

Application Orchestration Service

API Reference

Issue 01
Date 2023-02-16



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1 Before You Start

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.

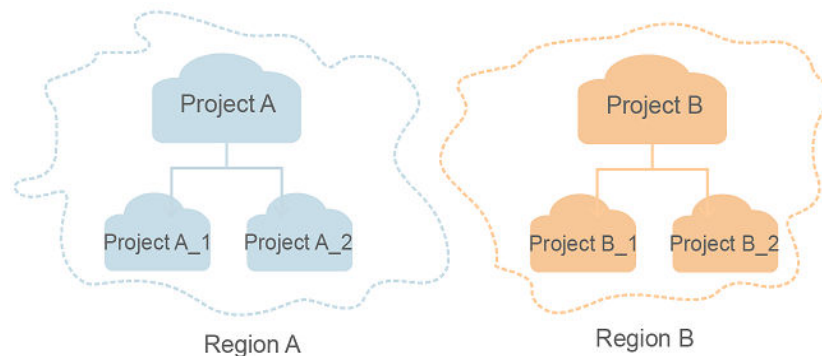
Before calling RFS APIs, ensure that you are familiar with RFS concepts. For details, see [Service Overview](#).

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 projects, 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 APIs

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 the administrator. For example, the endpoint of IAM in the eu-west-101 region is iam.eu-west-101.mycloud.aspiegel.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 .

Parameter	Description
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.

 **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	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.eu-west-101.mycloud.aspiegel.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 the administrator.

 **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....
```

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 2-1](#) 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
→ MIIYXQYJKoZIhvcNAQcCoIIYJCCGEOCAQExDTALBgIghkgBZQMEAgEwgharBgkqhkiG9w0BwwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IjIwMTktMDItMTNUMC
fj3Kjs6YgKnpVNRbW2eZ5eb78SZOkqjACgklqO1wi4JIGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgzJVeFYtLWT1GSO0zxKZmlQHqj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jagjFKNPQuFSOU8+uSsttVwRtNfsC+qT22Rkd5MCqFGQ8LcuUx3a+9CMBnOintWW7oeRUVhVpxk8pxiX1wTEboX-
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** 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
<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 2-5 Query Parameters

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

Parameter	Mandatory	Type	Description
filter	No	String	<p>Filter criteria.</p> <ul style="list-style-type: none"> • The AND operator is defined using a comma (,). • The OR operator is defined using a vertical bar (). The OR operator has a higher priority than the AND operator. • Parentheses are not supported. • Only equal signs (==) are supported as the filter operator. • Filter parameter names and values can contain only letters, digits, and underscores (_). 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/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?filter=event_type==LOG,resource_name==my_hello_world_resource
```
- Use field to select the following returned attributes: resource_key, resource_name, and event_type. The event_type attribute is automatically selected even if you do not select it.

```
GET https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks/my_hello_world_stack/events?field=resource_key,resource_name
```
- Obtain stack events of a specified deployment using deployment_id.

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

Example Responses

Status code: 200

Stack events listed.

```
{
  "stack_events": [ {
    "event_message": "Apply required resource success. ",
    "event_type": "LOG",
    "time": "2023-05-17T11:56:47Z"
  }, {
    "event_message": "Apply complete! Resources: 1 added, 0 changed, 0 destroyed.",
    "event_type": "SUMMARY",
    "time": "2023-05-17T11:56:45Z"
  }, {
    "resource_type": "huaweicloud_vpc",
    "resource_name": "vpc",
    "elapsed_seconds": 8,
    "event_message": "huaweicloud_vpc.vpc: Creation complete after 8s [id=38d617da-9b7f-4550-9ff7-d0e271dd4735]",
    "event_type": "CREATION_COMPLETE",
    "resource_id_key": "id",
    "resource_id_value": "38d617da-9b7f-4550-9ff7-d0e271dd4735",
    "time": "2023-05-17T11:56:40Z"
  }, {
    "resource_type": "huaweicloud_vpc",
    "resource_name": "vpc",
    "event_message": "huaweicloud_vpc.vpc: Creating...",

```



```

    "event_type" : "CREATION_IN_PROGRESS",
    "time" : "2023-05-17T11:56:32Z"
  }, {
    "event_message" : "Creating required resource now",
    "event_type" : "LOG",
    "time" : "2023-05-17T11:56:31Z"
  }
]
}

```

Status Codes

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

Error Codes

See [Error Codes](#).

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.</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
agencies	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>Array Length: 0 - 10</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.
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
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>
cipher_text	String	<p>Ciphertext of data encryption key.</p> <p>Minimum: 2</p> <p>Maximum: 2048</p>

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 V5 agency. agency_name can only receive common agency names. If agency_name is set to a V5 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_authorization_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.

Error Codes

See [Error Codes](#).

2.2.3 Listing Stacks

Function

ListStacks

This API lists all stacks in current region.

- Stacks are sorted by creation time so that the stack created earlier 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. The one created earliest 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.

Error Codes

See [Error Codes](#).

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	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. Array Length: 0 - 10
description	No	String	Description of a stack. It can be used by customers to identify their own stacks. Minimum: 0 Maximum: 1024
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.</i></p>
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"> The name of the file, folder or ZIP package corresponding to template_uri cannot exceed 255 bytes, and the file size cannot exceed 1 MB. <p>Minimum: 0 Maximum: 2048</p>
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 V5 agency. agency_name can only receive common agency names. If agency_name is set to a V5 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	<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 2-43 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/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks
{
  "stack_name": "my_first_stack",
  "description": "my first stack"
}
```

- Create a stack using an agency.

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks
{
  "stack_name": "my_second_stack",
  "description": "my second stack",
  "agencies": [ {
    "provider_name": "huaweicloud",
    "agency_name": "my_agency"
  } ]
}
```

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

```
POST https://{endpoint}/v1/ba2b9930c977f71edaeaa3a5e96a8ff1/stacks
{
  "stack_name": "my_third_stack",
  "template_uri": "https://my_hello_world_bucket.{region}.myhuaweicloud.com/my-hello-world-template.tf",
  "description": "my third stack"
}
```

- Create and deploy a stack using a template.

```
{
  "stack_name": "my_fourth_stack",
  "template_body": "terraform {\n  required_providers {\n    huaweicloud = {\n      source =\n        \"huawei.com/provider/huaweicloud\"\n      version = \"1.41.0\"\n    }\n  }\n}\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.

Error Codes

See [Error Codes](#).

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	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 2-53 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</p> <p>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</p> <p>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.

Error Codes

See [Error Codes](#).

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
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

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_authentication_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.

Error Codes

See [Error Codes](#).

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	<p>Name of a stack output, defined in a template.</p> <p>For example, in the following HCL template, the value of name is vpc_id.</p> <pre>output "vpc_id" { value = huaweicloud_vpc.my_hello_world_vpc.id }</pre> <p>In a JSON template, the value of name is vpc_id.</p> <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	<p>Whether a stack output is sensitive. This is defined in a template.</p> <p>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.</p>

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.

Error Codes

See [Error Codes](#).

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</p> <p>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.

Error Codes

See [Error Codes](#).

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.</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">• The name of the file, folder or ZIP package corresponding to <code>template_uri</code> cannot exceed 255 bytes, and the file size cannot exceed 1 MB. <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.

Error Codes

See [Error Codes](#).

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</p> <p>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</p> <p>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.

Error Codes

See [Error Codes](#).

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 (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 2-120 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

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>
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.</i></p>
agencies	No	Array of Agency objects	<p>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.</p> <p>Array Length: 0 - 10</p>

Table 2-122 Agency

Parameter	Mandatory	Type	Description
provider_name	Yes	String	<p>Name of the provider used by a user. If the provider_name value given by the user is duplicate, 400 is returned.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Mandatory	Type	Description
agency_name	No	String	IAM agency used by the corresponding provider. RFS uses this agency to access and create resources of the provider. Either agency_name or agency_urn must be specified. 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 V5 agency. agency_name can only receive common agency names. If agency_name is set to a V5 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_auth_ORIZATION_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.

Error Codes

See [Error Codes](#).

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.

Error Codes

See [Error Codes](#).

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.

Error Codes

See [Error Codes](#).

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. The one created earliest 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	<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 2-151 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 2-152 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 2-153 Response body parameters

Parameter	Type	Description
execution_plans	Array of ExecutionPlan objects	Execution plan list, sorted by creation time. The one created earliest is displayed on the top.

Table 2-154 ExecutionPlan

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>
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
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
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.

Parameter	Type	Description
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-fd07059ceec83",
    "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.

Error Codes

See [Error Codes](#).

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:

- If the specified stack does not exist, 404 is returned.
- 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</p> <p>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"> The name of the file, folder or ZIP package corresponding to <code>template_uri</code> cannot exceed 255 bytes, and the file size cannot exceed 1 MB. <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	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

Status code: 400

Table 2-168 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: 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  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: 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.

Error Codes

See [Error Codes](#).

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	当前资源的变更是否是导入的。
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.
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	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 2-181** 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.

Parameter	Type	Description
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.

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

Error Codes

See [Error Codes](#).

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	<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	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/ba2b9930c977f71edaeea3a5e96a8ff1/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/ba2b9930c977f71edaeea3a5e96a8ff1/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.

Error Codes

See [Error Codes](#).

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

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 2-198 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>

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.

Error Codes

See [Error Codes](#).

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 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	导入资源数

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.

Error Codes

See [Error Codes](#).

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 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
 - 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.

Error Codes

See [Error Codes](#).

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. 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"> The name of the file, folder or ZIP package corresponding to <code>template_uri</code> cannot exceed 255 bytes, and the file size cannot exceed 1 MB. <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.

Error Codes

See [Error Codes](#).

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.

Error Codes

See [Error Codes](#).

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.

Status Code	Description
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.

Error Codes

See [Error Codes](#).

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.

Error Codes

See [Error Codes](#).

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

Table 2-270 Query Parameters

Parameter	Mandatory	Type	Description
<code>template_id</code>	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.

Error Codes

See [Error Codes](#).

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

Parameter	Type	Description
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.
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.

Error Codes

See [Error Codes](#).

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
<code>project_id</code>	Yes	String	Project ID. It can be obtained by calling an API or from the console. Obtaining a Project ID Minimum: 3 Maximum: 64
<code>template_name</code>	Yes	String	Name of the template to be created. Minimum: 1 Maximum: 128
<code>version_id</code>	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.
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.

Error Codes

See [Error Codes](#).

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	空响应体
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.

Error Codes

See [Error Codes](#).

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.

Error Codes

See [Error Codes](#).

3 Application Orchestration APIs

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.

API	Description
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.

API	Description
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 Template Management

3.2.1 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 3-3 Request parameters

Parameter	Mandatory	Data 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 3-4 UploadResource parameters

Parameter	Mandatory	Data 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	Data 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 3-5 Request headers

Parameter	Mandatory	Data 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.

Response message.

- Response when the request is successful
 - Response parameters

Table 3-6 Response parameter when the request is successful

Parameter	Data Type	Description
id	String	Template ID

- Example response

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

- Response when the request fails
 - Response parameters

Table 3-7 Response parameters when the request fails

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

- Normal

Table 3-8 Status code

Status Code	Description
201	The template is created successfully.

- Abnormal

Table 3-9 Status codes

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.

3.2.2 Listing Templates

Function

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

URI

GET /v2/templates

Table 3-10 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 3-7](#).

Table 3-11 Response Parameters

Parameter	Data Type	Description
[Array element]	Array of objects	Array elements are template details. For details, see Table 3-12 .

Table 3-12 Template details

Parameter	Data Type	Description
id	String	Template ID.
name	String	Template name.

Parameter	Data Type	Description
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.
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.

Parameter	Data Type	Description
include_stack	Boolean	Whether the template contains stack elements (AOS.Stack).

Table 3-13 Response headers

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

- 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 Codes

- Normal

Table 3-14 Status code

Status Code	Description
200	The template list query succeeds.

- Abnormal

Table 3-15 Status code

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

3.2.3 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 3-16 Parameter description

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

Request

- Request parameters

Table 3-17 Request parameters

Parameter	Mandatory	Data Type	Description
resource	Yes	String	Template content. For details, see Table 3-4 .
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>

Response message.

- Response parameters

Table 3-18 Response parameter when the request is successful

Parameter	Data 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 3-7](#).

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

Status Codes

- Normal

Table 3-19 Status code

Status Code	Description
200	The template is updated successfully.

- Abnormal

Table 3-20 Status codes

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.

3.2.4 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 3-21 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 3-7](#).

Status Code

- Normal

Table 3-22 Status code

Status Code	Description
204	The template is deleted successfully.

- Abnormal

Table 3-23 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.

3.2.5 Downloading a Template

Function

This API is used to download a template.

URI

GET /v2/templates/{template_id}/archive

Table 3-24 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response message.

- Response Parameters

Table 3-25 Response header

Parameter	Data 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: eu-west-101
    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
  vpcId:
    get_reference: myvpc
  rootVolume:
    volumeType:
      get_input: mycloudserver_rootVolume_volumeType
  requirements:
    - nics.subnetId:
        node: mysubnet
    - vpcId:
        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: ""
    vpcId:
      get_reference: myvpc
  requirements:
    - vpcId:
        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 Codes

- Normal

Table 3-26 Status code

Status Code	Description
200	The template is successfully downloaded.

- Abnormal

Table 3-27 Status codes

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.

3.2.6 Querying a Template

Function

This API is used to query a template.

URI

GET /v2/templates/{template_id}

Table 3-28 Parameter description

Parameter	Mandatory	Description
template_id	Yes	Template ID

Request

N/A

Response message.

- Response parameters
Response messages when the request fails are listed in [Table 3-7](#).

Table 3-29 Response parameters

Parameter	Data 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.
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.

Parameter	Data 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.
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 Codes

- Normal

Table 3-30 Status code

Status Code	Description
200	The template query succeeds.

- Abnormal

Table 3-31 Status codes

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

3.2.7 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 3-32 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 3-7](#).

Table 3-33 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 3-34 .

Table 3-34 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.

Parameter	Type	Description
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 3-35 .
label	String	Label group to which the parameter belongs.
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 3-35 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.

Parameter	Type	Description
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 3-36 Status code

Status Code	Description
200	Querying the input parameter is successful.

- Abnormal

Table 3-37 Status code

Status Code	Description
400	The request parameter is incorrect.

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

3.2.8 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 3-38 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

- Response parameters
For details about response parameters when the request fails, see [Table 3-7](#).

Table 3-39 Response parameters

Parameter	Type	Description
templates	Array of objects	Array elements contain detailed information about all versions of each template. For details, see Table 3-40 .
total	Integer	Total number of templates

Table 3-40 Data structure of the templates field

Parameter	Type	Description
template	Array of objects	Array elements are template details. For details, see Table 3-41 .

Table 3-41 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

Parameter	Type	Description
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 3-42 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 3-43 Status code

Status Code	Description
200	The template list query succeeds.

- Abnormal

Table 3-44 Status code

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

3.3 Stack Management

3.3.1 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 3-45 Request Parameters

Parameter	Mandatory	Data Type	Description
name	Yes	String	Stack name Restrictions are the same as the name field in Table 3-4 .
project_id	Yes	String	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. The value supports a maximum of 63 characters and cannot start or end with a hyphen (-). Only lowercase letters, digits, and hyphens are allowed.
description	No	String	Stack description Restrictions are the same as the description field in Table 3-4 .
template_id	Yes	String	ID of the template used by the stack. The value supports a maximum of 64 characters.

Parameter	Mandatory	Data Type	Description
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	Force tailoring ID of the stack. This parameter is applicable to tailoring scenarios.
labels	No	Object	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> .
namespace	No	String	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.
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 3-46 .

Table 3-46 Lifecycle configurations

Parameter	Mandatory	Data 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 3-7](#).

Table 3-47 Response Parameters

Parameter	Data 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
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": "{\n  \"ecsng-container-port\":80,\n  \"ecsng-image\":\n  \"192.168.3.88:20202/default/verydows-ecsng:2.1.1\",\n  \"imagePullPolicy\":\n  \"IfNotPresent\",\n  \"mysql-container-port\":3306,\n  \"mysql-database\":\n  \"verydows\",\n  \"mysql-image\":\n  \"192.168.3.88:20202/tangtao/verydows-mysql:5.6.35\",\n  \"mysql-name\":\n  \"verydows-mysql-t1\",\n  \"mysql-password\":\n  \"*****\",\n  \"mysql-port\":13306,\n  \"mysql-root-password\":\n  \"*****\",\n  \"mysql-user\":\n  \"verydows\",\n  \"redis-container-port\":6379,\n  \"redis-image\":\n  \"192.168.3.88:20202/default/verydows-redis:4.0.2_passwd\",\n  \"redis-password\":\n  \"*****\",\n  \"redis-port\":16379,\n  \"verydows-container-port\":80,\n  \"verydows-http-host\":\n  \"\",\n  \"verydows-image\":\n  \"192.168.3.88:20202/default/verydows:2.3.1\",\n  \"verydows-install-image\":\n  \"192.168.3.88:20202/default/verydows:2.3.1\",\n  \"verydows-port\":8088\n}",
"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 Codes

- Normal

Table 3-48 Status code

Status Code	Description
201	The stack is successfully created.

- Abnormal

Table 3-49 Status codes

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.

3.3.2 Deleting a Stack

Function

This API is used to delete a stack.

URI

DELETE /v2/stacks/{stack_id}

Table 3-50 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 3-7](#).

- Example response

```
{}
```

Status Code

- Normal

Table 3-51 Status code

Status Code	Description
200	The stack deletion starts.

- Abnormal

Table 3-52 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.

3.3.3 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 3-53 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 3-54 Request parameters

Parameter	Mandatory	Type	Description
failure_strategy	No	String	Failure strategy. The default value is DoNothing . The value can be DoNothing or Rollback .

Parameter	Mandatory	Type	Description
nodes	No	Array of objects	For details about parameters of a stack element lifecycle, see Table 3-55 .
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 3-55 Node parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Node name
parameters	No	Object	Node lifecycle parameters, in which ScaleParams parameters (Table 3-56) are used for the scaling operations.

Table 3-56 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 3-57 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 3-58 Status code

Status Code	Description
200	Executing the stack lifecycle is successful.

- Abnormal

Table 3-59 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.

3.3.4 Listing Stacks

Function

This API is used to query a stack list.

URI

GET /v2/stacks?project_id={project_id}

Table 3-60 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 3-45 .

Parameter	Mandatory	Description
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.
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. ● Unknow: 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 3-61](#). For the failure response structure, see [Table 3-7](#).

Table 3-61 Response Parameters

Parameter	Data Type	Description
[Array element]	Array of objects	Each element indicates the stack details. For details, see Table 3-65 .

- 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_key0\":\"netype\", \"custom_tag_val0\":\"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\:\api/extensions/v1beta1/namespaces/csc-system/
deployments/b-lss-f98q0\,\name\:\b-lss-f98q0\,\id\:\7253bff2-66cc-11e7-9a88-286ed489ceaa
\}",
                    "Ingress": "{\selfLink\:\api/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\:\,\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 Codes

- Normal

Table 3-62 Status code

Status Code	Description
200	Querying the stack list is successful.

- Abnormal

Table 3-63 Status code

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

3.3.5 Querying a Stack

Function

This API is used to query a stack.

URI

GET /v2/stacks/{stack_id}

Table 3-64 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 3-65](#), and the returned failure response structure is shown in [Table 3-7](#).

Table 3-65 Response Parameters

Parameter	Data 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 3-66 .
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.

Parameter	Data Type	Description
object	Object	Stack running data. This parameter is not returned when the stack is being created. For details, see Table 3-67 .
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 3-66 Data structure of the health field

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

Table 3-67 Data structure of the object field

Parameter	Data Type	Description
metadata	Object	Metadata of a stack. For details, see Table 3-68 .
spec	Object	Stack specifications. For details, see Table 3-69 .
status	Object	Stack execution status. For details, see Table 3-72 .

Table 3-68 Data structure of the object.metadata field

Parameter	Data 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 3-69 Data structure of the object.spec field

Parameter	Data 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 3-70 .
template	Object	AOS template attributes. For details, see Table 3-71 .

Table 3-70 Data structure of the object.spec.selector field

Parameter	Data Type	Description
matchLabels	Map<String,String>	Label information

Table 3-71 Data structure of the object.spec.template field

Parameter	Data Type	Description
reference	Object	Reference information
type	String	The value is Aos , indicating an AOS template.

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

Parameter	Data Type	Description
elementStatuses	Map<String,Object>	Execution status and attributes of each stack element. For details, see Table 3-74 .
healthyStatus	object	Cache of the last stack health check status. For details, see Table 3-75 .
lastExecutionStatus	object	Latest execution status. For details, see Table 3-79 .
phase	String	Stack execution status. The status can be succeeded, executing, suspended, canceled, canceling, forcibly canceling, suspending, retrying, or running. For details, see Table 3-73 .

Table 3-73 phase parameter description

phase Parameter Value	Description
Running	Running.
Pending	Initializing.
Terminating	Deleting.
CreateFailed	Creation failed.
DeleteSucceeded	Deletion succeeded.

phase Parameter Value	Description
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.
RollbackPaused	Stack recovery paused.
UpdatePaused	Updating paused.
ReconfigPaused	Editing paused.
CreateCancelling	Canceling creation.
DeleteCancelling	Canceling deletion.
UpgradeCancelling	Canceling upgrade.

phase Parameter Value	Description
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.

Table 3-74 Data structure of the object.status.elementStatuses field

Parameter	Data Type	Description
runtimeProperties	Object	Information in runtimeProperties

Table 3-75 Data structure of the object.status.healthyStatus field

Parameter	Data Type	Description
elements	Map<String, Object>	Health check results of each element. For details, see Table 3-76 .
elementsReference	Object	Element reference information. For details, see Table 3-78 .
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 3-76 Data structure of the object.status.healthyStatus.elements field

Parameter	Data Type	Description
message	String	Health check results of elements.

Parameter	Data Type	Description
runtimes	Object	Each key-value indicates a feature of the health check result. For details, see Table 3-77 .
status	String	Status of an element after the health check.

Table 3-77 Data structure of the object.status.healthyStatus.elements.runtimes field

Parameter	Data Type	Description
fatigue	Integer	Element status
instanceCount	Integer	Number of instances
timestamp	String	Timestamp

Table 3-78 Data structure of the object.status.healthyStatus.elementsReference field

Parameter	Data Type	Description
APIVersion	String	API version of an element
FieldPath	String	Field path of an element
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 3-79 Data structure of the object.status.lastExecutionStatus field

Parameter	Data Type	Description
actionName	String	Operation name.
objectStatus	Object	Overall execution progress of the operation. For details, see Table 3-80 .
progress	Integer	Execution progress.

Parameter	Data Type	Description
subObjectStatuses	Map<String, Object>	Each key-value pair indicates the execution progress of the node corresponding to the key. For details, see Table 3-81 .

Table 3-80 Data structure of the object.status.lastExecutionStatus.objectStatus field

Parameter	Data 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 3-81 Data structure of the object.status.lastExecutionStatus.subObjectStatuses field

Parameter	Data Type	Description
createAt	String	UTC timestamp of the information creation in the RFC3339 format.
message	String	Detailed error information.
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": "d383836f2d134980beb6a8cc5fced7ed",
  "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\":\"d383836f2d134980beb6a8cc5fced7ed\\\",\\\"HuaweiCloud.Region\":\"eu-
west-101\\\",\\\"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": "d383836f2d134980beb6a8cc5fced7ed",
    "selfLink": "/apis/paas/v1alpha1/namespaces/d383836f2d134980beb6a8cc5fced7ed/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": "d383836f2d134980beb6a8cc5fced7ed",
        "name": "aoss4iit-b9152f94-713114f1-1430-89fe-5112-992a1830d457",
        "uid": "aoss4iit-b9152f94-713114f1-1430-89fe-5112-992a1830d457"
      }
    }
  },
  "status": {
    "phase": "CreateSucceeded",
    "elementStatuses": {
      "vpcvp4ud": {
        "runtimeProperties": {
          "refID": "42531670-5561-4722-bdca-1007aa25710f",
          "refName": "vpcvp4ud-72b2dee4"
        }
      }
    },
    "lastExecutionStatus": {
      "actionName": "create",
      "progress": 100,
      "objectStatus": {
        "phase": "Succeeded",
        "updateAt": "2020-07-13T07:10:11.789231Z"
      },
      "subObjectStatuses": {
        "vpcvp4ud": {
          "subActionName": "create",
          "phase": "Succeeded",
          "updateAt": "2020-07-13T07:10:10.820633Z",
          "createAt": "2020-07-13T07:10:06.787787Z"
        }
      }
    },
    "healthyStatus": {

```

```

    "healthyCheckTimestamp": "2020-07-14T09:40:42+08:00",
    "status": "Running",
    "elements": {
      "vpcvp4ud": {
        "status": "healthy",
        "runtimes": {
          "fatigue": "1",
          "instanceCount": "1",
          "timestamp": "2020-07-14T09:40:42+08:00"
        }
      }
    },
    "elementsReference": {
      "Kind": "",
      "Namespace": "d383836f2d134980beb6a8cc5fced7ed",
      "Name": "aoss4iit-b9152f94-health-e545b9a7-565d-0284-c498-7e2d801ae968",
      "UID": "01427996-c4d8-11ea-972c-0255ac1003cf",
      "APIVersion": "",
      "ResourceVersion": "",
      "FieldPath": ""
    }
  }
},
"health": {
  "message": "",
  "healthy": true
}
}

```

Status Codes

- Normal

Table 3-82 Status code

Status Code	Description
200	Querying the stack is successful.

- Abnormal

Table 3-83 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.

3.3.6 Querying a Stack Element List

Function

This API is used to query a stack element list.

URI

GET /v2/stacks/{stack_id}/elements

Table 3-84 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 3-7](#) shows the structure of a failure response.

Table 3-85 Response Parameters

Parameter	Data 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 3-86 .

Table 3-86 Stack element details

Parameter	Data Type	Description
id	String	Element name
description	String	Element description
properties	Object	Element attribute, which corresponds to the template content

Parameter	Data Type	Description
runtime_properties	Object	Element runtime attribute
relationships	Object	Relationships between elements. For details, see Table 3-87 .
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 3-88 .

Table 3-87 Stack Nodes Relationship structure

Parameter	Data 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 3-88 Data structure of the action_status field

Parameter	Data 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 3-73 .
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": "dfsfdf",
      "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": "dfsfdf",
      "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 Codes

- Normal

Table 3-89 Status code

Status Code	Description
200	Querying the stack element list is successful.

- Abnormal

Table 3-90 Status codes

Status Code	Description
404	The requested stack does not exist.
500	The server fails to process the request due to an unexpected condition.

3.3.7 Querying a Stack Element

Function

This API is used to query a stack element.

URI

GET /v2/stacks/{stack_id}/elements/{node_id}

Table 3-91 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 3-7](#).

Table 3-92 Response Parameters

Parameter	Data Type	Description
instances	Array of objects	Structure of instances . For details, see Table 3-93 . 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 3-87 .

Parameter	Data Type	Description
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 3-88 .

Table 3-93 Data structure of the instances field

Parameter	Data 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 Codes

- Normal

Table 3-94 Status code

Status Code	Description
200	Querying the stack element is successful.

- Abnormal

Table 3-95 Status codes

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.

3.3.8 Querying a Stack Output

Function

This API is used to query a stack output.

URI

GET /v2/stacks/{stack_id}/outputs

Table 3-96 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 3-97 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 3-98 .

Table 3-98 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 3-99 Status Code

Status Code	Description
200	Querying the stack output is successful.

- Abnormal

Table 3-100 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.

3.3.9 Querying Stack Input

Function

This API is used to query stack input.

URI

GET /v2/stacks/{stack_id}/inputs

Table 3-101 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 3-102 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 3-103 Status code

Status Code	Description
200	Querying the stack input information is successful.

- Abnormal

Table 3-104 Status code

Status Code	Description
404	The stack does not exist.
500	The server fails to process the request due to an unexpected condition.

3.3.10 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 3-105 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 3-106](#).

Table 3-106 Response parameters

Parameter	Type	Description
metadata	Object	Execution metadata. For details, see Table 3-107 .
spec	Object	Execution attributes. For details, see Table 3-108 .
status	Object	Execution status. For details, see Table 3-111 .

Table 3-107 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.
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 3-108 Structure of Execution Spec

Parameter	Type	Description
actionName	String	Lifecycle name of the execution.
changedObject Data	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 3-109 .
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 3-110 .
onFailureStrategy	String	Timeout retry logic of the execution.
source	String	Action source. The options are System and User .
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 3-109 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.

Parameter	Type	Description
Other fields provided by K8S	-	-

Table 3-110 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 3-111 Stack Status ExecutionStatus structure

Parameter	Type	Description
actionName	String	Operation name. The value can be create , delete , upgrade , rollback , reconfig , or retry .
progress	Integer	Execution progress.
objectStatus	Object	Overall execution progress of the operation. For details, see Table 3-112 .
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 3-113 .

Table 3-112 Stack Status ExecutionStatus ActionStatus structure

Parameter	Type	Description
phase	String	Execution status of an operation step.
message	String	Detailed error information.

Parameter	Type	Description
reason	String	Brief error description in the CamelCase format.
updateAt	String	UTC timestamp of the information update in the RFC3339 format.

Table 3-113 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.
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"
    },
  },
}
```


3.3.11 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 3-116 Path parameter description

Parameter	Mandatory	Description
stack_id	Yes	Stack ID, which supports a maximum of 64 characters

Table 3-117 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 3-106](#), and the failure response structure is shown in [Table 3-7](#).

- 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 3-118 Status code

Status Code	Description
200	Querying the stack input information is successful.

- Abnormal

Table 3-119 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

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.
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.

Status Code	Code	Description
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.
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.

Status Code	Code	Description
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.
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.

Status Code	Code	Description
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 RFS Error Codes

4.2.1 Error Codes

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [API Gateway Error Codes](#).

Status Code	Error Code	Message	Description	Solution
400	RF.10011001	Missing required parameter(s).	Some required parameters are missing.	Contact technical support.
400	RF.10011002	Unrecognized parameter(s).	Unrecognized parameters are provided.	Contact technical support.
400	RF.10011003	Both <code>template_uri</code> and <code>template_body</code> are given, you should only give exactly one parameter from <code>template_uri</code> and <code>template_body</code> .	Either template_body or template_uri must be specified but they both cannot be specified together.	Contact technical support.
400	RF.10011005	The length of parameter is longer than upper limit.	The length of the parameter exceeds the upper limit.	Contact technical support.
400	RF.10011006	The length of parameter is shorter than lower limit.	The length of the parameter is shorter than the minimum length.	Contact technical support.
400	RF.10011008	Parameter contains invalid letter. Should only contains English characters, number or hyphen.	The parameter contains invalid characters. Only letters, digits, and hyphens (-) are allowed.	Contact technical support.

Status Code	Error Code	Message	Description	Solution
400	RF.10011009	Parameter contains invalid letter. Should only contains lower case English characters, number or hyphen.	The parameter contains invalid characters. Only lowercase letters, digits, and hyphens (-) are allowed.	Contact technical support.
400	RF.10011028	Composite Validation Error.	Compound verification error.	Contact technical support.
400	RF.10011029	Parameter contains invalid letter. Should only contains English characters or number.	The parameter contains invalid characters. Only letters and digits are allowed.	Contact technical support.
400	RF.10011031	Parameter contains invalid letter. Should only contains English characters, number, hyphen or underscore.	The parameter contains invalid characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.	Contact technical support.
400	RF.10011032	Can not find request body.	The request body is not transferred.	Contact technical support.
400	RF.10011036	The value of parameter is not a valid instance of integer.	The parameter value is not of the valid integer type.	Contact technical support.

Status Code	Error Code	Message	Description	Solution
400	RF.10011039	VarKey contains invalid letter. VarKey should Starts with an English letter and only contains English characters, number, hyphen or underscore.	var_key contains invalid characters. It must start with a letter and contains only letters, digits, hyphens (-), and underscores (_).	Contact technical support.
400	RF.10011049	Invalid vars uri.	Invalid parameter link.	Contact technical support.
400	RF.10011050	Invalid vars uri content.	File content from an invalid parameter link.	Contact technical support.
400	RF.10011051	Invalid vars body.	Invalid vars body.	Contact technical support.
400	RF.10011052	Var value is empty.	Empty variable value.	Contact technical support.
400	RF.10011055	Invalid json array.	Invalid JSON array.	Contact technical support.
400	RF.10011056	Both template_uri and template_body are absence, you should give exactly one parameter from template_uri and template_body .	Both template_uri and template_body are missing. Either of them must be specified but they both cannot be specified together.	Contact technical support.

Status Code	Error Code	Message	Description	Solution
400	RF.10011057	Project ID should only contains lower case hexadecimal characters.	The project ID must contain only lowercase hexadecimal letters.	Contact technical support.
400	RF.10011065	Found duplicate values in attribute provider_name.	Duplicate values are found in the provider_name attribute.	Contact technical support.
400	RF.10011073	Invalid template body.	Invalid template body.	Contact technical support.
400	RF.10011074	Invalid template.	Invalid template.	Contact technical support.
400	RF.10011075	File type is not matched with file content.	The file type does not match the file content.	Contact technical support.
400	RF.10011084	No parameters in the request need to be modified.	No parameters in the request need modification.	Contact technical support.
403	RF.10012538	The total count of stacks has exceeded the maximum limit.	The number of stacks exceeds the upper limit.	Contact technical support.
403	RF.10012540	Too many stacks are being created in parallel, please take a rest and try again later.	Too many stacks are created concurrently. Try again later.	Contact technical support.

Status Code	Error Code	Message	Description	Solution
403	RF.10012541	Too many execution plans are being created in parallel, please take a rest and try again later.	Too many execution plans are created concurrently. Try again later.	Contact technical support.
403	RF.10012544	Stack cannot be deleted due to invalid stack status.	The stack cannot be deleted due to its invalid status.	Contact technical support.
404	RF.10013001	Stack is not exist.	The stack does not exist.	Contact technical support.
404	RF.10013002	Execution plan is not exist.	The execution plan does not exist.	Contact technical support.
409	RF.10013501	Conflict execution plan name. Execution plan with name already exist.	An execution plan with the same name already exists.	Contact technical support.
409	RF.10013502	Conflict stack name. Stack with name already exist.	A stack with the same name already exists.	Contact technical support.
429	RF.10014001	Too many requests. Please try again in a few minutes.	Too many requests. Try again later.	Contact technical support.
500	RF.10010001	Internal Server Error.	Internal server error.	Contact technical support.

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.

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

Table 4-2 Error code

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AOS.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.
400	SVCSTG.AOS.4000010	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
400	SVCSTG.AOS.4000011	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
400	SVCSTG.AOS.4000016	Bad request, request parameter error, please check.	Request error. The request parameter is incorrect. Please check.	Correct the request parameter and try again.
400	SVCSTG.AOS.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.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4000101	Bad request, credentials is empty.	Request error. No authentication information is provided.	Enter the template authentication information and try again.
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.

St at us Co de	Error Code	Message	Description	Solution
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
400	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
400	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.
400	SVCSTG.AO S.4000319	Bad request, type of getting resource invalid.	Request error. The obtained resource type is invalid.	Contact technical support.
400	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.
400	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.
400	SVCSTG.AO S.4000503	Bad request, find multiple public chart package.	Request error. Multiple public chart packages are found.	Contact technical support.
400	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.
400	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.

St at us Co de	Error Code	Message	Description	Solution
400	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.
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.

St at us Co de	Error Code	Message	Description	Solution
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.
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.

St at us Co de	Error Code	Message	Description	Solution
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.
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, tosca 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.

St at us Co de	Error Code	Message	Description	Solution
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.
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.

St at us Co de	Error Code	Message	Description	Solution
400	SVCSTG.AO S.4001900	Converge template failed, please check.	Template convergence parsing failed. The template is invalid.	Contact technical support.
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.

St at us Co de	Error Code	Message	Description	Solution
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.
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.

St at us Co de	Error Code	Message	Description	Solution
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.
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
400	SVCSTG.AO S.4005003	Sample template zip package is empty.	Internal server error.	Contact technical support.
400	SVCSTG.AO S.4005007	Sample template compress package only support zip format.	Internal server error.	Contact technical support.
400	SVCSTG.AO S.4005009	Parse description file failed, maybe description file not exist or json format error.	Internal server error.	Contact technical support.
400	SVCSTG.AO S.4005011	Sample template is already exist, please check the name and version.	Internal server error.	Contact technical support.
400	SVCSTG.AO S.4005015	No Certain sample template in db.	Internal server error.	Contact technical support.
400	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.
400	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.
400	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.
400	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
500	SVCSTG.AO S.5000003	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
500	SVCSTG.AO S.5000004	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
500	SVCSTG.AO S.5000005	Authentication failed, please contact administrator.	Internal authentication failed.	Contact technical support.
500	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.
500	SVCSTG.AO S.5000105	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000109	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000110	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5000111	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	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
50 0	SVCSTG.AO S.5000113	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000114	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
50 0	SVCSTG.AO S.5000118	Delete archive failed.	Failed to delete the template file.	Contact technical support.
50 0	SVCSTG.AO S.5000119	Delete archive failed.	Failed to delete the template file.	Contact technical support.
50 0	SVCSTG.AO S.5000124	Upload template failed, get namespace failed.	Failed to create the template or failed to obtain the namespace.	Contact technical support.
50 0	SVCSTG.AO S.5000125	Upload template failed, create namespace failed.	Failed to create the template or failed to create the namespace.	Contact technical support.
50 0	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.
50 0	SVCSTG.AO S.5000128	Operation failed, get OBS client failed.	Operation failed. Failed to obtain the OBS client.	Contact technical support.
50 0	SVCSTG.AO S.5000129	Upload template failed, query bucket error.	Failed to create the template or failed to query the bucket.	Contact technical support.
50 0	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
500	SVCSTG.AO S.5002801	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003200	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003201	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003202	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003203	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003300	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003301	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003302	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003303	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	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
500	SVCSTG.AO S.5003912	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003913	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003914	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003916	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5003917	Unknown registry parameter.	The request parameter has not been registered.	Contact technical support.
500	SVCSTG.AO S.5003919	Server internal error, please contact the administrator.	Internal server error.	Contact technical support.
500	SVCSTG.AO S.5004001	Stack health check failed.	The stack fails the health check.	Contact technical support.
500	SVCSTG.AO S.5004101	unmarshal template inputs error	An error occurred in parsing the template inputs.	Contact technical support.
500	SVCSTG.AO S.5004102	get merged input details error	An error occurred in combining inputs.	Contact technical support.
500	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.
500	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.

St at us Co de	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 the administrator. 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.

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.