-4.myhuaweicloud.com>

Response Body

```
{
  "force": true,
  "guid": "0cec7a8c-5fc1-11e8-a532-0242ac110007",
  "namespace": "default",
  "project_id": "c51567523b744d098a8a81ede51894ac",
  "cluster_name": "k8s19-lm-do-not-delete",
  "cluster_id": "f2637630-5d83-11e8-a6de-0255ac101a0c",
  "domain_id": "b0148a2cb4f347289b477bab429e48e7",
  "name": "magento-stack-test",
  "description": "",

```

```
"status": "Running",
"template_id": "10185add-acde-cc18-b8dd-b3a87a1f484c",
"previous_template_id": "",
"template_name": "aos-magento",
"inputs_json":.....
}
```

If the returned value of the **status** field is **Running**, the stack is successfully created. If the stack creation fails, you can view the log through **subObjectStatuses**.

Step 5 Call the API for **querying stack output** to view the stack output and the created Magento e-commerce platform.

```
curl -k -X GET -H "X-Auth-Token: ${Token}" "${AOS_Endpoint}/v2/stacks/${STACK_ID}/outputs"
```

Specify the following parameters:

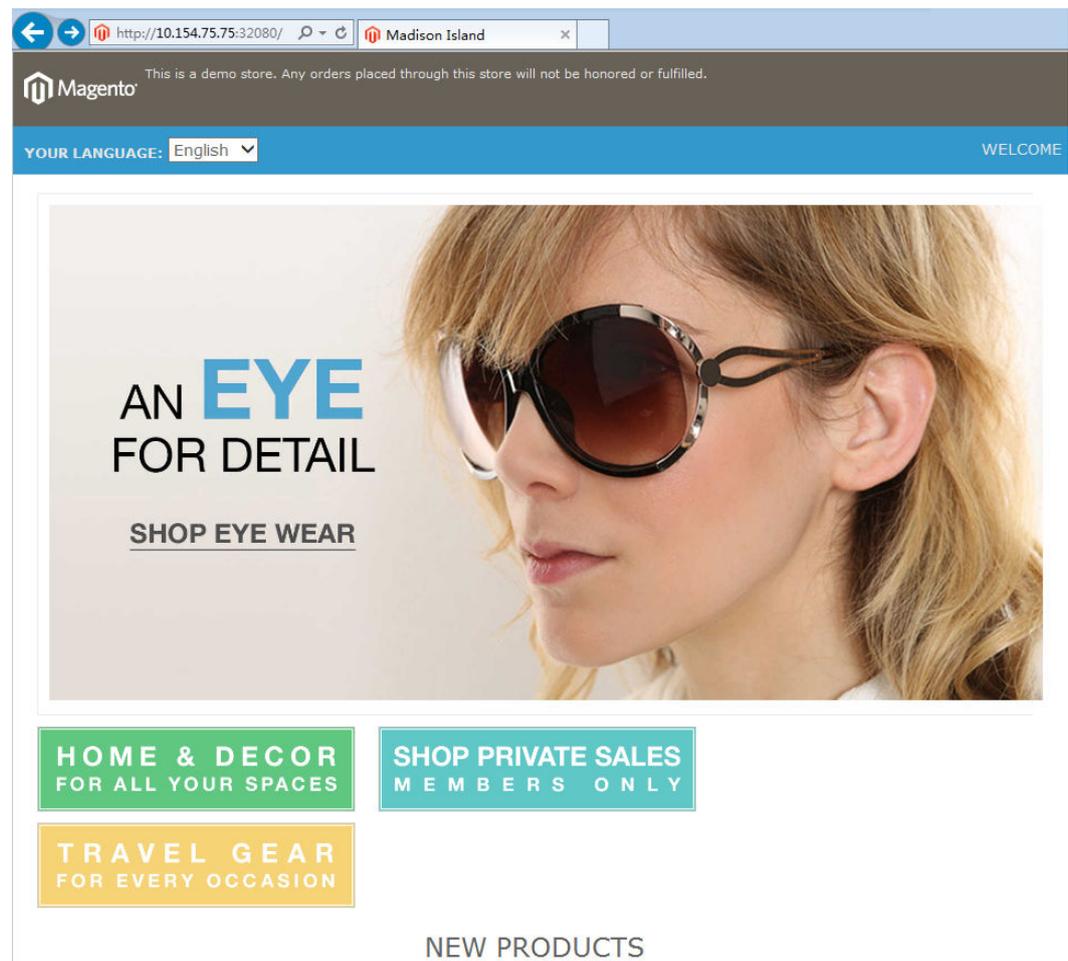
- **Token**: value of **x-subject-token** in the response header for obtaining a user token in **making an API request**
- **STACK_ID**: stack ID obtained in **Step 3**
- **AOS_Endpoint**: **{URI-scheme} :// {Endpoint}** , for example, <https://aos.cn-north-4.myhuaweicloud.com>

Response Body

```
{
  "outputs": {
    "ingress-admin_password": {
      "value": "*****",
      "description": "Password of super user."
    },
    "magento-addr": {
      "value": "http://*.78.102:32080",
      "description": "Access URL for magento service."
    },
    "magento-admin_username": {
      "value": "admin",
      "description": "Super user name."
    }
  }
}
```

To access the Magento e-commerce platform, visit **<http://magento-EIP.magento-EPORT>**, for example, **http://*.78.102:32080**.

Figure 3-5 Accessing the Magento e-commerce platform



----End

3.4 Template Management

3.4.1 Creating a Template

Function

This API is used to create a template by uploading a local template to the server.

URI

POST /v2/templates

Request

- Request parameters

Table 3-6 Request parameters

Parameter	Mandatory	Type	Description
resource	Yes	String	Template content. For details, see UploadResource parameters .
archive_content	No	String or Binary	<p>The file must be in the ZIP, TAR.GZ, TGZ, YAML, or JSON format.</p> <p>When content_type is set to yaml or json, the parameter type is String and the value is a YAML or JSON string.</p> <p>If the value of content_type is set to file or left blank, the parameter type is Binary and the value is the binary content of the file.</p>

Table 3-7 UploadResource parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Template name. The value must be 1 to 64 characters long and start with a letter, but cannot end with a hyphen (-). Only lowercase letters, digits, and hyphens are allowed.
description	No	String	Template description. The value supports a maximum of 255 characters. A Chinese character is regarded as multiple characters. The following characters are not allowed: <>()#%&/
scope	No	String	Template application scope. Only the default value domain is supported.
vendor	No	String	Template provider. The value supports a maximum of 64 characters. A Chinese character is regarded as one character. The following characters are not allowed: <>()#%&/

Parameter	Mandatory	Type	Description
version	Yes	String	Template version. The value supports a maximum of 24 characters and must meet the regular expression <code>^[a-zA-Z0-9_]+([-][a-zA-Z0-9]+)*\$</code> .
main_file_name	No	String	Name of the main file of a template. If this parameter is left blank, the default value blueprint.yaml is used. The value supports a maximum of 255 characters. If this parameter is not left blank, the file name extension must be .yaml and the file name must comply with the regular expression <code>^[a-zA-Z0-9_]+([-][a-zA-Z0-9]+)*\$</code> .
project_id	No	String	Project ID contained in the template to be uploaded.
filename	No	String	Name of the compressed package file. This parameter must be specified when the Internet Explorer is used. The value must be a string that supports a maximum of 64 characters.
dsl_version	No	String	If this parameter is not left blank, the DSL version of the uploaded template must be the same as the specified version. Otherwise, the template cannot be uploaded. DSL version of the template. Only <code>huaweicloud_tosca_version_1_0</code> and <code>fusionstage_tosca_version_2_1</code> are supported. By default, this parameter is left blank.
content_type	No	String	Template file type. The value can be yaml , json , or file .

 NOTE

Parameters in the preceding two template upload scenarios cannot be mixed up. Otherwise, an error will be reported.

Table 3-8 Request headers

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	multipart/form-data.
X-Auth-Token	Yes	String	Valid token (a user token with the op_cred permission and a short validity period). This parameter is mandatory on the account side.

 **NOTE**

For AOS API HTTP headers, if only parameters (in JSON format) are transmitted, **Content-Type** must be set to **Application/json**. Unless otherwise specified, other fields are the same as those listed in the preceding table.

- Example request

```
curl -k -X POST -H "X-Auth-Token: $token" -H "Content-Type:multipart/form-data" -F 'resource={"name": "test-agent-11","description":"aos","version": "1.0.1"}' -F "archive_content=@test-agent-1-1.0.tar.gz" https://aos.cn-north-4.myhuaweicloud.com/v2/templates
```

Response

- Response when the request is successful
 - Response parameters

Table 3-9 Response parameter when the request is successful

Parameter	Type	Description
id	String	Template ID

- Example response

```
{
  "id": "d078e49c-124c-7706-bcbb-81885661f431"
}
```
- Response when the request fails
 - Response parameters

Table 3-10 Response parameters when the request fails

Parameter	Type	Description
message	String	Detailed reason why the request fails.
code	String	Code for the reason why the request fails.

Parameter	Type	Description
extend	String	Extended reason why the request fails. This field is reserved for future use.

 NOTE

Unless otherwise specified, subsequent AOS API errors are returned in the following form:

- Example response

```
{
  "message": "Parameters validate err, The name should not be empty.",
  "code": "02000005",
  "extend": ""
}
```

Status Code

- Normal

Table 3-11 Status code

Status Code	Description
201	The template is created successfully.

- Abnormal

Table 3-12 Status code

Status Code	Description
400	The request cannot be parsed by the server due to incorrect parameters. Unless being modified, the request should not be sent again.
409	The request cannot be completed due to a conflict with the current resource.
500	The server fails to process the request due to an unexpected condition.

3.4.2 Listing Templates

Function

This API is used to query a template list based on the parameters provided.

URI

GET /v2/templates

Table 3-13 Parameter description

Parameter	Mandatory	Description
name	No	Template name. This parameter is applicable to scenarios where the template ID is queried based on the template name.
offset	No	Start offset. The default value is 0 .
limit	No	Total number of queries. This parameter can be set only when offset is set.
dsl_version	No	DSL version of the template.
check_used	No	Template usage condition. If this parameter is left blank, false is used by default.
include_stack	No	If this parameter is set to true , solution templates are queried. If this parameter is set to false , common templates are queried. If this parameter is left blank, all templates are queried.

Request

N/A

Response message.

- Response Parameters
For details about response parameters when the request fails, see [Table 3-10](#).

Table 3-14 Response Parameters

Parameter	Type	Description
[Array element]	Array of objects	Array elements are template details. For details, see Table 3-15 .

Table 3-15 Template details

Parameter	Type	Description
id	String	Template ID.
name	String	Template name.
version	String	Template version.
vendor	String	Template vendor.
description	String	Template description.
project_id	String	ID of the project to which the template belongs.
template_url	String	URL where the template package is stored.
converge_url	String	URL of the template conversion package, which is used for template preview.
create_at	String	Template creation time.
update_at	String	Template update time.
scope	String	Template application scope. <ul style="list-style-type: none">● project: available in the project (Currently, templates of this scope cannot be created.)● domain: available within an account● public: available globally, namely, available between accounts
domain	String	Name of the account to which the template belongs.
main_file_name	String	Name of the main file. If this parameter is left blank, the default value blueprint.yaml is used.
need_clutser	Boolean	Check whether a Cloud Container Engine (CCE) cluster is required. Currently, all AOS applications must be deployed on CCE clusters.
dsl_version	String	DSL version of the template.

Parameter	Type	Description
is_used	Boolean	Check whether the template is in use (that is, check whether there are any stack created using this template). If the value of this parameter is true , the template is in use. This parameter is returned when check_used is true .
is_new_template	Boolean	Whether it is a new template.
include_stack	Boolean	Whether the template contains stack elements (AOS.Stack).

Table 3-16 Response headers

Parameter	Type	Description
Content-Range	String	Pagination information. The value of items includes the start number, end number, and total number. The value depends on the number of user templates. For example, items 0-24/66 .

- Example Response

```
[
  {
    "id": "f9f5839d-73e2-f22b-f20b-fb11bc1abb66",
    "name": "test-z",
    "version": "v1",
    "vendor": "aos-team",
    "description": "",
    "project_id": "",
    "template_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v1/file_paths/test-staless-container.tar.gz",
    "converge_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v1/file_paths/test-z-v1-converge.tar.gz",
    "create_at": "2018-12-16T01:15:39Z",
    "update_at": "2018-12-16T01:15:41Z",
    "scope": "domain",
    "domain": "aos-team",
    "main_file_name": "blueprint.yaml",
    "need_cluster": true,
    "dsl_version": "huaweicloud_tosca_version_",
    "is_used": true,
    "is_new_template": false,
    "include_stack": false
  },
  {
    "id": "fd3f1e6d-cc93-c3c3-d015-f69c3ff3bc63",
    "name": "test-z",
    "version": "v2",
    "vendor": "aos-team",
    "description": ""
  }
]
```

```
"project_id": "",
"template_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/
namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v2/file_paths/
blueprint.zip",
"converge_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/
namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v2/file_paths/test-z-
v2-converge.tar.gz",
"create_at": "2018-12-16T04:09:24Z",
"update_at": "2018-12-16T04:09:26Z",
"scope": "domain",
"domain": "aos-team",
"main_file_name": "blueprint.yaml",
"need_cluster": true,
"dsl_version": "huaweicloud_tosca_version_",
"is_used": true,
"is_new_template": false,
"include_stack": false
}
]
```

Status Code

- Normal

Table 3-17 Status Code

Status Code	Description
200	The template list query succeeds.

- Abnormal

Table 3-18 Status Code

Status Code	Description
500	The server fails to process the request due to an unexpected condition.

3.4.3 Updating a Template

Function

This API is used to update a template.

NOTICE

The update can be performed only when the template has not been used to create a stack.

The upload modes are as follows:

- For local upload, upload the binary data of the local file directly.
- For URL upload, enter the URL of the template file.

URI

PUT /v2/templates/{template_id}

Table 3-19 Parameter description

Parameter	Mandatory	Description
template_id	Yes	ID of the template to be updated.

Request

- Request parameters

Table 3-20 Request parameters

Parameter	Mandatory	Type	Description
resource	Yes	String	Template content. For details, see Table 3-7 .
archive_content	No	String or Binary	The file must be in the ZIP, TAR.GZ, TGZ, YAML, or JSON format. When content_type is set to yaml or json , the parameter type is String and the value is a YAML or JSON string. If the value of content_type is set to file or left blank, the parameter type is Binary and the value is the binary content of the file.

- Example request

```
{
  "name": "helloworld",
  "description": "helloworld blueprint new",
  "version": "1.0"
}
curl -k -X PUT -H "X-Auth-Token: $token" -H "Content-Type:multipart/form-data" -F
"archive_content=@test-agent-1-1.0.tar.gz" https://aos.cn-north-4.myhuaweicloud.com/v2/templates/
d078e49c-124c-7706-bcbb-81885661f431
```

Response

- Response parameters

Table 3-21 Response parameter when the request is successful

Parameter	Type	Description
id	String	Template ID.

- Example response

The following shows the response when the request is successful. For details about the response when the request fails, see [Table 3-10](#).

```
{
  "id": "d078e49c-124c-7706-bcbb-81885661f431"
}
```

Status Code

- Normal

Table 3-22 Status code

Status Code	Description
200	The template is updated successfully.

- Abnormal

Table 3-23 Status code

Status Code	Description
400	The request cannot be parsed by the server due to incorrect parameters. Unless being modified, the request should not be sent again.
404	The requested resource does not exist.
409	The request cannot be completed due to a conflict with the current resource.
500	The server fails to process the request due to an unexpected condition.

3.4.4 Deleting a Template

Function

This API is used to delete a template.

NOTICE

The deletion can be performed only when the template is not used to create a stack.

URI

DELETE /v2/templates/{template_id}

Table 3-24 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response

If the deletion is successful, the response body is empty with only an HTTP header.

Response messages when the deletion fails are listed in [Table 3-10](#).

Status Code

- Normal

Table 3-25 Status code

Status Code	Description
204	The template is deleted successfully.

- Abnormal

Table 3-26 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The requested resource does not exist.
409	A stack that uses the template exists.
500	The server encountered an unexpected condition which prevented it from fulfilling the request.

3.4.5 Downloading a Template

Function

This API is used to download a template.

URI

GET /v2/templates/{template_id}/archive

Table 3-27 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response message.

- Response Parameters

Table 3-28 Response header

Parameter	Type	Description
Content-Type	String	Message body type (format): application/octet-stream;charset=UTF-8

Response content:

The content of the template file is as follows:

```
tosca_definitions_version: huaweicloud_tosca_version_1_0
description: Sample template for IaaS resource
inputs:
  az:
    default:
    description: Availability Zone
    type: HuaweiCloud.ECS.AvailabilityZone.Name
    label: ECS
  flavor:
    default: s2.large.2
    description: ECS specifications
    label: ECS
  image:
    default: 1189efbf-d48b-46ad-a823-94b942e2a000
    description: ID of the image used by the ECS
    type: HuaweiCloud.ECS.Image.Id
    label: ECS
  sshKey-name:
    description: SSH key pair
    label: ECS
  mycloudserver_rootVolume_volumeType:
    description: System disk type
    label: ECS
  subnet-cidr:
    default: 192.168.1.0/24
    description: CIDR of the subnet
    label: Subnet
  subnet-gateway:
```

```
default: 192.168.1.1
description: Gateway of the subnet
label: Subnet
vm-name:
default: my-cloudserver
description: ECS name
label: ECS
vpc-cidr:
default: 192.168.0.0/16
description: Available subnet ranges under VPC
label: VPC
node_templates:
mycloudserver:
properties:
availabilityZone:
get_input: az
flavor:
get_input: flavor
imageId:
get_input: image
name:
get_input: vm-name
nics:
- subnetId:
get_reference: mysubnet
publicIP:
eip:
bandwidth:
shareType: PER
size: 1
ipType: 5_bgp
sshKeyName:
get_input: sshKey-name
vpclId:
get_reference: myvpc
rootVolume:
volumeType:
get_input: mycloudserver_rootVolume_volumeType
requirements:
- nics.subnetId:
node: mysubnet
- vpclId:
node: myvpc
type: HuaweiCloud.ECS.CloudServer
mysubnet:
properties:
availabilityZone:
get_input: az
cidr:
get_input: subnet-cidr
dnsList:
- 192.168.0.1
- 192.168.0.0
gateway:
get_input: subnet-gateway
name: ""
vpclId:
get_reference: myvpc
requirements:
- vpclId:
node: myvpc
relationship: HuaweiCloud.Relationships.ContainedIn
type: HuaweiCloud.VPC.Subnet
myvpc:
properties:
cidr:
get_input: vpc-cidr
name: ""
type: HuaweiCloud.VPC.VPC
```

```

outputs:
  ecs-eip:
    value:
      get_attribute:
        - mycloudserver
        - floatingipId
  ecs-id:
    value:
      get_attribute:
        - mycloudserver
        - refID
  subnet-name:
    value:
      get_attribute:
        - mysubnet
        - refName
  vpc-name:
    value:
      get_attribute:
        - myvpc
        - refName
    
```

Status Code

- Normal

Table 3-29 Status Code

Status Code	Description
200	The template is successfully downloaded.

- Abnormal

Table 3-30 Status Code

Status Code	Description
400	The request cannot be parsed by the server due to incorrect parameters. Unless being modified, the request should not be sent again.
404	The requested resource does not exist.
409	The request cannot be completed due to a conflict with the current resource.
500	The server encountered an unexpected condition which prevented it from fulfilling the request.

3.4.6 Querying a Template

Function

This API is used to query a template.

URI

GET /v2/templates/{template_id}

Table 3-31 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response

- Response parameters
Response messages when the request fails are listed in [Table 3-10](#).

Table 3-32 Response parameters

Parameter	Type	Description
id	String	Template ID.
name	String	Template name.
version	String	Template version.
vendor	String	Template publisher.
description	String	Template description.
project_id	String	ID of the project to which the template belongs.
template_url	String	URL where the template package is stored.
converge_url	String	URL of the template conversion package, which is used for template preview.
create_at	String	Template creation time.
update_at	String	Template update time.

Parameter	Type	Description
scope	String	Template application scope. <ul style="list-style-type: none"> ● project: available within a project (Currently, templates of this scope cannot be created anymore.) ● domain: available within an account ● public: available globally, namely, available between accounts
domain	String	Name of the account to which the template belongs.
main_file_name	String	Name of the main file. If this parameter is left blank, the default value blueprint.yaml is used.
need_clutser	Boolean	Determine whether Cloud Container Engine (CCE) clusters are required. Currently, all AOS applications must be deployed on CCE clusters.
dsl_version	String	DSL version of the template.
is_used	Boolean	Check whether the template is in use (that is, check whether there are any stack created using this template). If the value of this parameter is true , the template is in use.
is_new_template	Boolean	Whether it is a new template.
include_stack	Boolean	Whether the template contains stack elements (AOS.Stack).

- Example response

```
{
  "id": "fd3f1e6d-cc93-c3c3-d015-f69c3ff3bc63",
  "name": "test-z",
  "version": "v2",
  "vendor": "aos-team",
  "description": "",
  "project_id": "",
  "template_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v2/file_paths/blueprint.zip",
  "converge_url": "https://swr-api-server.manage.svc.cluster.local:20202/swr/v2/domains/aos-team/namespaces/aos-teame002/repositories/stack_templates/packages/test-z/versions/v2/file_paths/test-z-v2-converge.tar.gz",
  "create_at": "2017-12-16T04:09:24Z",
  "update_at": "2017-12-16T04:09:26Z",
  "scope": "domain",
  "domain": "aos-team",
  "main_file_name": "blueprint.yaml",
  "need_cluster": true,
  "dsl_version": "huaweicloud_tosca_version_"
}
```

Status Code

- Normal

Table 3-33 Status code

Status Code	Description
200	The template query succeeds.

- Abnormal

Table 3-34 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The requested resource does not exist.

3.4.7 Querying the Input Parameters of a Template

Function

This API is used to query the input parameter of a template.

URI

GET /v2/templates/{template_id}/inputs

Table 3-35 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response

- Response parameters
For details about response parameters when the request fails, see [Table 3-10](#).

Table 3-36 Response parameters

Parameter	Type	Description
[Customized key]	Map<String, Object>	The key indicates the name of a template input parameter. The value indicates the attribute information of the template input parameter. For details, see Table 3-37 .

Table 3-37 Data structure of the attribute information of a template input parameter

Parameter	Type	Description
required	Boolean	Whether the parameter can be left blank. The options are as follows: true or false .
default	Integer or String or Float or Boolean	Default parameter in the template. Multiple types supported, such as integer, string, and boolean. It can be selected based on the type field.
description	String	Description of the parameter.
type	String	Input parameter types of a template. <ul style="list-style-type: none"> • string: character string • integer: integer • boolean: Boolean • enum: Enumeration. If an enumeration is used, the input must contain the valid_values field of the constraints field. • float: floating point number • secret: key • password: password • ip: IP address
constraints	Object	Constraints of the parameter value. For details, see Table 3-38 .
label	String	Label group to which the parameter belongs.

Parameter	Type	Description
advanced	Boolean	Whether the parameter is an advanced configuration. The default value must be available. The parameter is hidden by default on the GUI.
immutable	Boolean	Whether the parameter can be modified.

Table 3-38 Parameter constraint structure description

Parameter	Type	Description
in_range	Array of integers	The value must be greater than or equal to the minimum value, and less than or equal to the maximum value.
regex	String	The input value must comply with the regular expression.
valid_values	Array of integers, string, float, or boolean	The input value must be one of the given values.
equal	Integer, string, float, or Boolean	The input value must be equal to this value.
greater_or_equal	Integer, string, float, or Boolean	The input value must be greater than or equal to this value.
greater_than	Integer, string, float, or Boolean	The input value must be greater than this value.
less_or_equal	Integer, string, float, or Boolean	The input value must be less than or equal to this value.
less_than	Integer, string, float, or Boolean	The input value must be less than this value.

- Example response

```
{
  "key1": {
    "default": "192.168.12.22:30303/test_yj/frontend:latest",
    "immutable": false,
    "type": "string"
  },
  "key2": {
    "default": 2,
    "immutable": false,
    "type": "integer"
  },
  "key3": {
    "immutable": true,
    "type": "string"
  }
}
```

```

},
"key4": {
  "type": "float",
  "constraints": {
    "greater_or_equal": 0,
    "greater_than": 0,
    "less_or_equal": 2,
    "less_than": 2
  }
}
}

```

Status Code

- Normal

Table 3-39 Status code

Status Code	Description
200	Querying the input parameter is successful.

- Abnormal

Table 3-40 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The requested resource cannot be found.
500	The server fails to process the request due to an unexpected condition.

3.4.8 Obtaining a Template List

Function

This API is used to obtain a template list based on the parameters provided.

URI

GET /v2.1/templates

Table 3-41 Parameter description

Parameter	Mandatory	Description
name	No	Template name. This parameter is applicable to scenarios where the template ID is queried based on the template name.

Parameter	Mandatory	Description
offset	No	Start offset. The default value is 0 .
limit	No	Total number of queries. This parameter can be set only when offset is set.
dsl_version	No	DSL version of the template.
check_used	No	Template usage condition. If this parameter is left blank, false is used by default.
include_stack	No	If this parameter is set to true , solution templates are queried. If this parameter is set to false , common templates are queried. If this parameter is left blank, all templates are queried.

Request

N/A

Response

- Response parameters
For details about response parameters when the request fails, see [Table 3-10](#).

Table 3-42 Response parameters

Parameter	Type	Description
templates	Array of objects	Array elements contain detailed information about all versions of each template. For details, see Table 3-43 .
total	Integer	Total number of templates

Table 3-43 Data structure of the templates field

Parameter	Type	Description
template	Array of objects	Array elements are template details. For details, see Table 3-44 .

Table 3-44 Data structure of the template field

Parameter	Type	Description
id	String	Template ID.
name	String	Template name.
version	String	Template version.
vendor	String	Template publisher.
description	String	Template description.
template_url	String	URL where the template package is stored.
create_at	String	Template creation time.
update_at	String	Template update time.
scope	String	Template application scope. <ul style="list-style-type: none">• project: available within a project (Currently, templates of this scope cannot be created anymore.)• domain: available within an account• public: available globally, namely, available between accounts
domain	String	Name of the account to which the template belongs.
need_clutser	Boolean	Determine whether Cloud Container Engine (CCE) clusters are required. Currently, all AOS applications must be deployed on CCE clusters.
dsl_version	String	DSL version of the template.
is_new_template	Boolean	Whether it is a new template.
include_stack	Boolean	Whether the template contains stack elements (AOS.Stack).
is_used	Boolean	Check whether the template is in use (that is, check whether there are any stack created using this template). If the value of this parameter is true , the template is in use.

Table 3-45 Response header

Parameter	Mandator y	Type	Value Range	Description
Content-Range	No	String	The value depends on the number of templates. Example: items 0-24/66	Pagination information. The values of items include the start number, end number, and total number.

- Example response

```
{
  "templates": [
    {
      "template": [
        {
          "id": "74252143-4ca1-7ddb-d585-6be6786d1209",
          "name": "api-test",
          "version": "1.0",
          "vendor": "paas_aos_w00417971",
          "description": "",
          "template_url": "",
          "create_at": "2020-07-10T07:29:25Z",
          "update_at": "2020-07-14T11:07:09Z",
          "scope": "domain",
          "domain": "paas_aos_w00417971",
          "need_cluster": false,
          "dsl_version": "",
          "include_stack": false,
          "is_new_template": false,
          "is_used": false
        },
        {
          "id": "34b159d8-cdf2-6764-e97b-8eb45b8e0f5b",
          "name": "api-test",
          "version": "1.1",
          "vendor": "paas_aos_w00417971",
          "description": "",
          "template_url": "",
          "create_at": "2020-07-14T11:05:36Z",
          "update_at": "2020-07-14T11:05:36Z",
          "scope": "domain",
          "domain": "paas_aos_w00417971",
          "need_cluster": false,
          "dsl_version": "",
          "include_stack": false,
          "is_new_template": false,
          "is_used": false
        }
      ]
    }
  ],
  "total": 2
}
```

Status Code

- Normal

Table 3-46 Status code

Status Code	Description
200	The template list query succeeds.

- Abnormal

Table 3-47 Status code

Status Code	Description
500	The server encountered an unexpected condition which prevented it from fulfilling the request.

3.5 Stack Management

3.5.1 Creating a Stack

Function

This API is used to create a stack.

NOTE

The stack input consists of the template and input parameters.

- Template defines the framework of the stack, and determines the structure of the internal nodes of the stack, the relationships between nodes, and the value or source of the attributes of each node.
- Input parameters are one of the sources of the node attribute values in the template. They are defined in the input fields of the template and are triggered by the **get_input** function in the template.

URI

POST /v2/stacks

Request

- Request Parameters

Table 3-48 Request Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Stack name Restrictions are the same as the name field in Table 3-7 .

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>ID of the project to which the stack belongs. The default value is the project to which the user token belongs. If this parameter is set, the value must be the same as the project information in the user token.</p> <p>The value supports a maximum of 63 characters and cannot start or end with a hyphen (-). Only lowercase letters, digits, and hyphens are allowed.</p>
description	No	String	<p>Stack description Restrictions are the same as the description field in Table 3-7.</p>
template_id	Yes	String	<p>ID of the template used by the stack. The value supports a maximum of 64 characters.</p>
inputs_json	No	Object	<p>Input parameter of the template used by the stack.</p> <p>Each key-value structure in this parameter corresponds to a key field in the inputs, and the input value is value.</p> <p>If a key is not specified, the default value specified by the key is used. If no default value is specified, an error is reported.</p> <p>Example: <code>"{'template_input_key': 'value'}"</code></p>
force	No	Boolean	<p>Force tailoring ID of the stack. This parameter is applicable to tailoring scenarios.</p>
labels	No	Object	<p>Stack label. Each internal key-value indicates a label. The key/value field supports a maximum of 64 characters, and must comply with the regular expression <code>^[a-zA-Z0-9_]+[-.a-zA-Z0-9_]*\$</code>.</p>
namespace	No	String	<p>This parameter must be specified when CCE resources and applications are orchestrated. If the value is not read from CCE, default is used by default.</p>

Parameter	Mandatory	Type	Description
cluster_id	No	String	This parameter must be specified when CCE resources and applications are orchestrated. ID of the cluster to which the stack belongs.
action_parameters	No	Object	After a stack is created, lifecycle configurations are automatically executed and installed. Restrictions are the same as those in Table 3-49 .

Table 3-49 Lifecycle configurations

Parameter	Mandatory	Type	Description
failure_strategy	No	String	Failure strategy. The default value is DoNothing . The value can be DoNothing or Rollback .
auto_create	Yes	Boolean	The default value is true .
timeout	No	Integer	Lifecycle timeout period (in minutes). The default value is 60 minutes. The value supports a maximum of 1,440 minutes (that is, one day).

 **NOTE**

When the **inputs_json** parameter is set to the attribute of a VM application and a valid URL is not entered in the **url** or **name** field, the **name/version/repository** field is used to access SWR for fuzzy search. The efficiency is low when there are a large number of files in the software repository. A feasible solution is to fill in the **url** field to avoid fuzzy search or specify the **name**, **version**, **repository** parameters in detail to reduce the search scope.

- **url**: http://SWR.url/xxx/file.tgz (recommended)
- **name**: file.tgz; **version**: v1; **repository**: myProject (good)
- **name**: file.tgz (low-efficiency)
- Example Request

```
{
  "name": "aos-lm-verydows-t1",
  "template_id": "b417b635-6ab2-1fed-b593-b129a9923ba2",
  "project_id": "10556c2112784111b8bf10512591189e",
  "cluster_id": "46c547ca-e96c-11e7-98b9-0255ac102005",
  "inputs_json": {
    "ecsng-image": "192.168.3.88:20202/default/verydows-ecsng:2.1.1",
    "mysql-image": "192.168.3.88:20202/tangtao/verydows-mysql:5.6.35",
    "redis-image": "192.168.3.88:20202/default/verydows-redis:4.0.2_passwd",
  }
}
```

```
"verydows-image": "192.168.3.88:20202/default/verydows:2.3.1",  
"verydows-install-image": "192.168.3.88:20202/default/verydows:2.3.1",  
"mysql-name": "verydows-mysql-t1"  
}  
}
```

Response message.

- Response Parameters

A response parameter is a stack structure or response structure.

- The stack structure is returned when the creation is successful.
- The error response structure is returned when the creation fails.

The stack structure is shown in [Table 3 Response parameters](#) and the returned incorrect response structure is shown in [Table 3-10](#).

Table 3-50 Response Parameters

Parameter	Type	Description
name	String	Stack name
guid	String	Stack ID
description	String	Stack description
project_id	String	ID of the project to which the stack belongs
domain_id	String	Account to which the stack belongs
template_id	String	Template ID
template_name	String	Template name
inputs_json	String	Input parameter of the template used by the stack
status	String	Stack status
resource_status	String	Stack resource status
create_at	String	Stack creation time
update_at	String	Stack update time
force	Boolean	Force tailoring ID of the stack. This parameter is applicable to tailoring scenarios.
labels	String	Stack label
cluster_id	String	ID of the cluster where the stack is located

Parameter	Type	Description
cluster_name	String	Name of the cluster where the stack is located
namespace	String	Namespace to which the stack belongs
template_version	String	Version of the template used by the stack
dsl_version	String	Syntax version of the template used by the stack

- Example response when the request is successful

```
{
  "force": true,
  "guid": "d956ea24-e979-11e7-9764-0255ac103504",
  "namespace": "default",
  "project_id": "c261c106051448479eb7c66549866011",
  "cluster_name": "test-not-delete",
  "cluster_id": "46c547ca-e96c-11e7-98b9-0255ac102005",
  "domain_id": "ef09dd6cc93f4653b5557181b802ee71",
  "name": "aos-lm-verydows-t1",
  "description": "",
  "status": "",
  "resource_status": "",
  "template_id": "b417b635-6ab2-1fed-b593-b129a9923ba2",
  "previous_template_id": "",
  "template_name": "verydows",
  "healthy": true,
  "healthy_message": "",
  "inputs_json": "{\"ecsng-container-port\":80,\"ecsng-image\":\"192.168.3.88:20202/default/verydows-ecsng:2.1.1\", \"imagePullPolicy\":\"IfNotPresent\", \"mysql-container-port\":3306, \"mysql-database\":\"verydows\", \"mysql-image\":\"192.168.3.88:20202/tangtao/verydows-mysql:5.6.35\", \"mysql-name\":\"verydows-mysql-t1\", \"mysql-password\":\"*****\", \"mysql-port\":13306, \"mysql-root-password\":\"*****\", \"mysql-user\":\"verydows\", \"redis-container-port\":6379, \"redis-image\":\"192.168.3.88:20202/default/verydows-redis:4.0.2_passwd\", \"redis-password\":\"*****\", \"redis-port\":16379, \"verydows-container-port\":80, \"verydows-http-host\":\"\", \"verydows-image\":\"192.168.3.88:20202/default/verydows:2.3.1\", \"verydows-install-image\":\"192.168.3.88:20202/default/verydows:2.3.1\", \"verydows-port\":8088}",
  "previous_inputs_json": "",
  "create_at": "",
  "update_at": "",
  "labels": "",
  "template_version": "2.0.1",
  "dsl_version": "huaweicloud_tosca_version_1_0"
}
```

- Example response when the request fails

```
{
  "message": "The request body is invalid, please check. Error: The stack name is already existed.",
  "code": "02030008",
  "extend": ""
}
```

Status Code

- Normal

Table 3-51 Status Code

Status Code	Description
201	The stack is successfully created.

- Abnormal

Table 3-52 Status Code

Status Code	Description
400	The request parameter is invalid or more than one package exists.
404	The package defined in the template does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.2 Deleting a Stack

Function

This API is used to delete a stack.

URI

DELETE /v2/stacks/{stack_id}

Table 3-53 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which has a length of 1 to 64 characters
force	No	Whether to forcibly delete a stack. The value can be true or false . The forcible deletion operation can be performed only when the deletion operation has been performed before.

Request

N/A

Response

- Response parameters

A response parameter is a character string or response structure.

- Null is returned when the deletion starts.
- The failure response structure is returned when the deletion fails.

If a success response is returned, it indicates that the deletion is started. To check whether the deletion is successful, you need to perform operations in [Querying the Execution Record of a Stack](#).

If the deletion is successful, the stack cannot be queried. The cause of the deletion failure can be obtained from the returned value of this interface. The failure response structure returned is shown in [Table 3-10](#).

- Example response

```
{}
```

Status Code

- Normal

Table 3-54 Status code

Status Code	Description
200	The stack deletion starts.

- Abnormal

Table 3-55 Status code

Status Code	Description
404	The requested resource does not exist.
500	The server encountered an unexpected condition which prevented it from fulfilling the request.

3.5.3 Executing a Stack Lifecycle

Function

This API is used to perform lifecycle operations for a specific stack.

URI

PUT /v2/stacks/{stack_id}/actions

Table 3-56 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which has a length of 1 to 64 characters

Request

- Request parameters

The request parameters are applicable only to scenarios where the rollback fails.

Table 3-57 Request parameters

Parameter	Mandatory	Type	Description
failure_strategy	No	String	Failure strategy. The default value is DoNothing . The value can be DoNothing or Rollback .
nodes	No	Array of objects	For details about parameters of a stack element lifecycle, see Table 3-58 .
timeout	No	Integer	Lifecycle timeout period (in minutes). The default value is 60 minutes. This value has a length of 0 to 1440 minutes (a maximum of one day, that is, 24 x 60 minutes).
lifecycle	Yes	String	Lifecycle name The value can be create , delete , upgrade , rollback , or retry .
inputs	No	String	The stack configuration parameters need to be specified during the upgrade. Each key-value structure represents an input and corresponds to the inputs in the template.
template_id	No	String	Uses the new template to execute the lifecycle.

 NOTE

1. Only the **inputs** upgrade mode is supported during the upgrade.
2. The **failure_strategy** parameter supports rollback only in the lifecycle of **create**.
3. The **agent**, **job**, **DynamicVolume**, **FlexVolume**, **DynamicNodePool**, **NodePool**, and **AutoScaler** elements do not support upgrade or reinstallation upon installation failure.

Table 3-58 Node parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Node name
parameters	No	Object	Node lifecycle parameters, in which ScaleParams parameters (Table 3-59) are used for the scaling operations.

Table 3-59 Scaling parameters

Parameter	Mandatory	Type	Description
instances	Yes	Integer	Number of nodes. The value ranges from 0 to 100.

 NOTE

Scaling lifecycle is supported only for stateless applications whose number of instances is defined in **inputs**. If the **inputs** section is shared by multiple applications, the scale operation is supported only when all these applications are scaled at the same time.

- Creation request example

```
{
  "lifecycle": "create",
  "timeout": 20,
  "failure_strategy": "Rollback"
}
```

- Rollback request example

```
{
  "lifecycle": "rollback"
}
```

- Configuration parameter upgrade request example

```
{
  "lifecycle": "upgrade",
  "inputs": {
    "param1": "value1"
  }
}
```

- Retry request example

```
{
  "lifecycle": "retry",
  "timeout": 20
}
```

Response

- Response parameters

Table 3-60 Response parameters

Parameter	Type	Description
action_id	String	Execution record ID
last_action_id	String	Record ID of the previous execution

- Example response

```
{
  "action_id": "string",
  "last_action_id": "string",
}
```

Status Code

- Normal

Table 3-61 Status code

Status Code	Description
200	Executing the stack lifecycle is successful.

- Abnormal

Table 3-62 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The stack or the element does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.4 Listing Stacks

Function

This API is used to query a stack list.

URI

GET /v2/stacks?project_id={project_id}

Table 3-63 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project to which the stack belongs. This parameter is mandatory for common user queries. The value must be 1 to 64 characters long.
labels	No	Label of the stack to be queried. The format is "key1=value1,key2=value2". The label names and values must meet the requirements of the labels field in Table 3-48 .
dsl_version	No	DSL version of the template. The stack of the corresponding version can be queried. Only huaweicloud_tosca_version_1_0 is supported. By default, this parameter is left blank.
template_id	No	Template ID. The stack that uses the specified template ID can be queried. This parameter cannot coexist with template_name .
template_name	No	Template name. The stack that uses the specified template name can be queried. This parameter cannot coexist with template_id .
template_version	No	Template version. The stack that uses the specified template version is queried. You need to specify template_name at the same time.
include_periodic_re s	No	Stacks billed in the yearly/monthly mode are queried.
include_stack	No	<ul style="list-style-type: none">● true: Solution stacks are queried.● false: Common stacks are queried.● If this parameter is left blank, all stacks are queried.
name	No	The stack that uses the specified name is queried.

Parameter	Mandatory	Description
status	No	Stack status. <ul style="list-style-type: none"> ● Running: Running. ● Stopped: All resources are stopped. ● Abnormal: The stack is abnormal. ● Pending: Initializing. ● Processing: Processing. ● PartialStopped: Some resources are stopped. ● Unknown: Unknown.

Request

N/A

Response message.

- Response Parameters

A response parameter is a stack structure list or response structure.

- The stack structure list is returned when the query is successful.
- The failure response structure is returned when the query fails.

For the stack structure, see [Table 3-64](#). For the failure response structure, see [Table 3-10](#).

Table 3-64 Response Parameters

Parameter	Type	Description
[Array element]	Array of objects	Each element indicates the stack details. For details, see Table 3-68 .

- Success response example

Only a single stack structure is provided here. The returned URL is `JSONArray([{"name": "stack1", ...}, {"name": "stack2", ...}])`.

```
{
  "force": false,
  "guid": "6c2dc1bc-66cc-11e7-8a31-0255ac101c16",
  "namespace": "csc-system",
  "project_id": "3de3c020647e447fb9c9dbe1f0fc8b85",
  "cluster_name": "cluster01",
  "cluster_id": "d019ddfa-61e2-11e7-80ba-0255ac100705",
  "domain_id": "c952eaaa5bdc43668d31aff2bb74a72d",
  "name": "b-lss-f98q0",
  "description": "",
  "status": "Running",
  "template_id": "6307541e-11e9-8d57-0682-0a0ab82e8450",
  "previous_template_id": "",
  "template_name": "paasconsole",
```

```

"healthy": true,
"healthy_message": "",
"inputs_json": "{\"app_path\":\"/\", \"container_port\":18081, \"custom_tag_key\":\"netype\", \"custom_tag_val\":\"com.huawei.itpaas.platformservice.ncss\", \"extend_info\":{}, \"image_name\":\"10.101.248.47:20202/aos-team/cam-default/dw_broker_lss_suse11sp3:v600r001c11\", \"pod_name\":\"b-lss-f98q0\", \"role_name\":\"manage\", \"secret_name\":\"default-ingress-ssl\", \"service_guid\":\"beef926a-e170-0419-c220-16d90bce9951\", \"sso_info\":\"{\\\"iam_external_domain\\\":\\\"10.101.248.93\\\", \\\"iam_external_addr\\\":\\\"10.101.248.93\\\", \\\"iam_internal_ip\\\":\\\"iam.kube-system.svc.cluster.local\\\", \\\"iam_port\\\":\\\"31943\\\"}\"\", \"volume_container_path\":\"/home/agentlib/uniagentconf\", \"volume_host_path\":\"/home/agentlib/uniagentconf\"}",
"previous_inputs_json": "",
"create_at": "2017-07-12T06:36:23Z",
"update_at": "2017-07-12T06:36:39Z",
"labels": "",
"object": {
  "metadata": {
    "name": "b-lss-f98q0",
    "namespace": "3de3c020647e447fb9c9dbe1f0fc8b85",
    "selfLink": "/apis/paas/v1alpha1/namespaces/3de3c020647e447fb9c9dbe1f0fc8b85/stacks/b-lss-f98q0",
    "uid": "6c2dc1bc-66cc-11e7-8a31-0255ac101c16",
    "resourceVersion": "1442425",
    "creationTimestamp": "2017-07-12T06:36:23Z",
    "labels": {
      "stackname": "b-lss-f98q0"
    },
    "annotations": {
      "cluster-id": "d019ddfa-61e2-11e7-80ba-0255ac100705",
      "namespace": "csc-system",
      "paas-iam.alpha.kubernetes.io/domain-id": "c952eaaa5bdc43668d31aff2bb74a72d",
      "stack.kubernetes.io/revision": "1"
    }
  },
  "spec": {
    "selector": {
      "matchLabels": {
        "stackname": "b-lss-f98q0"
      }
    },
    "template": {
      "type": "Aos",
      "data": "*****"
    }
  },
  "status": {
    "phase": "CreateSucceeded",
    "elementStatuses": {
      "paas-console-app": {
        "runtimeProperties": {
          "CfeCluster": "{\"clusterID\":\"d019ddfa-61e2-11e7-80ba-0255ac100705\", \"namespace\":\"csc-system\"}\",
          "ConfigMap": "{\"selfLink\":\"/api/v1/namespaces/csc-system/configmaps/b-lss-f98q0\", \"name\":\"b-lss-f98q0\", \"id\":\"7248cfe7-66cc-11e7-9a88-286ed489ceaa\"}\",
          "Deployment": "{\"selfLink\":\"/apis/extensions/v1beta1/namespaces/csc-system/deployments/b-lss-f98q0\", \"name\":\"b-lss-f98q0\", \"id\":\"7253bff2-66cc-11e7-9a88-286ed489ceaa\"}\",
          "Ingress": "{\"selfLink\":\"/apis/extensions/v1beta1/namespaces/csc-system/ingresses/b-lss-f98q0\", \"annotations\":{\"ingress.beta.kubernetes.io/role\":\"manage\", \"ingress.beta.kubernetes.io/type\":\"external\", \"ingress.kubernetes.io/external-address\":\"10.101.204.188:30283\", \"ingress.kubernetes.io/external-ssl-address\":\"10.101.204.188:30282\"}, \"rules\":[{\"host\":\"b-lss-f98q0-csc-system.10.101.204.188.xip.io\", \"http\":{\"paths\":[{\"path\":\"/\", \"backend\":{\"serviceName\":\"b-lss-f98q0\", \"servicePort\":32158}}]}]}\",
          "Service": "{\"selfLink\":\"/api/v1/namespaces/csc-system/services/b-lss-f98q0\", \"type\":\"NodePort\", \"ports\":[{\"name\":\"TCP\", \"protocol\":\"TCP\", \"port\":18081, \"targetPort\":18081, \"nodePort\":32158}], \"selector\":{\"app\":\"b-lss-f98q0\", \"stack-name\":\"b-lss-f98q0\"}, \"clusterIP\":\"10.247.248.87\", \"ExternalName\":\"\", \"sessionAffinity\":\"None\"}"
        }
      }
    }
  }
}

```

```

    "lastExecutionStatus": {
      "actionName": "create",
      "progress": 100,
      "objectStatus": {
        "phase": "Succeeded",
        "updateAt": "2017-07-12T06:36:37Z"
      },
      "subObjectStatuses": {
        "host-dir": {
          "phase": "Succeeded",
          "updateAt": "2017-07-12T06:36:23Z"
        },
        "paas-console": {
          "phase": "Succeeded",
          "updateAt": "2017-07-12T06:36:23Z"
        },
        "paas-console-app": {
          "phase": "Succeeded",
          "updateAt": "2017-07-12T06:36:36Z"
        }
      }
    },
    "health": {
      "message": "",
      "healthy": true
    }
  }
}

```

- Error response example

```

{
  "message": "Internal error.please check the error log and handle it.",
  "code": "02000051",
  "extend": ""
}

```

Status Code

- Normal

Table 3-65 Status Code

Status Code	Description
200	Querying the stack list is successful.

- Abnormal

Table 3-66 Status Code

Status Code	Description
500	The server fails to process the request due to an unexpected condition.

3.5.5 Querying a Stack

Function

This API is used to query a stack.

URI

GET /v2/stacks/{stack_id}

Table 3-67 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which has a length of 1 to 64 characters

Request

N/A

Response message.

- Response Parameters

A response parameter is a stack structure or response structure.

- The stack structure is returned when the query is successful.
- The failure response structure is returned when the query fails.

The returned stack structure is shown in [Table 3-68](#), and the returned failure response structure is shown in [Table 3-10](#).

Table 3-68 Response Parameters

Parameter	Type	Description
cluster_id	String	ID of the cluster where the stack is located.
cluster_name	String	Name of the cluster where the stack is located.
create_at	String	Stack creation time.
description	String	Stack description.
domain_id	String	Account to which the stack belongs.
dsl_version	String	Version of the template syntax used by the stack.
force	Boolean	Label for stack forcible tailoring.
guid	String	Stack ID.
health	Object	Health check results of a stack. This parameter is not returned when the stack is being created. For details, see Table 3-69 .

Parameter	Type	Description
inputs_json	String	Input parameters of the template used by a stack. Each key-value pair in this parameter corresponds to the key and value in the inputs. If a key is not specified, the default value is used. If no default value is specified, an error is reported.
labels	Map<String,String>	Stack label.
name	String	Stack name.
namespace	String	Namespace to which the stack belongs.
object	Object	Stack running data. This parameter is not returned when the stack is being created. For details, see Table 3-70 .
project_id	String	ID of the project to which the stack belongs.
status	String	Stack status.
template_id	String	Template ID.
template_version	String	Version of the template used by the stack.
update_at	String	Stack update time.

Table 3-69 Data structure of the health field

Parameter	Type	Description
healthy	Boolean	Health status
message	String	Description of the health status

Table 3-70 Data structure of the object field

Parameter	Type	Description
metadata	Object	Metadata of a stack. For details, see Table 3-71 .
spec	Object	Stack specifications. For details, see Table 3-72 .

Parameter	Type	Description
status	Object	Stack execution status. For details, see Table 3-75 .

Table 3-71 Data structure of the object.metadata field

Parameter	Type	Description
annotations	Object	Special attributes of a stack. Currently, there are three fields. <ul style="list-style-type: none"> • paas-iam.alpha.kubernetes.io/domain-id: consistent with the top-level domain_id field • namespace: consistent with the top-level namespace field • cluster-id: consistent with the top-level cluster_id field
labels	Map<String,String>	Stack label.
name	String	Stack name, which is passed as action_id when lifecycle operation is executed.
namespace	String	Stack project ID, which is the same as the top-level project_id field.
resourceVersion	String	Resource version.
selfLink	String	API address for accessing the resource.
uid	String	Stack resource ID, which is the same as the top-level guid field.

Table 3-72 Data structure of the object.spec field

Parameter	Type	Description
selector	Object	This parameter contains a JSONObject field named matchLabels . A key-value pair is included. The key is stackname , and the value is the name field at the top level. For details, see Table 3-73 .

Parameter	Type	Description
template	Object	AOS template attributes. For details, see Table 3-74 .

Table 3-73 Data structure of the object.spec.selector field

Parameter	Type	Description
matchLabels	Map<String,String>	Label information

Table 3-74 Data structure of the object.spec.template field

Parameter	Type	Description
reference	Object	Reference information
type	String	The value is Aos , indicating an AOS template.

Table 3-75 Data structure of the object.status field

Parameter	Type	Description
elementStatuses	Map<String,Object>	Execution status and attributes of each stack element. For details, see Table 3-77 .
healthyStatus	object	Cache of the last stack health check status. For details, see Table 3-78 .
lastExecutionStatus	object	Latest execution status. For details, see Table 3-82 .
phase	String	Stack execution status. The status can be succeeded, executing, suspended, canceled, canceling, forcibly canceling, suspending, retrying, or running. For details, see Table 3-76 .

Table 3-76 phase parameter description

phase Parameter Value	Description
Running	Running.
Pending	Initializing.
Terminating	Deleting.
CreateFailed	Creation failed.
DeleteSucceeded	Deletion succeeded.
DarklaunchSucceeded	Dark launch successful.
UpgradeFailed	Update failed.
DarklaunchFailed	Dark launch failed.
RollbackFailed	Failed to restore the stack.
DeleteFailed	Deletion failed.
UpdateFailed	Updating failed.
ForceCancelled	Forcibly canceled.
CreateSucceeded	Creation succeeded.
RollbackSucceeded	Stack restored successfully.
UpgradeSucceeded	Upgrade successfully.
UpdateSucceeded	Updating successfully.
ReconfigFailed	Failed to edit.
ReconfigSucceeded	Editing successful.
Creating	Creating.
Deleting	Deleting.
Upgrading	Upgrading.
Darklaunching	Performing dark launch.
Rollbacking	Restoring the stack.
Updating	Updating.
Reconfiging	Editing.
CreatePaused	Creation paused.
DeletePaused	Deletion paused.
UpgradePaused	Upgrade paused.
DarkLaunchPaused	Dark launch paused.

phase Parameter Value	Description
RollbackPaused	Stack recovery paused.
UpdatePaused	Updating paused.
ReconfigPaused	Editing paused.
CreateCancelling	Canceling creation.
DeleteCancelling	Canceling deletion.
UpgradeCancelling	Canceling upgrade.
DarklaunchCancelling	Canceling dark launch.
RollbackCancelling	Canceling stack recovery.
UpdateCancelling	Canceling update.
ReconfigCancelling	Canceling editing.
CreateCancelled	Canceling creation.
DeleteCancelled	Canceling deletion.
UpgradeCancelled	Canceling upgrade.
RollbackCancelled	Stack recovery canceled.
ReconfigCancelled	Editing canceled.
CancelFailed	Cancellation failed.
ChangeToPeriodicing	Changing to the yearly/monthly billing mode.
ChangeToPeriodicFailed	Failed to change to the yearly/monthly billing mode.
ChangeToPeriodicSucceeded	Changed to the yearly/monthly billing mode.
ChangeToPeriodicCancelling	Canceling the changing to the yearly/monthly billing mode.

Table 3-77 Data structure of the object.status.elementStatuses field

Parameter	Type	Description
runtimeProperties	Object	Information in runtimeProperties

Table 3-78 Data structure of the object.status.healthyStatus field

Parameter	Type	Description
elements	Map<String, Object>	Health check results of each element. For details, see Table 3-79 .
elementsReference	Object	Element reference information. For details, see Table 3-81 .
healthyCheckTimestamp	String	Timestamp of the health check in the RFC3339 format.
status	String	Status of an element after the health check, for example, Running .

Table 3-79 Data structure of the object.status.healthyStatus.elements field

Parameter	Type	Description
message	String	Health check results of elements.
runtimes	Object	Each key-value indicates a feature of the health check result. For details, see Table 3-80 .
status	String	Status of an element after the health check.

Table 3-80 Data structure of the object.status.healthyStatus.elements.runtimes field

Parameter	Type	Description
fatigue	Integer	Element status
instanceCount	Integer	Number of instances
timestamp	String	Timestamp

Table 3-81 Data structure of the object.status.healthyStatus.elementsReference field

Parameter	Type	Description
APIVersion	String	API version of an element
FieldPath	String	Field path of an element

Parameter	Type	Description
Kind	String	Element type
Name	String	Element name
Namespace	String	Namespace of an element
ResourceVersion	String	Resource version of an element
UID	String	Element UID

Table 3-82 Data structure of the object.status.lastExecutionStatus field

Parameter	Type	Description
actionName	String	Operation name.
objectStatus	Object	Overall execution progress of the operation. For details, see Table 3-83 .
progress	Integer	Execution progress.
subObjectStatuses	Map<String, Object>	Each key-value pair indicates the execution progress of the node corresponding to the key. For details, see Table 3-84 .

Table 3-83 Data structure of the object.status.lastExecutionStatus.objectStatus field

Parameter	Type	Description
message	String	Detailed error information.
phase	String	Execution status of an operation step.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.

Table 3-84 Data structure of the object.status.lastExecutionStatus.subObjectStatuses field

Parameter	Type	Description
createAt	String	UTC timestamp of the information creation in the RFC3339 format.
message	String	Detailed error information.

Parameter	Type	Description
phase	String	Execution status of an operation step.
reason	String	Brief error description in the CamelCase format.
subActionName	String	Name of an element suboperation.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.

- Example Response

```
{
  "force": true,
  "guid": "e167e354-c4d7-11ea-972c-0255ac1003cf",
  "namespace": "default",
  "project_id": "d383836f2d134980beb6a8cc5fcd7ed",
  "cluster_name": "",
  "cluster_id": "",
  "domain_id": "4e9f3643e4cc44aeb8b7473e06ab309b",
  "name": "aoss4iit-b9152f94",
  "description": "",
  "status": "Running",
  "template_id": "779531a0-8949-b015-53a5-62764f56134b",
  "template_name": "no-delete-vpc-period",
  "inputs_json": "{\"HuaweiCloud.DomainId\":\"4e9f3643e4cc44aeb8b7473e06ab309b\", \"HuaweiCloud.NoValue\":\"\", \"HuaweiCloud.PeriodNum\":\"1\", \"HuaweiCloud.PeriodType\":\"month\", \"HuaweiCloud.ProjectId\":\"d383836f2d134980beb6a8cc5fcd7ed\", \"HuaweiCloud.Region\":\"ap-southeast-1\", \"HuaweiCloud.StackName\":\"aoss4iit-b9152f94\", \"HuaweiCloud.UserId\":\"f24e2f88f137420a9cfe8464e5f0a1ff\"}",
  "create_at": "2020-07-08T08:18:57Z",
  "update_at": "2020-07-13T07:10:06Z",
  "labels": "{\"creator\":\"vpc1\"}",
  "dsl_version": "huaweicloud_tosca_version_1_0",
  "object": {
    "metadata": {
      "name": "aoss4iit-b9152f94",
      "namespace": "d383836f2d134980beb6a8cc5fcd7ed",
      "selfLink": "/apis/paas/v1alpha1/namespaces/d38383adweea4980beb6a8cc5fcd7ed/stacks/aoss4iit-b9152f94",
      "uid": "e167e354-c4d7-11ea-972c-0255ac1003cf",
      "resourceVersion": "274630605",
      "labels": {
        "stackname": "aoss4iit-b9152f94"
      }
    },
    "annotations": {
      "cluster-id": "",
      "namespace": "default",
      "paas-iam.alpha.kubernetes.io/domain-id": "4e9f3643e4cc44asswb7473e06ab309b",
    }
  },
  "spec": {
    "selector": {
      "matchLabels": {
        "stackname": "aoss4iit-b9152f94"
      }
    },
    "template": {
      "type": "Aos",
      "reference": {
        "namespace": "d383836f2d134980beb6a8cc5fcd7ed",
        "name": "aoss4iit-b9152f94-713114f1-1430-89fe-5112-992a1830d457",
        "uid": "aoss4iit-b9152f94-713114f1-1430-89fe-5112-992a1830d457"
      }
    }
  }
}
```


Table 3-85 Status Code

Status Code	Description
200	Querying the stack is successful.

- Abnormal

Table 3-86 Status Code

Status Code	Description
404	The requested resource cannot be found.
500	The server fails to process the request due to an unexpected condition.

3.5.6 Querying a Stack Element List

Function

This API is used to query a stack element list.

URI

GET /v2/stacks/{stack_id}/elements

Table 3-87 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which supports a maximum of 64 characters
element_type	No	Stack element type, such as Application , SoftwareComponent , Service , AppGroup , Port , Cluster , or Volume . Other types can also be the types defined in the template. The value supports a maximum of 64 characters.

Request

N/A

Response message.

- Response Parameters
A response parameter is a stack element structure list or response structure.

- The stack element structure list is returned when the query is successful.
- The failure response structure is returned when the query fails.

Table 3-10 shows the structure of a failure response.

Table 3-88 Response Parameters

Parameter	Type	Description
[Array element]	Array of objects	Each element in the array indicates the details about an element in the stack. For details, see Table 3-89 .

Table 3-89 Stack element details

Parameter	Type	Description
id	String	Element name
description	String	Element description
properties	Object	Element attribute, which corresponds to the template content
runtime_properties	Object	Element runtime attribute
relationships	Object	Relationships between elements. For details, see Table 3-90 .
stack_id	String	Stack guid to which the element belongs
type	String	Element type
create_at	String	Element creation time
update_at	String	Element update time
type_hierarchy	String	Stack element type
charge_mode	String	Element billing mode
min_duration	Integer	Minimum lifecycle duration
max_duration	Integer	Maximum lifecycle duration
deletion_policy	String	Element deletion policy
action_status	Object	Status of a stack element. For details, see Table 3-91 .

Table 3-90 Stack Nodes Relationship structure

Parameter	Type	Description
name	String	Relationship name
type	String	Relationship type
target_id	String	Name of the target node of a relationship
type_hierarchy	Array of strings	Inherited structure of the relationship
properties	Object	Attribute of a relationship. The attribute contains a key whose name is connection_type and the type is string , and indicates the connection type of the relationship.

Table 3-91 Data structure of the action_status field

Parameter	Type	Description
subActionName	String	Name of an element suboperation.
phase	String	Stack execution status. The status can be succeeded, executing, suspended, canceled, canceling, forcibly canceling, suspending, retrying, or running. For details, see Table 3-76 .
createAt	String	UTC timestamp of the information creation in the RFC3339 format.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.

- Example Response

```
[
  {
    "id": "subnet",
    "stack_id": "a067769b-c1bb-11ea-8a77-0255ac1003d8",
    "relationships": [
      {
        "name": "vpclId",
        "type": "HuaweiCloud.Relationships.ContainedIn",
        "type_hierarchy": [
          "HuaweiCloud.Relationships.Root",
          "HuaweiCloud.Relationships.DependsOn",
          "HuaweiCloud.Relationships.ContainedIn"
        ],
        "properties": {},
        "target_id": "vpc"
      }
    ]
  }
],
```

```
"type_hierarchy": [
  "HuaweiCloud.Node.Root",
  "HuaweiCloud.VPC.Subnet"
],
"properties": {
  "cidr": "192.168.1.0/24",
  "dhcpEnable": true,
  "gateway": "192.168.1.1",
  "name": "dfsdf",
  "vpclId": {
    "get_attribute": [
      "vpc",
      "refID"
    ]
  }
},
"type": "HuaweiCloud.VPC.Subnet",
"runtime_properties": {
  "neutron_network_id": "940bb729-260c-44fe-ab40-e98367865530",
  "neutron_subnet_id": "dc893222-ab37-4358-b162-3316c97c4958",
  "refID": "940bb729-260c-44fe-ab40-e98367865530",
  "refName": "dfsdf",
  "vpclId": "f78881f0-2944-44d4-9325-966f5f30369e"
},
"action_status": {
  "subActionName": "create",
  "phase": "Succeeded",
  "updateAt": "2020-07-09T08:10:26.830795Z",
  "createAt": "2020-07-09T08:10:22.270746Z"
},
"create_at": "2020-07-09T08:10:18Z",
"update_at": "2020-07-09T08:10:18Z"
},
{
  "id": "vpc",
  "stack_id": "a067769b-c1bb-11ea-8a77-0255ac1003d8",
  "relationships": [],
  "type_hierarchy": [
    "HuaweiCloud.Node.Root",
    "HuaweiCloud.VPC.VPC"
  ],
  "properties": {
    "cidr": "192.168.0.0/16",
    "name": "sdfs"
  },
  "type": "HuaweiCloud.VPC.VPC",
  "runtime_properties": {
    "refID": "f78881f0-2944-44d4-9325-966f5f30369e",
    "refName": "sdfs"
  },
  "action_status": {
    "subActionName": "create",
    "phase": "Succeeded",
    "updateAt": "2020-07-09T08:10:22.270648Z",
    "createAt": "2020-07-09T08:10:18.278579Z"
  },
  "create_at": "2020-07-09T08:10:18Z",
  "update_at": "2020-07-09T08:10:18Z"
}
]
```

Status Code

- Normal

Table 3-92 Status Code

Status Code	Description
200	Querying the stack element list is successful.

- Abnormal

Table 3-93 Status Code

Status Code	Description
404	The requested stack does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.7 Querying a Stack Element

Function

This API is used to query a stack element.

URI

GET /v2/stacks/{stack_id}/elements/{node_id}

Table 3-94 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which supports a maximum of 64 characters
node_id	Yes	Stack element ID, which supports a maximum of 64 characters

Request

N/A

Response message.

- Response Parameters

A response parameter is a stack element structure or response structure.

- The stack element structure is returned when the query is successful.
- The response structure is returned when the query fails.

The stack element structure is shown in [Table 2 Response parameters](#), and the returned response structure is shown in [Table 3-10](#).

Table 3-95 Response Parameters

Parameter	Type	Description
instances	Array of objects	Structure of instances . For details, see Table 3-96 . Only application instances are returned in this structure. This field is empty for cloud services.
id	String	Element name.
description	String	Element description.
properties	Object	Element attribute, which corresponds to the template content.
runtime_properties	Object	Element runtime attribute.
relationships	Array of objects	Relationships between elements. For details, see Table 3-90 .
stack_id	String	Stack guid to which the element belongs.
type	String	Element type.
create_at	String	Element creation time.
update_at	String	Element update time.
type_hierarchy	String	Stack element type.
charge_mode	String	Element billing mode
min_duration	Integer	Minimum lifecycle duration
max_duration	Integer	Maximum lifecycle duration
deletion_policy	String	Element deletion policy
action_status	Object	Status of a stack element. For details, see Table 3-91 .

Table 3-96 Data structure of the instances field

Parameter	Type	Description
items	Array<Map<String,Map<String,String>>>	Information about all instances of an element

- Example Response

```
{
  "create_at": "2016-12-21T05:45:19Z",
```

```
"description": "",
"id": "redis-app",
"properties": {},
"relationships": [],
"runtime_properties": {},
"stack_id": "0404c915-4a0c-260f-e146-eea4b95ee578",
"type": "HuaweiCloud.AOS.StatelessApplication",
"update_at": "2016-12-21T05:45:19Z",
"instances": {
  "items": []
}
}
```

Status Code

- Normal

Table 3-97 Status Code

Status Code	Description
200	Querying the stack element is successful.

- Abnormal

Table 3-98 Status Code

Status Code	Description
404	The requested stack or element does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.8 Querying a Stack Output

Function

This API is used to query a stack output.

URI

GET /v2/stacks/{stack_id}/outputs

Table 3-99 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which has a length of 1 to 64 characters

Request

N/A

Response

- Response parameters

Table 3-100 Response parameters

Parameter	Type	Description
outputs	Object	Stack output information. For each key-value pair, the key indicates the output's name. The value indicates a description. The structure of the description is shown in Table 3-101 .

Table 3-101 Output parameters

Parameter	Type	Description
value	String	Output value, which is generated based on the internal definition of the template and the runtime attribute of the stack
description	String	Output description

NOTE

When the value of the output is defined in the template as **get_attribute: [app, ips]**, the value returned when the output is queried is the character string array of the IP address.

- Example response

```
{
  "outputs": {
    "address_ip": {
      "value": [
        "10.175.11.126"
      ],
      "description": "ip of mysql-instance"
    },
    "address_port": {
      "value": "32138",
      "description": "port of mysql-instance"
    },
    "paasword": {
      "value": "root",
      "description": "paasword of mysql-instance"
    },
    "user_name": {
      "value": "root",
      "description": "user_name of mysql-instance"
    }
  }
}
```

```
}
}
```

Status Code

- Normal

Table 3-102 Status Code

Status Code	Description
200	Querying the stack output is successful.

- Abnormal

Table 3-103 Status code

Status Code	Description
404	The stack does not exist.
500	The server encountered an unexpected condition which prevented it from fulfilling the request.

3.5.9 Querying Stack Input

Function

This API is used to query stack input.

URI

GET /v2/stacks/{stack_id}/inputs

Table 3-104 Parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which has a length of 1 to 64 characters

Request

N/A

Response

- Response parameters

Table 3-105 Response parameters

Parameter	Type	Description
inputs	Object	Stack input information. For each key-value pair, the key indicates the input name. The value indicates the input value.

NOTE

When the input parameter is defined as of the **secret/password** type in the template input, the input value returned in the query interface is encrypted.

- Example response

```
{
  "inputs": {
    "provison_mysql_passwd": "*****",
    "publish_image_name": "10.175.9.211:20202/aos-team/mysql:latest"
  }
}
```

Status Code

- Normal

Table 3-106 Status code

Status Code	Description
200	Querying the stack input information is successful.

- Abnormal

Table 3-107 Status code

Status Code	Description
404	The stack does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.10 Querying the Execution Record of a Stack

Function

This API is used to query a stack execution record.

URI

GET /v2/stacks/{stack_id}/actions/{action_id}

Table 3-108 Parameter description

Parameter	Mandatory	Value Range	Description
stack_id	Yes	String	Stack ID. The value must be 1 to 64 characters long.
action_id	Yes	String	Name of the execution record. The value must be 1 to 64 characters long.

Request

N/A

Response

- Response parameters
For the description about response parameters, see [Table 3-109](#).

Table 3-109 Response parameters

Parameter	Type	Description
metadata	Object	Execution metadata. For details, see Table 3-110 .
spec	Object	Execution attributes. For details, see Table 3-111 .
status	Object	Execution status. For details, see Table 3-114 .

Table 3-110 Execution Metadata structure

Parameter	Type	Description
name	String	Execution name, which is parsed as action_id when the lifecycle operation is executed.
labels	String	Execution label, which is the same as that of the stack during creation. An additional execution-hash field is added.
namespace	String	Project ID of the stack, which is the same as the namespace field of the stack.

Parameter	Type	Description
annotations	Map<String,String>	Special attributes of a stack. Currently, there are three fields. <ul style="list-style-type: none">• paas-iam.alpha.kubernetes.io/domain-id: consistent with the top-level domain_id field• namespace: consistent with the top-level namespace field• cluster-id: consistent with the top-level cluster_id field
resourceVersion	String	Resource version.
selfLink	String	API address for accessing the resource.
uid	String	Stack resource ID, which is the same as the top-level guid field.

Table 3-111 Structure of Execution Spec

Parameter	Type	Description
actionName	String	Lifecycle name of the execution.
changedObjectData	String	Node attribute modified by the execution, which is Base64-encoded.
disableStrategy	String	Perform the operation disabling policy.
location	String	Location of the specified Execution executor.
metadata	Object	Metadata of K8SStackSpec. For details, see Table 3-112 .
objectData	String	Node attribute during execution operation, that is, Base64-encoded template instantiation data.
objectReference	Object	The objectReference parameter of ExecutionSpec . For details, see Table 3-113 .
onFailureStrategy	String	Timeout retry logic of the execution.
source	String	Action source. The options are System and User .

Parameter	Type	Description
subObjectNames	String	Name of the to-be-executed object specified by the execution. If this parameter is not blank, the lifecycle of the specified object is executed. If this parameter is blank, the lifecycle of all objects is executed.
timeoutInMinutes	Integer	Timeout time of the execution.

Table 3-112 Execution Spec Metadata structure

Parameter	Type	Description
labels	Object	Execution label, which is the same as stack.spec.selector.matchlabels during creation. Each internal key-value structure indicates a label with key as the name and value as the value.
namespace	String	The value of this parameter is the same as that of the stack namespace.
Other fields provided by K8S	-	-

Table 3-113 Execution Spec ObjectReference structure

Parameter	Type	Description
kind	Object	Consistent with kind of the stack.
namespace	String	Consistent with namespace of the stack.
uid	String	Consistent with uid of the stack.

Table 3-114 Stack Status ExecutionStatus structure

Parameter	Type	Description
actionName	String	Operation name. The value can be create , delete , upgrade , rollback , reconfig , or retry .

Parameter	Type	Description
progress	Integer	Execution progress.
objectStatus	Object	Overall execution progress of the operation. For details, see Table 3-115 .
subObjectStatuses	Object	Execution progress of an operation sub-step. Each key-value pair indicates the execution progress of the node corresponding to the key. The value is shown in Table 3-116 .

Table 3-115 Stack Status ExecutionStatus ActionStatus structure

Parameter	Type	Description
phase	String	Execution status of an operation step.
message	String	Detailed error information.
reason	String	Brief error description in the CamelCase format.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.

Table 3-116 Stack Status ExecutionStatus SubActionStatus structure

Parameter	Type	Description
phase	String	Execution status of an operation step.
message	String	Detailed error information.
reason	String	Brief error description in the CamelCase format.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.
subActionName	String	Name of an element suboperation.

Parameter	Type	Description
createAt	String	UTC timestamp of the information creation in the RFC3339 format.

- Example response

```
{
  "metadata": {
    "name": "trim-4074942376",
    "namespace": "aos",
    "selfLink": "/apis/paas/v1alpha1/namespaces/aos/executions/trim-4074942376",
    "uid": "ccb8fec5-cc70-11e6-8448-0242ac001004",
    "resourceVersion": "48180",
    "creationTimestamp": "2016-12-27T20:12:32Z",
    "labels": {
      "execution-hash": "4074942376",
      "stackname": "trim"
    },
    "annotations": {
      "paas-iam.alpha.kubernetes.io/domain-id": "ea816a0cc3204ee09efb6d585bee4c58",
      "stack.kubernetes.io/revision": "1"
    },
    "enable": true
  },
  "spec": {
    "metadata": {
      "namespace": "aos",
      "creationTimestamp": null,
      "labels": {
        "execution-hash": "4074942376",
        "stackname": "trim"
      },
      "enable": true
    },
    "objectReference": {
      "namespace": "aos",
      "name": "trim",
      "uid": "cb2cdea0-cc70-11e6-8448-0242ac001004"
    },
    "actionName": "create",
    "timeoutInMinutes": 60,
    "onFailureStrategy": "DoNothing",
    "disableStrategy": "Cancel",
    "source": "User",
    "objectData": "*****",
    "location": "172.16.0.0"
  },
  "status": {
    "actionName": "create",
    "progress": 100,
    "objectStatus": {
      "phase": "Succeeded",
      "updateAt": "2016-12-27T20:12:47Z"
    },
    "subObjectStatuses": {
      "hello-app": {
        "phase": "Succeeded",
        "updateAt": "2016-12-27T20:12:33Z"
      },
      "hello-component": {
        "phase": "Succeeded",
        "updateAt": "2016-12-27T20:12:47Z"
      },
      "hello-package": {
        "phase": "Succeeded",

```

```
    "updateAt": "2016-12-27T20:12:34Z"  
  }  
}  
}
```

Status Code

- Normal

Table 3-117 Status code

Status Code	Description
200	Querying the execution record is successful.

- Abnormal

Table 3-118 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The stack does not exist.
500	The server fails to process the request due to an unexpected condition.

3.5.11 Querying a Stack Execution Record List

Function

This API is used to query the latest execution record list of a stack.

URI

GET /v2/stacks/{stack_id}/actions{?last}

Table 3-119 Path parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which supports a maximum of 64 characters

Table 3-120 Query parameters

Parameter	Mandatory	Type	Description
last	No	Boolean	Whether to return only the last execution record. If this parameter is left blank, the default value false is used. true: Only the latest execution record is returned. false: The latest 10 execution records are returned.

Request

N/A

Response

- Response parameters

The response parameter is a stack execution record list or failure response structure.

- The stack execution record list is returned when the query is successful.
- The failure response structure is returned when the query fails.

The execution record structure is shown in [Table 3-109](#), and the failure response structure is shown in [Table 3-10](#).

- Example response

```
[
  {
    "metadata": {
      "annotations": {
        "aos.security.io/account": "*****",
        "aosmeta.cluster.id": "9c34840a-d8c2-11e7-ba71-0255ac101306",
        "aosmeta.cluster.name": "aos",
        "aosmeta.description": "",
        "aosmeta.domain.id": "e00222f923fa4806be2df93191e83880",
        "aosmeta.force": "false",
        "aosmeta.labels": "",
        "aosmeta.namespace": "default",
        "aosmeta.project.id": "b17be51d45d74323bc39eb60315ba0df",
        "aosmeta.signature": "1",
        "aosmeta.template.id": "39368a8a-7743-c58b-e663-f3f9e80049eb",
        "aosmeta.template.name": "tosca-hello",
        "aosmeta.template.version": "nginx",
        "cluster-id": "9c34840a-d8c2-11e7-ba71-0255ac101306",
        "cluster-version": "v1.5.0-r000000",
        "namespace": "default",
        "paas-iam.alpha.kubernetes.io/domain-id": "e00222f923fa4806be2df93191e83880",
        "stack.kubernetes.io/revision": "2"
      },
      "creationTimestamp": "2018-01-30T13:41:00Z",
      "labels": {
        "execution-hash": "1686326958",
        "stackname": "aos-nginx"
      }
    }
  }
]
```

```
    "name": "aos-nginx-1686326958",
    "namespace": "b17be51d45d74323bc39eb60315ba0df",
    "resourceVersion": "29574440",
    "selfLink": "/apis/paas/v1alpha1/namespaces/b17be51d45d74323bc39eb60315ba0df/
executions/aos-nginx-1686326958",
    "uid": "357f52cf-05c3-11e8-9daa-0255ac1006d2"
  },
  "spec": {
    "actionName": "scale",
    "disableStrategy": "Cancel",
    "location": "172.16.6.229",
    "metadata": {
      "creationTimestamp": null,
      "labels": {
        "execution-hash": "1686326958",
        "stackname": "aos-nginx"
      }
    },
    "namespace": "b17be51d45d74323bc39eb60315ba0df"
  },
  "objectData": "*****",
  "objectReference": {
    "APIVersion": "",
    "FieldPath": "",
    "Kind": "",
    "Name": "aos-nginx",
    "Namespace": "b17be51d45d74323bc39eb60315ba0df",
    "ResourceVersion": "",
    "UID": "7b22745e-05c2-11e8-b90c-0255ac100ece"
  },
  "onFailureStrategy": "DoNothing",
  "source": "User",
  "timeoutInMinutes": 5
},
"status": {
  "actionName": "scale",
  "objectStatus": {
    "phase": "Succeeded",
    "updateAt": "2018-01-30T13:41:13.997416Z"
  },
  "progress": 100,
  "subObjectStatuses": {
    "nginx-app": {
      "phase": "Succeeded",
      "subActionName": "scale",
      "updateAt": "2018-01-30T13:41:13.289541Z"
    }
  }
}
},
{
  "metadata": {
    "annotations": {
      "aos.security.io/account": "*****",
      "aosmeta.cluster.id": "9c34840a-d8c2-11e7-ba71-0255ac101306",
      "aosmeta.cluster.name": "aos",
      "aosmeta.description": "",
      "aosmeta.domain.id": "e00222f923fa4806be2df93191e83880",
      "aosmeta.force": "false",
      "aosmeta.labels": "",
      "aosmeta.namespace": "default",
      "aosmeta.project.id": "b17be51d45d74323bc39eb60315ba0df",
      "aosmeta.signature": "1",
      "aosmeta.template.id": "39368a8a-7743-c58b-e663-f3f9e80049eb",
      "aosmeta.template.name": "tosca-hello",
      "aosmeta.template.version": "nginx",
      "cluster-id": "9c34840a-d8c2-11e7-ba71-0255ac101306",
      "cluster-version": "v1.5.0-r000000",
      "namespace": "default",
      "paas-iam.alpha.kubernetes.io/domain-id": "e00222f923fa4806be2df93191e83880",
```

```
    "stack.kubernetes.io/revision": "1"
  },
  "creationTimestamp": "2018-01-30T13:38:11Z",
  "labels": {
    "execution-hash": "2513653053",
    "stackname": "aos-nginx"
  },
  "name": "aos-nginx-2513653053",
  "namespace": "b17be51d45d74323bc39eb60315ba0df",
  "resourceVersion": "29574154",
  "selfLink": "/apis/paas/v1alpha1/namespaces/b17be51d45d74323bc39eb60315ba0df/
executions/aos-nginx-2513653053",
  "uid": "d0d17824-05c2-11e8-9daa-0255ac1006d2"
},
"spec": {
  "actionName": "create",
  "disableStrategy": "Cancel",
  "location": "172.16.6.229",
  "metadata": {
    "creationTimestamp": null,
    "labels": {
      "execution-hash": "2513653053",
      "stackname": "aos-nginx"
    },
    "namespace": "b17be51d45d74323bc39eb60315ba0df"
  },
  "objectData": "*****",
  "objectReference": {
    "APIVersion": "",
    "FieldPath": "",
    "Kind": "",
    "Name": "aos-nginx",
    "Namespace": "b17be51d45d74323bc39eb60315ba0df",
    "ResourceVersion": "",
    "UID": "7b22745e-05c2-11e8-b90c-0255ac100ece"
  },
  "onFailureStrategy": "DoNothing",
  "source": "User",
  "timeoutInMinutes": 60
},
"status": {
  "actionName": "create",
  "objectStatus": {
    "phase": "Succeeded",
    "updateAt": "2018-01-30T13:38:25.137462Z"
  },
  "progress": 100,
  "subObjectStatuses": {
    "nginx-app": {
      "phase": "Succeeded",
      "subActionName": "create",
      "updateAt": "2018-01-30T13:38:25.033433Z"
    },
    "nginx-container": {
      "phase": "Succeeded",
      "subActionName": "create",
      "updateAt": "2018-01-30T13:38:12.162796Z"
    }
  }
}
}
```

Status Code

- Normal

Table 3-121 Status code

Status Code	Description
200	Querying the stack input information is successful.

- Abnormal

Table 3-122 Status code

Status Code	Description
400	The request parameter is incorrect.
404	The stack does not exist.
500	The server fails to process the request due to an unexpected condition.

4 Appendix

[Status Code](#)

[Error Codes](#)

[Application Orchestration Error Codes](#)

[Obtaining a Project ID](#)

[Obtaining an Account ID](#)

4.1 Status Code

[Table 4-1](#) describes status codes.

Table 4-1 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.

4.2 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 Codes	Error Message	Description	Solution
400	RF.10011001	Missing required parameter(s).	Missing required parameter(s).	Contact technical support.
400	RF.10011002	Unrecognized parameter(s).	Unrecognized parameter(s).	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> .	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> .	Contact technical support.
400	RF.10011005	The length of parameter is longer than upper limit.	The length of parameter is longer than upper limit.	Contact technical support.
400	RF.10011006	The length of parameter is shorter than lower limit.	The length of parameter is shorter than lower limit.	Contact technical support.
400	RF.10011008	Parameter contains invalid letter. Should only contains English characters, number or hyphen.	Parameter contains invalid letter. Should only contains English characters, number or hyphen.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011009	Parameter contains invalid letter. It should start with lower case English characters or number, and only contain lower case English characters, number or hyphen.	Parameter contains invalid letter. It should start with lower case English characters or number, and only contain lower case English characters, number or hyphen.	Contact technical support.
400	RF.10011010	Parameter contains invalid letter. Should start with Chinese or English characters, and only contains Chinese characters, English characters, number, underscore or hyphen.	Parameter contains invalid letter. Should start with Chinese or English characters, and only contains Chinese characters, English characters, number, underscore or hyphen.	Contact technical support.
400	RF.10011013	The size of the file obtained from template_uri exceeds the upper limit.	The size of the file obtained from template_uri exceeds the upper limit.	Contact technical support.
400	RF.10011014	The size of the file obtained from vars_uri exceeds the upper limit.	The size of the file obtained from vars_uri exceeds the upper limit.	Contact technical support.
400	RF.10011015	Stack ID is not matched with current stack with stack name.	Stack ID is not matched with current stack with stack name.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011016	Project ID contains invalid letter. Project ID should only contains English characters, number, hyphen.	Project ID contains invalid letter. Project ID should only contains English characters, number, hyphen.	Contact technical support.
400	RF.10011018	Execution plan ID is not matched with current execution plan with execution plan name.	Execution plan ID is not matched with current execution plan with execution plan name.	Contact technical support.
400	RF.10011022	Invalid file extension. Template file should end with .tf, .tf.json, or .zip	Invalid file extension. Template file should end with .tf, .tf.json, or .zip	Contact technical support.
400	RF.10011025	Invalid file(s) found in zip. A zip file should not contain tfvars files.	Invalid file(s) found in zip. A zip file should not contain tfvars files.	Contact technical support.
400	RF.10011026	The size of unzipped files in zip file is bigger than upper limit.	The size of unzipped files in zip file is bigger than upper limit.	Contact technical support.
400	RF.10011027	Invalid enum value.	Invalid enum value.	Contact technical support.
400	RF.10011028	Composite Validation Error.	Composite Validation Error.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011029	Parameter contains invalid letter. Should only contains English characters or number.	Parameter contains invalid letter. Should only contains English characters or number.	Contact technical support.
400	RF.10011031	Parameter contains invalid letter. Should only contains English characters, number, hyphen or underscore.	Parameter contains invalid letter. Should only contains English characters, number, hyphen or underscore.	Contact technical support.
400	RF.10011032	Can not find request body.	Can not find request body.	Contact technical support.
400	RF.10011033	Request body format is invalid json.	Request body format is invalid json.	Contact technical support.
400	RF.10011034	Invalid vars URI. Vars URI should start with [http https] and end with [.tfvars].	Invalid vars URI. Vars URI should start with [http https] and end with [.tfvars].	Contact technical support.
400	RF.10011035	Invalid template URI. Template URI should start with [http https] and end with [.tf .tf.json .zip].	Invalid template URI. Template URI should start with [http https] and end with [.tf .tf.json .zip].	Contact technical support.
400	RF.10011036	The value of parameter is not a valid instance of integer.	The value of parameter is not a valid instance of integer.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011037	The field value cannot be empty.	The field value cannot be empty.	Contact technical support.
400	RF.10011038	Invalid parameter value type.	Invalid parameter value type.	Contact technical support.
400	RF.10011039	VarKey contains invalid letter. VarKey should Starts with an English letter and only contains English characters, number, hyphen or underscore.	VarKey contains invalid letter. VarKey should Starts with an English letter and only contains English characters, number, hyphen or underscore.	Contact technical support.
400	RF.10011041	The count of unzipped files in zip file is bigger than upper limit.	The count of unzipped files in zip file is bigger than upper limit.	Contact technical support.
400	RF.10011042	The size of template zip is bigger than upper limit.	The size of template zip is bigger than upper limit.	Contact technical support.
400	RF.10011046	Account parameter should not contain octothorpe (#).	Account parameter should not contain octothorpe (#).	Contact technical support.
400	RF.10011049	Invalid vars uri.	Invalid vars uri.	Contact technical support.
400	RF.10011050	Invalid vars uri content.	Invalid vars uri content.	Contact technical support.
400	RF.10011051	Invalid vars body.	Invalid vars body.	Contact technical support.
400	RF.10011052	Var value is empty.	Var value is empty.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011055	Invalid json array.	Invalid json array.	Contact technical support.
400	RF.10011056	Both template_uri and template_body are absence, you should give exactly one parameter from template_uri and template_body.	Both template_uri and template_body are absence, you should give exactly one parameter from template_uri and template_body.	Contact technical support.
400	RF.10011057	Project ID should only contains lower case hexadecimal characters.	Project ID should only contains lower case hexadecimal characters.	Contact technical support.
400	RF.10011065	Found duplicate values in attribute provider_name.	Found duplicate values in attribute provider_name.	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.	File type is not matched with file content.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011083	Invalid zip from template uri: zip contains malformed file(s) that points to a path outside the root directory of the zip file	Invalid zip from template uri: zip contains malformed file(s) that points to a path outside the root directory of the zip file	Contact technical support.
400	RF.10011084	No parameters in the request need to be modified.	No parameters in the request need to be modified.	Contact technical support.
400	RF.10011085	The encoding format of template content is unsupported, it should be utf-8 encoded.	The encoding format of template content is unsupported, it should be utf-8 encoded.	Contact technical support.
400	RF.10011087	Unrecognized search option parameter.	Unrecognized search option parameter.	Contact technical support.
400	RF.10011088	No valid filter method found.	No valid filter method found.	Contact technical support.
400	RF.10011089	The filter value is invalid.	The filter value is invalid.	Contact technical support.
400	RF.10011093	Duplicate fields found.	Duplicate fields found.	Contact technical support.
400	RF.10011095	Missing required template parameter for price inquiry.	Missing required template parameter for price inquiry.	Contact technical support.
400	RF.10011096	Template parameter is invalid for price inquiry.	Template parameter is invalid for price inquiry.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011102	Malformed template zip file found. Failed to read zip file.	Malformed template zip file found. Failed to read zip file.	Contact technical support.
400	RF.10011120	The encoding format of json template content [utf-8 with BOM] is unsupported, it should be utf-8 encoded.	The encoding format of json template content [utf-8 with BOM] is unsupported, it should be utf-8 encoded.	Contact technical support.
400	RF.10011122	Agency is not supported in iam v5 scene, if you want to use agency, please use iam v3.	Agency is not supported in iam v5 scene, if you want to use agency, please use iam v3.	Contact technical support.
400	RF.10011123	Parameter contains invalid letter. Should start with English characters or number, and only contains English characters, number or hyphen.	Parameter contains invalid letter. Should start with English characters or number, and only contains English characters, number or hyphen.	Contact technical support.
400	RF.10011141	The length of vars_body exceeds the upper limit.	The length of vars_body exceeds the upper limit.	Contact technical support.
400	RF.10011151	The length of file path in template zip file exceeds the upper limit.	The length of file path in template zip file exceeds the upper limit.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
400	RF.10011152	The length of file name in template zip file exceeds the upper limit.	The length of file name in template zip file exceeds the upper limit.	Contact technical support.
400	RF.10011155	The path of file in zip can not start with path separator(/)	The path of file in zip can not start with path separator(/)	Contact technical support.
400	RF.10011156	The value between path separator in zip can not be empty, single dot (.) or double dot (..).	The value between path separator in zip can not be empty, single dot (.) or double dot (..).	Contact technical support.
400	RF.10011157	No template file (file name ends with .tf or .tf.json) exists at root dir in zip. There should be at least one template file in root dir in zip.	No template file (file name ends with .tf or .tf.json) exists at root dir in zip. There should be at least one template file in root dir in zip.	Contact technical support.
400	RF.10011166	Parameter should only contain lower English characters, numbers or hyphens, start and end with lower English characters or numbers.	Parameter should only contain lower English characters, numbers or hyphens, start and end with lower English characters or numbers.	Contact technical support.
400	RF.10011167	Invalid function_grap h_urn format.	Invalid function_grap h_urn format.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
401	RF.10012001	Authentication failed.	Authentication failed.	Contact technical support.
403	RF.10012507	Policy doesn't allow action to be performed.	Policy doesn't allow action to be performed.	Contact technical support.
403	RF.10012538	The total count of stacks has exceeded the maximum limit.	The total count of stacks has exceeded the maximum 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 being created in parallel, please take a rest and try again later.	Contact technical support.
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 being created in parallel, please take a rest and try again later.	Contact technical support.
403	RF.10012542	Execution plan cannot be applied due to invalid stack status.	Execution plan cannot be applied due to invalid stack status.	Contact technical support.
403	RF.10012543	Execution plan cannot be applied due to invalid execution plan status.	Execution plan cannot be applied due to invalid execution plan status.	Contact technical support.
403	RF.10012544	Stack cannot be deleted due to invalid stack status.	Stack cannot be deleted due to invalid stack status.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
403	RF.10012545	Execution plan cannot be applied because stack has been deployed since execution plan generated. Please regenerate the execution plan based on the latest stack.	Execution plan cannot be applied because stack has been deployed since execution plan generated. Please regenerate the execution plan based on the latest stack.	Contact technical support.
403	RF.10012546	Auto rollback of stack cannot be enabled due to invalid stack status.	Auto rollback of stack cannot be enabled due to invalid stack status.	Contact technical support.
403	RF.10012547	Invalid stack status. The stack cannot be continue-deployed.	Invalid stack status. The stack cannot be continue-deployed.	Contact technical support.
403	RF.10012549	Invalid stack status. The execution plan cannot be deleted.	Invalid stack status. The execution plan cannot be deleted.	Contact technical support.
404	RF.10013001	Stack is not exist.	Stack is not exist.	Contact technical support.
404	RF.10013002	Execution plan is not exist.	Execution plan is not exist.	Contact technical support.
404	RF.10013023	The stack template does not exist.	The stack template does not exist.	Contact technical support.
404	RF.10013029	Product does not exist for price inquiry.	Product does not exist for price inquiry.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Solution
409	RF.10013501	Conflict execution plan name. Execution plan with name already exist.	Conflict execution plan name. Execution plan with name already exist.	Contact technical support.
409	RF.10013502	Conflict stack name. Stack with name already exist.	Conflict stack name. Stack with name already exist.	Contact technical support.
409	RF.10013503	Stack operation requests conflicted. Another request is being processed. Please retry later.	Stack operation requests conflicted. Another request is being processed. Please retry later.	Contact technical support.
429	RF.10014001	Too many requests. Please try again in a few minutes.	Too many requests. Please try again in a few minutes.	Contact technical support.
500	RF.10010001	Internal Server Error.	Internal Server Error.	Contact technical support.

4.3 Application Orchestration Error Codes

If an error occurs in API calling, no result is returned. Identify the causes of errors based on the error codes of each API. If an error occurs in API calling, HTTP status code 4xx or 5xx is returned. The response body contains the specific error code and information. If you are unable to identify the cause of an error, contact customer service and provide the error code so that we can help you solve the problem as soon as possible.

Format of an Error Response Body

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

```
{  
  "code": "SVCSTG.AOS.4001110",  
  "extend": "The template already exists!"  
}
```

```
"message": "Bad request, name of template is already used.",
"showdetail": false
}
```

In the preceding information, **code** indicates an error code. **extend** is the error message set according to the actual situation. **message** provides the default description of the error. When **showdetail** is set to true, **extend** will be displayed. When **showdetail** is set to false, **message** will be displayed.

Error Code Description

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](#).

Table 4-2 Error code

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4000007	Bad Request, request route not found.	Request error. The requested path cannot be found.	Log in as a user that has the access permission.
40 0	SVCSTG.AO S.4000010	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
40 0	SVCSTG.AO S.4000011	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
40 0	SVCSTG.AO S.4000016	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
40 0	SVCSTG.AO S.4000100	Bad request, no url of archive provided.	Request error. The URL address of the template file is not provided.	Enter the URL of the template file and try again.
40 0	SVCSTG.AO S.4000101	Bad request, credentials is empty.	Request error. No authentication information is provided.	Enter the template authentication information and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4000102	Bad request, archive url is invalid	The URL of the template file is invalid.	Correct the URL of the template file and try again.
400	SVCSTG.AO S.4000106	Bad request, no namespace provided.	Request error. The namespace information is not carried.	Specify the namespace and try again.
400	SVCSTG.AO S.4000107	Bad request, no package name provided	Request failed. The software package name is not carried.	Add the software package name and try again.
400	SVCSTG.AO S.4000108	Bad request, no archive name provided.	Request failed. The template file name is not carried.	Add the template file name and try again.
400	SVCSTG.AO S.4000117	Bad request, no file to be upload.	Request error. No template files specified to upload.	Add a template file and try again.
400	SVCSTG.AO S.4000120	Bad request, when searching package, name provided is empty.	No software package names specified in software package query.	Enter a software package name and try again.
400	SVCSTG.AO S.4000122	Bad request, find multiple archive.	Request error. Multiple software packages that meet the specified criteria have been found.	Correct the software package name and try again.
400	SVCSTG.AO S.4000127	Bad request, no domain provided.	No domain information is provided.	Enter the domain information and try again.
400	SVCSTG.AO S.4000133	Bad request, path not found.	Request error. The template file path cannot be found.	Enter a correct template file address and try again

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4000200	Bad request, archive is not existed.	Request error. The template file does not exist.	Enter a correct template file address and try again
40 0	SVCSTG.AO S.4000201	Bad request, unsupported archive type.	Request error. The template file type is not supported.	Change the template file to a supported format and try again.
40 0	SVCSTG.AO S.4000319	Bad request, type of getting resource invalid.	Request error. The obtained resource type is invalid.	Contact technical support.
40 0	SVCSTG.AO S.4000326	Bad request, cluster is not available.	Request error. The cluster is unavailable.	Fix the issues or select another cluster and try again.
40 0	SVCSTG.AO S.4000327	Bad request, namespace is not available.	Request error. The namespace is unavailable.	Fix the issues of the cluster namespace and try again.
40 0	SVCSTG.AO S.4000503	Bad request, find multiple public chart package.	Request error. Multiple public chart packages are found.	Contact technical support.
40 0	SVCSTG.AO S.4000504	Bad request, URL of chart is null.	Request error. The address of the chart package is empty.	Enter a correct the chart package address and try again.
40 0	SVCSTG.AO S.4000505	Bad request, chart package specified is not exist.	Request error. The specified chart package does not exist.	Enter a correct chart package name and try again.
40 0	SVCSTG.AO S.4000506	Bad request, find multiple chart package in specified namespace.	Request error. The name of the chart package in the namespace is not unique.	Enter a correct chart package name and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4000507	Bad request, neither chart name nor chart URL is specified.	Request error. Neither the name nor the address of the chart package is specified.	Enter the chart package name and address and try again.
400	SVCSTG.AO S.4000600	Bad request, package name is null.	Request error. The template file name is empty.	Enter the template file name and try again.
400	SVCSTG.AO S.4000601	Bad request, package name is invalid.	Request error. The template file name is invalid.	Enter a valid template file name and try again.
400	SVCSTG.AO S.4000602	Request is invalid.	The template metadata is invalid.	Correct the template metadata and try again.
400	SVCSTG.AO S.4001004	Bad request, invalid input template file.	Request error. The entered template file is invalid.	The template file is incorrect. Modify the file and try again.
400	SVCSTG.AO S.4001005	Bad request, template file is too large.	The size of the template file exceeds the limit.	Reduce the size and try again.
400	SVCSTG.AO S.4001007	Bad request, template is null.	Request error. The template file is empty.	Ensure that the template file is not empty and try again.
400	SVCSTG.AO S.4001007	Bad request, template is null.	Request error. The template logo is empty.	Ensure that the template logo is not empty and try again.
400	SVCSTG.AO S.4001008	Bad request, template name can not be updated.	Request error. The template name cannot be updated.	The template name cannot be updated.
400	SVCSTG.AO S.4001009	Bad request, template scope can not be updated.	Request error. The template scope cannot be updated.	The template scope cannot be updated.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4001011	Bad request, archive name is already existed.	The template file name already exists in the software repository. Use another name.	Change the template name and try again.
400	SVCSTG.AO S.4001013	Bad request, main file of template can not be updated.	Request error. The main file of the template cannot be updated.	The main file of the template cannot be updated.
400	SVCSTG.AO S.4001014	Bad request, template filename is empty	Request error. The template file is empty.	Ensure that the template file is not empty and try again.
400	SVCSTG.AO S.4001015	Bad request, invalid input template image.	Request error. The entered template logo is invalid.	Correct the template logo and try again.
400	SVCSTG.AO S.4001016	Bad request, template image is too large.	The size of the template logo exceeds the limit.	Reduce the size of the template logo and try again.
400	SVCSTG.AO S.4001101	Bad request, request body is too large.	Request error. The request body is too large.	Reduce the request body size and try again.
400	SVCSTG.AO S.4001102	Bad request, resource parameter is invalid.	Request error. The resource parameter in the request is incorrect.	Correct the resource parameter in the request and try again.
400	SVCSTG.AO S.4001103	Bad request, resource parameter is invalid.	Request error. The resource parameter in the request body is invalid.	Correct the request parameter and try again.
400	SVCSTG.AO S.4001104	Bad request, name of template is invalid.	Request error. The template name is invalid.	Change the template name and try again.
400	SVCSTG.AO S.4001105	Bad request, description of template is invalid.	Request error. The template description is invalid.	Modify the template description and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4001106	Bad request, version of template is invalid.	Request error. The version field is invalid.	Modify the template version and try again.
400	SVCSTG.AO S.4001107	Bad request, vendor of template is invalid.	Request error. The vendor field is invalid.	Modify the template vendor and try again.
400	SVCSTG.AO S.4001108	Bad request, scope of template is invalid.	Request error. The template scope is invalid.	Change the template scope and try again.
400	SVCSTG.AO S.4001110	Bad request, name of template is already used.	Request error. The template name already exists.	Change the template name and try again.
400	SVCSTG.AO S.4001115	Bad request, main file of template is invalid.	Request error. The main file of the template is invalid.	Correct the main file of the template and try again.
400	SVCSTG.AO S.4001117	Bad request, toska version of template is invalid.	Request error. Invalid template TOSCA version.	The template TOSCA version is not supported. Change the version and try again.
400	SVCSTG.AO S.4001118	Bad request, invalid template type, must be yaml, json, file.	Request error. The template file type is invalid.	Choose a valid template file type and try again.
400	SVCSTG.AO S.4001119	Parse template failed, template is invalid, please check.	Failed to verify the template. The template is invalid.	Contact technical support.
400	SVCSTG.AO S.4001120	Bad request, project id in token is invalid.	Request error. The project ID is invalid.	Enter a valid project ID and try again.
400	SVCSTG.AO S.4001122	Bad request, invalid encoding format of template file.	Request error. The code format of the template file is incorrect.	Modify the template file code and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4001124	Old AOS application type is now replaced by type ServiceStage	Request error. The old AOS application model contained in the template has been replaced by the ServiceStage type.	Contact technical support.
400	SVCSTG.AO S.4001201	Bad request, scope is invalid.	Request error. The scope is invalid.	The scope is invalid. Modify the scope and try again.
400	SVCSTG.AO S.4001400	Bad request, stack required is not exist.	Request error. The requested stack does not exist.	The stack does not exist. Check the stack.
400	SVCSTG.AO S.4001500	Bad request, template ID is invalid.	Request error. The template ID is invalid.	Enter a valid template ID and try again.
400	SVCSTG.AO S.4001502	Bad request, isDelTemplatePackage param error.	Request error. The parameter that determines whether a template needs to be deleted is incorrect.	Modify the parameter and try again.
400	SVCSTG.AO S.4001600	Bad request, local parameter is invalid.	Request error. The local parameter in the request is incorrect.	Modify the local parameter and try again.
400	SVCSTG.AO S.4001800	Bad request, request body is invalid.	Request error. The request body is invalid.	Modify the request body and try again.
400	SVCSTG.AO S.4001801	Validate template failed, template is invalid, please check.	Failed to verify the template. The template is invalid.	Contact technical support.
400	SVCSTG.AO S.4001900	Converge template failed, please check.	Template convergence parsing failed. The template is invalid.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4001901	Request parameter error, please check.	Request parameter error.	Modify the invalid request body for creating a stack and try again.
400	SVCSTG.AO S.4001902	Request parameter error, please check.	Request parameter error.	Modify the invalid request body for creating a stack and try again.
400	SVCSTG.AO S.4002000	Request parameter error, please check.	Request parameter error.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002001	Bad request, invalid stack name.	Request error. The stack name is invalid.	Modify the stack name and try again.
400	SVCSTG.AO S.4002002	Bad request, invalid stack description.	Request error. The stack description is invalid.	Modify the stack description and try again.
400	SVCSTG.AO S.4002003	Bad request, project ID is invalid.	Request error. The project ID is invalid.	Modify the project ID and try again.
400	SVCSTG.AO S.4002004	Bad request, invalid template ID.	Request error. The template ID is invalid.	Modify the template ID and try again.
400	SVCSTG.AO S.4002008	Bad request, input parameters is invalid.	Request error. The input parameter is invalid.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002009	Bad request, request parameter error, please check.	Request error. The input parameter is invalid.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002011	Bad request, some input parameters are too long.	Request error. The input parameters reach the maximum length.	Modify the request parameter and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4002013	Bad request, input parameter is invalid.	Request error. The input parameter is invalid. Please check.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002015	Bad request, package property is not right.	Request error. The attribute parameter of the package is invalid.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002018	Bad request, external node properties is invalid.	Request error. The attribute of the externally-dependent node is invalid.	Contact technical support.
400	SVCSTG.AO S.4002020	Bad request, external stack name not found in namespace.	Request error. The stack where the external node resides is not found.	Contact technical support.
400	SVCSTG.AO S.4002021	Bad request, external node not in stack getting from database.	Request error. The external node is not in the stack specified by the template.	Contact technical support.
400	SVCSTG.AO S.4002024	Bad request, labels of stack is invalid	Request error. The stack label is invalid.	Modify the stack label and try again.
400	SVCSTG.AO S.4002027	Bad request, scale parameters defined in inputs and nodes at the same time is not support	Request error. The scale parameter cannot be defined in both input and node.	Ensure that the scale parameter is not defined in both input and node and try again.
400	SVCSTG.AO S.4002028	Bad request, not supported scale parameter, please define instances to inputs.	Request error. Define the scaling parameters in inputs .	Define the scaling parameters in inputs and try again.
400	SVCSTG.AO S.4002029	Create stack failed, instantiate template failed.	Failed to create the stack or failed to instantiate the template.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4002030	Bad request, template is invalid, need trimmed node does not marked as deploy false	Request error. The template is invalid. The node to be tailored in the template is not marked as deploy false .	Contact technical support.
400	SVCSTG.AO S.4002031	Create domain agency failed	Request error. The old AOS application model contained in the stack has been replaced by the ServiceStage type.	Contact technical support.
400	SVCSTG.AO S.4002100	Bad request, stack ID is invalid.	Request error. The stack ID is invalid.	Modify the stack ID and try again.
400	SVCSTG.AO S.4002103	Bad request, request parameter error, please check.	Request error. The request parameter is invalid.	Modify the parameter and try again.
400	SVCSTG.AO S.4002200	Bad request, project ID is invalid.	Request error. The project ID is invalid.	Modify the project ID and try again.
400	SVCSTG.AO S.4002400	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect.	Modify the parameter and try again.
400	SVCSTG.AO S.4002401	Bad request, stack name can not be updated.	Request error. Stack names cannot be updated.	Stack names cannot be updated.
400	SVCSTG.AO S.4002500	Bad request, request body is invalid.	Request error. The request body is invalid.	Modify the request parameter and try again.
400	SVCSTG.AO S.4002501	Bad request, lifecycle parameter is invalid.	Request error. The lifecycle parameter is invalid.	Modify the lifecycle parameter and try again.

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4002502	Bad request, number of scaling instances is not specified.	Request error. Specify the number of instances for scaling.	Enter the number of instances for scaling and try again.
40 0	SVCSTG.AO S.4002507	Bad request, failure strategy is invalid.	Request error. The policy of rollback after a stack fails to be created is invalid.	Modify the rollback policy and try again.
40 0	SVCSTG.AO S.4002508	Bad request, strategy specified is not supported for this action.	Request error. The lifecycle policy specified is not supported.	Modify the lifecycle policy and try again.
40 0	SVCSTG.AO S.4002513	Bad request, node upgraded does not exist in original stack.	Request error. The node to be upgraded is not in the original stack.	Contact technical support.
40 0	SVCSTG.AO S.4002515	Bad request, the stack has not been upgraded and can not be rolled back.	Request error. The stack cannot be rolled back because it has not been upgraded.	Stacks that have not been upgraded cannot be rolled back.
40 0	SVCSTG.AO S.4002522	Bad request, upgrade node type is not software component.	Request error. The node to be upgraded is not a software component.	Contact technical support.
40 0	SVCSTG.AO S.4002523	Bad request, upgrade node is not included by any application.	Request error. The node to be upgraded is not contained in any application.	Contact technical support.
40 0	SVCSTG.AO S.4002536	Bad request, url property does not exist in action body.	The node attribute of the request body does not contain the URL attribute.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4002547	Bad request, application can not be stopped.	Request error. The application cannot be started or stopped.	The selected application cannot be started or stopped.
400	SVCSTG.AO S.4002548	Bad request, the stack action can not be retry for none action history found.	Request error. No stack execution records are found. Retry is not allowed.	Do not retry when the selected stack has no execution record.
400	SVCSTG.AO S.4002549	Bad request, parameter of scaling is invalid	Request error. The scaling parameter is invalid.	Modify the scaling parameter and try again.
400	SVCSTG.AO S.4002551	Bad request, policy can not be changed.	Request error. The policy does not support topology changes.	Change the policy type and try again.
400	SVCSTG.AO S.4002556	Bad request, statefulSet application with OnDelete update strategy can not be upgraded.	Request error. The StatefulSet that is configured with the OnDelete upgrade policy cannot be upgraded.	Contact technical support.
400	SVCSTG.AO S.4002562	Bad request, node name is invalid	Request error. The node name is invalid.	Modify the node name and try again.
400	SVCSTG.AO S.4002563	Bad request, node type changed during upgrading.	Request error. The node type is changed during an upgrade.	Ensure that the node type is not changed during stack upgrade and try again.
400	SVCSTG.AO S.4002564	Bad request, node relationship changed during upgrading.	Request error. The node relationship is changed during an upgrade.	Ensure that the node relationship is not changed during stack upgrade and try again.

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4002566	Bad request, node immutable property changed during upgrading.	Request error. The node attribute which should remain unchanged is changed during an upgrade.	Ensure that the immutable attribute of the node is not changed during stack upgrade and try again.
40 0	SVCSTG.AO S.4002567	Bad request, label of application changed during upgrading.	Request error. The label of the application is changed during an upgrade.	Ensure that the label of the application is not changed during stack upgrade.
40 0	SVCSTG.AO S.4002568	Bad request, bindServices of node added or removed.	Request error. The number of services bound to the node increases or decreases during an upgrade.	Ensure that the number of services bound to the node is not changed during stack upgrade.
40 0	SVCSTG.AO S.4002569	Bad request, node removed but node has relationship with it was not removed.	Request error. A node is deleted during an upgrade, but its associated nodes are not deleted.	Ensure that the associated nodes are deleted along with the target node you delete during an upgrade and try again.
40 0	SVCSTG.AO S.4002571	Bad request, dsl version of template can not be changed.	Request error. The tosca_version of the template is changed.	Ensure that the tosca_version of the template is not changed and try again.
40 0	SVCSTG.AO S.4002572	Bad request, not supported node was added during upgrading.	Request error. The type of the new node is not allowed.	Modify the type of the new node and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4002573	Bad request, added node has relationship with old nodes, it is forbidden.	Request error. The new node has established a relationship with the original node.	Ensure that no relationship is established between the new and original nodes and try again.
400	SVCSTG.AO S.4002574	Bad request, the action can not be cancelled	Request error. The current action cannot be cancelled.	The current action cannot be cancelled.
400	SVCSTG.AO S.4002575	Bad request, the action can not auto rollback	Request error. The automatic rollback action is not supported.	Ensure that no automatic rollback is executed for the current action and try again.
400	SVCSTG.AO S.4002576	Bad request, no parameter change during upgrading.	Request error. The stack parameter remains unchanged. Upgrade is not allowed.	Do not upgrade when the stack parameter remains unchanged.
400	SVCSTG.AO S.4002577	Bad request, cce nodepool instances can not decrease.	Request error. The stack parameter is incorrect. Upgrade and scaling are not allowed.	Ensure that the stack parameter is not changed and try again.
400	SVCSTG.AO S.4002578	Bad request, no order id when periodic upgrade.	Request error. The stack parameter is incorrect. Upgrade and scaling are not allowed.	Ensure that the stack parameter is not changed and try again.
400	SVCSTG.AO S.4002600	Bad request, node type is invalid.	Request error. The node_type of the request is not specified.	Specify the node type and try again.
400	SVCSTG.AO S.4002700	Bad request, node ID is invalid.	Request error. The node ID is invalid.	Modify the node ID and try again.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4002702	Bad request, node instance ID is invalid.	Request error. The instance ID of the node is invalid.	Modify the node instance ID and try again.
400	SVCSTG.AO S.4003000	Bad request, action ID is invalid.	Request error. The action ID is invalid.	Modify the action ID and try again.
400	SVCSTG.AO S.4003600	Bad request, requested policy type error.	The request policy type is incorrect.	Modify the policy type in the request and try again.
400	SVCSTG.AO S.4003700	Bad request, inputs or template version modified, however make no change to this stack.	Request error. The stack parameter remains unchanged.	Do not change when the stack parameter remains unchanged.
400	SVCSTG.AO S.4003908	Bad request, external node can not be external node type.	Template error. The specified external node cannot be of the ExternalNode type.	Modify the specified external node type and try again.
400	SVCSTG.AO S.4003909	Bad request, external node specified is not exist.	Template error. The specified external node does not exist.	Modify the specified external node and try again.
400	SVCSTG.AO S.4003910	Bad request, external node is itself.	Request error. The node itself is specified as the external node.	Ensure that the node itself is not specified as the external node and try again.
400	SVCSTG.AO S.4003915	Bad request, immutable input can not be upgraded.	Request error. The unchangeable input parameters cannot be upgraded.	Ensure that the unchangeable input parameters are not changed and try again.
400	SVCSTG.AO S.4004000	Stack is no need for health check	The stack does not require a health check.	The stack does not require a health check.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4004100	template need for reUpload	The template used for obtaining parameter details during stack upgrade must be a newly uploaded template.	Contact technical support.
400	SVCSTG.AO S.4004104	get error when re parse old template	An error occurred in parsing the old template again.	Contact technical support.
400	SVCSTG.AO S.4004200	unmarshal preview upgrade stack template inputs error	An error occurred in parsing the template inputs.	Contact technical support.
400	SVCSTG.AO S.4004201	unmarshal stack template inputs error	An error occurred in parsing the template inputs.	Contact technical support.
400	SVCSTG.AO S.4004600	Bad request, please check.	Request body error.	Modify the request body and try again.
400	SVCSTG.AO S.4004601	Bad request, the input type of update state is invalid.	Request error. The input type is invalid.	Modify the input type and try again.
400	SVCSTG.AO S.4004603	Bad request, input parameter invalid, please check.	The request parameter is invalid.	Modify the request parameter and try again.
400	SVCSTG.AO S.4004702	Bad request, invalid tenant ID.	Request error. The tenant ID is invalid.	Modify the tenant ID and try again.
400	SVCSTG.AO S.4004704	Bad request, quota number is invalid	Request error. The quota is invalid.	Modify the quota parameter and try again.
400	SVCSTG.AO S.4004705	Create stack quota failed	Request error. The quota is invalid.	Modify the quota parameter and try again.

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4005003	Sample template zip package is empty.	Internal server error.	Contact technical support.
40 0	SVCSTG.AO S.4005007	Sample template compress package only support zip format.	Internal server error.	Contact technical support.
40 0	SVCSTG.AO S.4005009	Parse description file failed, maybe description file did not exist or json format error.	Internal server error.	Contact technical support.
40 0	SVCSTG.AO S.4005011	Sample template is already exist, please check the name and version.	Internal server error.	Contact technical support.
40 0	SVCSTG.AO S.4005015	No Certain sample template in db.	Internal server error.	Contact technical support.
40 0	SVCSTG.AO S.4005110	Bad request, template does not contains periodic resource.	Request error. The requested template does not contain resources billed in yearly/monthly mode.	The requested template does not contain resources billed in yearly/ monthly mode. Orders are not required.
40 0	SVCSTG.AO S.4005113	Bad request, periodic resource in template is null.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
40 0	SVCSTG.AO S.4005203	Bad request, unmarshal request body failed when parse former.	Request error. An error occurred in parsing the generator request information.	Contact technical support.
40 0	SVCSTG.AO S.4005204	Bad request, elements is nil when parse former.	Request error. The number of generator elements is 0.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
40 0	SVCSTG.AO S.4005205	Bad request, invalid former id.	Request error. The former ID is invalid.	Contact technical support.
40 0	SVCSTG.AO S.4005210	Bad request, already save template.	Request error. The template cannot be saved again.	Saved templates cannot be saved again.
40 0	SVCSTG.AO S.4005211	Bad request, the domain has processing former process.	Request error. The tenant already has a generation record that is being processed.	Try again after the generator in process finishes.
40 1	SVCSTG.AO S.4010002	Unauthorized.	The authentication failed as the client is not authorized.	Switch to a user that has the operation permission or contact technical support.
40 1	SVCSTG.AO S.4010005	Unauthorized, please contact administrator.	Internal authentication failed.	Contact technical support.
40 1	SVCSTG.AO S.4010008	Unauthorized, please contact administrator.	Internal authentication failed.	Switch to a user that has the access permission.
40 3	SVCSTG.AO S.4030006	Permission denied.	No access permission.	Switch to a user that has the access permission.
40 3	SVCSTG.AO S.4030014	Permission denied, your account is suspended, please contact administrator.	Failed to access as your account has been frozen.	Contact technical support to unfreeze your account.

St at us Co de	Error Code	Message	Description	Solution
403	SVCSTG.AO S.4030015	Permission denied, your account is restricted, please refill your account if your balance is insufficient, or contact administrator.	Failed to access as your account has been restricted. Please contact the administrator. If your account balance is insufficient, top up your account first.	Contact technical support to remove the restrictions.
403	SVCSTG.AO S.4031116	Permission denied, the number of templates exceeds maximum limit.	Unauthorized operation. The number of templates exceeds the limit.	Reduce the number of templates and try again.
403	SVCSTG.AO S.4032025	Permission denied, number of stacks exceeds the maximum limits.	No operation permission. The number of stacks reaches the limit.	Stacks cannot be created when the stack quota is used up.
404	SVCSTG.AO S.4040012	Template specified is not exist.	The template does not exist.	Use a valid template.
404	SVCSTG.AO S.4040013	Stack specified is not exist.	The stack does not exist.	Use a valid stack.
404	SVCSTG.AO S.4040017	Lock resource is not found, please check.	The resource does not exist.	Please try again later.
404	SVCSTG.AO S.4040115	Archive list is nil.	The template file is empty.	Add a template file and try again.
404	SVCSTG.AO S.4040121	Archive specified is not exist.	The specified software package or image package does not exist.	Modify the software package name and try again.
404	SVCSTG.AO S.4041701	Could not found image for template.	Request error. The requested logo does not exist.	The template logo does not exist. Ensure you request a valid picture.

St at us Co de	Error Code	Message	Description	Solution
404	SVCSTG.AO S.4042101	The stack does not exist.	The target stack does not exist.	Switch to another stack to access.
409	SVCSTG.AO S.4090018	Bad request, lock resource stack is locking	Cloud service operation conflicts.	Try again later.
409	SVCSTG.AO S.4090116	Bad request, archive is already existed.	Request error. The template file already exists in the software repository.	Change the template name and try again.
409	SVCSTG.AO S.4090329	Bad request, execute lifecycle request is already existed	Request error. The Kubernetes request already exists.	Contact technical support.
409	SVCSTG.AO S.4091010	Bad request, templates is already used by stack.	Request error. A stack has been created for the template.	Do not delete the template with a stack created.
409	SVCSTG.AO S.4092006	Bad request, stack name is already existed.	Request error. The stack name already exists.	Change the stack name and try again.
409	SVCSTG.AO S.4092019	Bad request, external stack name and namespace conflicts.	Request error. The stack where the external node resides is not unique.	Contact technical support.
429	SVCSTG.AO S.4290009	The server is too busy, please try again later.	Server busy.	Wait for a while and try again. If the fault persists, contact technical support.
500	SVCSTG.AO S.5000000	Request to authenticate failed.	Request authentication failed.	Contact technical support.
500	SVCSTG.AO S.5000001	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5000003	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
50 0	SVCSTG.AO S.5000004	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
50 0	SVCSTG.AO S.5000005	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
50 0	SVCSTG.AO S.5000103	Get archive failed.	Failed to obtain the template file.	Ensure that the template can be obtained in the specified address and try again.
50 0	SVCSTG.AO S.5000105	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000109	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000110	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000111	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000112	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5000113	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000114	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000118	Delete archive failed.	Failed to delete the template file.	Contact technical support.
500	SVCSTG.AO S.5000119	Delete archive failed.	Failed to delete the template file.	Contact technical support.
500	SVCSTG.AO S.5000124	Upload template failed, get namespace failed.	Failed to create the template or failed to obtain the namespace.	Contact technical support.
500	SVCSTG.AO S.5000125	Upload template failed, create namespace failed.	Failed to create the template or failed to create the namespace.	Contact technical support.
500	SVCSTG.AO S.5000126	Upload template failed, add namespace access error.	Failed to create the template or failed to add the domain permission for the namespace.	Contact technical support.
500	SVCSTG.AO S.5000128	Operation failed, get OBS client failed.	Operation failed. Failed to obtain the OBS client.	Contact technical support.
500	SVCSTG.AO S.5000129	Upload template failed, query bucket error.	Failed to create the template or failed to query the bucket.	Contact technical support.
500	SVCSTG.AO S.5000130	Upload template failed, create bucket error.	Failed to create the template or failed to create the bucket.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5000131	Upload template failed, put object to obs error.	Failed to create the template or failed to store the template file.	Contact technical support.
500	SVCSTG.AO S.5000132	Delete template failed, delete object from obs error.	Deletion failed.	Contact technical support.
500	SVCSTG.AO S.5000134	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000202	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000203	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000204	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000205	Parse template failed since no response from parser.	No information is returned when the template is verified.	Contact technical support.
500	SVCSTG.AO S.5000207	Parse template failed for an unknown reason.	Failed to verify the template.	Contact technical support.
500	SVCSTG.AO S.5000208	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000209	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5000210	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000211	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000212	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000213	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000214	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000215	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000216	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000217	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000218	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000300	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5000301	Create stack failed.	Failed to create a stack.	Contact technical support.
50 0	SVCSTG.AO S.5000302	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000303	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000304	Request to get stack info failed.	Failed to obtain stack information.	Contact technical support.
50 0	SVCSTG.AO S.5000305	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000306	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000307	Request to get stack node instance failed.	Failed to obtain the stack instance.	Contact technical support.
50 0	SVCSTG.AO S.5000308	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000309	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000310	Request to get stack executions failed.	Failed to obtain the stack execution data.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5000311	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000312	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000313	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000314	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000315	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000316	Request to get stack info failed.	Failed to obtain stack information.	Contact technical support.
500	SVCSTG.AO S.5000317	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000318	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000320	Get Resource by label failed.	Failed to obtain the resource by label.	Contact technical support.
500	SVCSTG.AO S.5000321	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5000322	Get resource by name failed.	Failed to obtain the resource by name.	Contact technical support.
500	SVCSTG.AO S.5000323	Get cluster failed.	Failed to obtain the cluster.	Contact technical support.
500	SVCSTG.AO S.5000324	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000325	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000328	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000330	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000400	Request to get project detail failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000401	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000402	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000500	Failed to get chart package.	Failed to obtain the chart package.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5000501	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000502	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001002	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001003	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001006	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001012	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001109	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001112	Database operation failed, please contact the administrator.	Database operation error. Contact the administrator.	Contact technical support.
50 0	SVCSTG.AO S.5001113	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001114	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5001121	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001200	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001501	Delete failed, please contact administrator.	Deletion failed. Contact technical support.	Contact technical support.
50 0	SVCSTG.AO S.5001503	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5001700	Server internal error, Could not found url for download.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002005	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002007	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002012	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002014	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002016	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5002017	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002022	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002023	Database operation failed, please contact the administrator.	Database operation error. Contact the administrator.	Contact technical support.
500	SVCSTG.AO S.5002026	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002102	Delete stack failed.	Failed to delete a stack.	Contact technical support.
500	SVCSTG.AO S.5002105	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002106	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002107	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002201	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002402	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5002403	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002503	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002504	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002509	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002510	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002511	Get node instances num failed.	Failed to obtain the number of instances for scaling.	Contact technical support.
500	SVCSTG.AO S.5002512	Parse instances Failed.	Failed to parse the scaling instance.	Contact technical support.
500	SVCSTG.AO S.5002514	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002516	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002517	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5002518	Values property does not exist in origin stack.	The stack containing the helm application does not have the value property.	Contact technical support.
500	SVCSTG.AO S.5002519	Chart property does not exist in origin stack.	The stack containing the helm application does not have the chart property.	Contact technical support.
500	SVCSTG.AO S.5002520	Version name or url property does not exist in origin stack.	The stack containing the helm application does not have the version, name, or url property.	Contact technical support.
500	SVCSTG.AO S.5002521	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002524	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002526	Package property does not exist in origin stack.	The stack does not have the package property.	Contact technical support.
500	SVCSTG.AO S.5002530	name property does not exist in action body.	The node attribute of the request body does not contain the name property.	Contact technical support.
500	SVCSTG.AO S.5002531	version property does not exist in action body.	The node attribute of the request body does not contain the version property.	Contact technical support.
500	SVCSTG.AO S.5002532	url property does not exist in action body.	The node attribute of the request body does not contain the url property.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5002534	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002535	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002540	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002541	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002542	Package type incorrect.	The package type is incorrect.	Contact technical support.
500	SVCSTG.AO S.5002543	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002544	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002545	Get node from stack elements failed.	Failed to obtain the stopped node.	Contact technical support.
500	SVCSTG.AO S.5002546	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5002550	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5002552	Get last succeed version failed.	Failed to obtain the lifecycle of the last stack execution.	Contact technical support.
50 0	SVCSTG.AO S.5002553	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002554	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002558	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002559	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002560	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002561	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002565	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5002601	Server internal error, please contact the administrator.	Failed to obtain template data.	Contact technical support.
50 0	SVCSTG.AO S.5002701	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5002801	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003200	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003201	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003202	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003203	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003300	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003301	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003302	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003303	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003304	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5003400	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003401	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003500	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003900	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003901	Node property is not right.	The node property is invalid.	Modify the node property and try again.
500	SVCSTG.AO S.5003904	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003905	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003906	External node is none.	The external node is empty.	Ensure that the external node is not empty and try again.
500	SVCSTG.AO S.5003907	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003911	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5003912	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003913	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003914	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003916	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5003917	Unknown registry parameter.	The request parameter has not been registered.	Contact technical support.
50 0	SVCSTG.AO S.5003919	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5004001	Stack health check failed.	The stack fails the health check.	Contact technical support.
50 0	SVCSTG.AO S.5004101	unmarshal template inputs error	An error occurred in parsing the template inputs.	Contact technical support.
50 0	SVCSTG.AO S.5004102	get merged input details error	An error occurred in combining inputs.	Contact technical support.
50 0	SVCSTG.AO S.5004103	get error when check whether old template support upgrade	An error occurred in checking whether the old template can be updated.	Contact technical support.
50 0	SVCSTG.AO S.5004105	get error when element classification	An error occurred in classifying template elements.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5004200	unmarshal job information failed	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004202	invalid inputs preview stack, please check your inputs	An error occurred in combining inputs.	Contact technical support.
500	SVCSTG.AO S.5004602	Update tenant consume state failed.	Failed to update application status.	Contact technical support.
500	SVCSTG.AO S.5004604	Generate billing data failed.	Failed to generate CDR data.	Contact technical support.
500	SVCSTG.AO S.5004605	Get billing data failed	Failed to obtain CDR data.	Contact technical support.
500	SVCSTG.AO S.5004606	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004700	Query stack quota failed.	Failed to query the stack quota.	Contact technical support.
500	SVCSTG.AO S.5004701	Update stack quota failed	Failed to update the stack quota.	Contact technical support.
500	SVCSTG.AO S.5004703	Unmarshal quota request body error.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004800	Get statistics failed.	Failed to obtain statistical data.	Contact technical support.
500	SVCSTG.AO S.5004801	Marshal statistics response body failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004901	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5004902	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004903	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004904	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004905	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004906	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004907	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004908	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005001	Create temporary directory failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005002	Read sample template file content failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005004	Save sample template content zip package to local file failed..	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5005005	Unzip sample template package failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005006	Read template yaml file failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005008	Could not get template id, maybe create template failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005010	Database returning error while checking sample template is exist or not.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005012	Write sample template to db failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005013	Get sample template from db failed.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005101	Generate order id failed.	Failed to generate an order ID.	Contact technical support.
500	SVCSTG.AO S.5005102	Generate order failed.	Failed to generate an order.	Contact technical support.
500	SVCSTG.AO S.5005103	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005104	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005106	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
50 0	SVCSTG.AO S.5005107	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5005108	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5005109	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5005111	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5005112	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5005114	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
50 0	SVCSTG.AO S.5005115	unmarshal stack template inputs error	An error occurred in parsing the template inputs.	Contact technical support.
50 0	SVCSTG.AO S.5005116	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
50 0	SVCSTG.AO S.5005117	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5005118	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
500	SVCSTG.AO S.5005119	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
500	SVCSTG.AO S.5005120	Server internal error, please contact the administrator.	Request error. The template does not contain resources billed in yearly/ monthly mode.	Contact technical support.
500	SVCSTG.AO S.5005121	Bad request, invalid stack phase when periodic upgrade.	Request error. The stack parameter is incorrect. Upgrade and scaling are not allowed.	Contact technical support.
500	SVCSTG.AO S.5005122	failed to get changed input, please contact the administrator.	An error occurred in parsing the template inputs.	Contact technical support.
500	SVCSTG.AO S.5005123	failed to flush charge info to deployment json, please contact the administrator.	An error occurred in parsing the template inputs.	Contact technical support.
500	SVCSTG.AO S.5005201	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005202	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005206	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

St at us Co de	Error Code	Message	Description	Solution
500	SVCSTG.AO S.5005207	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005208	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005209	Server internal error, please contact administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005212	Server internal error, please contact administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5005213	Server internal error, please contact administrator.	Internal server error.	Contact technical support.
509	SVCSTG.AO S.5090019	Bad request, failed to flush charge into db stack	Cloud service operation conflicts.	Contact technical support.
400	SVSSTG.AO S.4002033	Bad request, invalid template specified, attempting to use template belong to other domain	Request error. The specified template resource is not in your domain.	Templates of another tenant cannot be specified to create a stack. Modify the template and try again.
400	SVSSTG.AO S.4002036	Bad request, please check template and subject template.	Internal server error.	Contact technical support.
500	SVSSTG.AO S.5002035	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

Status Code	Error Code	Message	Description	Solution
500	SVSSTG.AO.S.5005105	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.

4.4 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"
  }
}
```

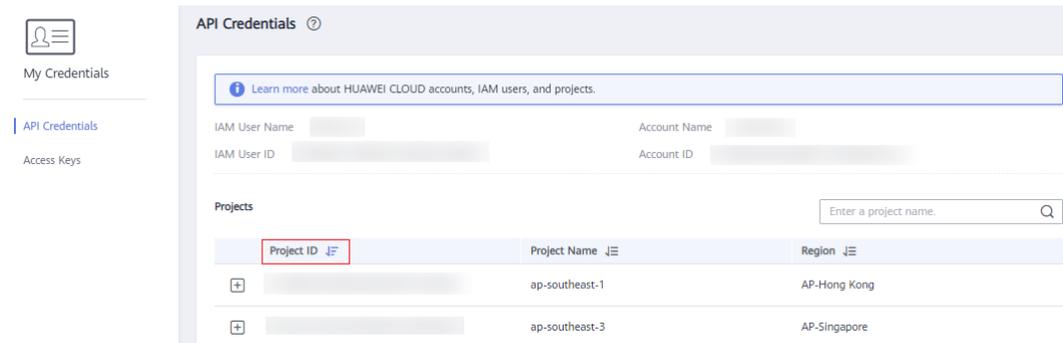
Obtain a Project ID from the Console

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 4-1 Viewing the project ID



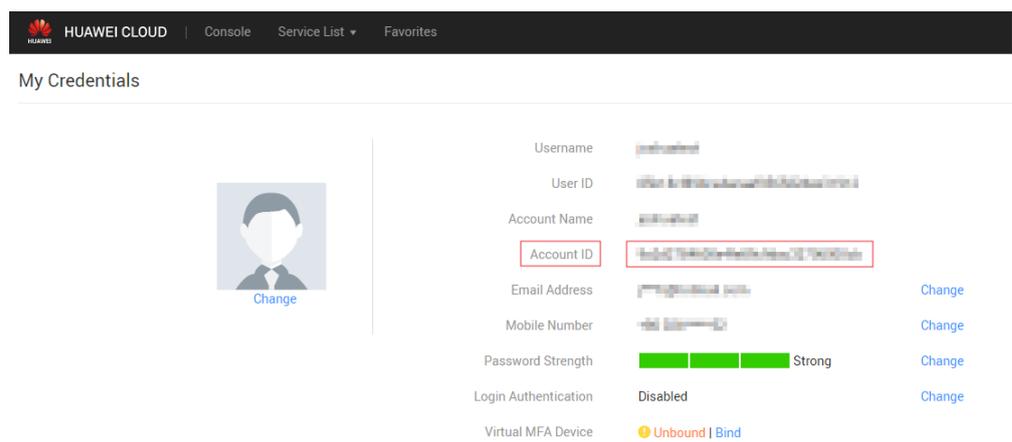
4.5 Obtaining an Account ID

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 4-2 Obtaining your account ID



5 Change History

Date	Change History
2022-10-28	Added: <ul style="list-style-type: none">• Resource Formation APIs• ErrorCode Updated: <ul style="list-style-type: none">• 7.3 Application Orchestration Error Codes
2020-10-12	Updated <ul style="list-style-type: none">• Listing Templates• Obtaining a Template List• Listing Stacks
2020-07-22	Added <ul style="list-style-type: none">• Downloading a Template
2020-07-16	Updated <ul style="list-style-type: none">• Listing Templates• Querying a Template• Querying the Input Parameters of a Template• Querying a Stack• Querying a Stack Element List• Querying a Stack Element• Querying a Stack Execution Record List• Application Orchestration Error Codes
2020-05-30	Updated <ul style="list-style-type: none">• The error code description in Application Orchestration Error Codes
2020-04-30	Updated <ul style="list-style-type: none">• Obtaining a Project ID

Date	Change History
2020-04-17	Updated <ul style="list-style-type: none">• Endpoints
2020-02-26	Updated <ul style="list-style-type: none">• Querying the Input Parameters of a Template• Creating a Stack• Executing a Stack Lifecycle• Listing Stacks
2019-11-22	Updated <ul style="list-style-type: none">• Listing Templates
2019-07-30	Updated <ul style="list-style-type: none">• Listing Templates• Querying a Stack
2019-06-06	Updated <ul style="list-style-type: none">• Making an API Request• Authentication• Querying a Stack
2019-03-13	Updated <ul style="list-style-type: none">• Querying a Stack Element List• Querying a Stack Element• Querying a Stack Output• Querying Stack Input• Querying the Execution Record of a Stack• Querying a Stack Execution Record List
2018-12-27	Added <ul style="list-style-type: none">• Making an API Request• Authentication
2018-05-15	This issue is the first official release.