Resource Formation Service

User Guide

 Issue
 01

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Getting Started

1.1 Accessing Resource Formation Service

1. Log in to the **Huawei Cloud console** and choose **Service List > Management** & Governance > Resource Formation Service.

The following table outlines the Huawei Cloud regions where Resource Formation Service (RFS) is available.

Site	Region Name	Region Code	
Huawei	AP-Singapore	ap-southeast-3	
Cloud Internation	CN-Hong Kong	ap-southeast-1	
al website	AP-Bangkok	ap-southeast-2	
	TR-Istanbul	tr-west-1	
	AP-Jakarta	ap-southeast-4	
	ME-Riyadh	me-east-1	
	CN East-Qingdao	cn-east-5	
	LA-Sao Paulo1	sa-brazil-1	
	LA-Santiago	la-south-2	
	LA-Mexico City2	la-north-2	
	AF-Johannesburg	af-south-1	
	AF-Cairo	af-north-1	
	LA-Mexico City1	na-mexico-1	

1.2 Viewing the Stack Status

You can manage stack lifecycle (such as creation, update, deletion, and query) and the lifecycle of execution plans of a stack (such as creation, deletion, and query).

Table 1 describes stack statuses.

 Table 2 describes execution plan statuses.

Table 1-1 Stack statuses

Status	Description
Creation Complete	The stack has been created but not yet deployed.
Deployment In Progress	Stack deployment is in progress.
Deployment Complete	The stack has been deployed.
Deployment Failed	The stack deployment failed.
Deletion In Progress	Stack deletion is in progress.
Deletion Failed	Stack deletion failed.
Rollback In Progress	Stack rollback is in progress.
Rollback Failed	Stack rollback failed.
Rollback Complete	The stack has been rolled back.

Table 1-2 Execution plan statuses

Status	Description
Creation In Progress	Execution plan creation is in progress.
Creation Failed	Execution plan creation failed.
Available	The execution plan is created and to be applied.
Applied	The execution plan has been applied.

1.3 Creating a Stack

On the **Stacks** page, click **Create Stack** in the upper right corner, as shown in **Figure 1-1**.

Figure 1-1 Creating a stack

Stacks ②						🕼 User Guide	Create Stack
					Search by stack name by d	lefault.	QC
Stack Name	Status 7	Description	Created ↓	Updated ↓≡		Operation	
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment Complete	-	2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 G	WT+08:00	Delete Update	

Procedure:

1. Select a template.

There are two ways to select a template, as shown in **Figure 1-2**: (1) Enter a URL of an OBS template. (2) Upload a local template file. (3) Select a template from **My Templates**.

Figure 1-2 Selecting a template

< Create Stack	
1 Select Template	O Configure Parameters
* Creation Mode	Existing templates
* Template Source	URL Upload Template A stack is created using a hemplate. The template must contain the deployment code file which lie name extension is if or if jour.
* Template URL	Enter the URL of the corresponding template. The URL must contain at least the deployment code like, and the like size cannot exceed 1 MB.
	• RFS only uses the data you upload for resource management. Your temptate will not be encrypted. KMS and DEW are recommended for encryption of sensitive variables. Currently, the RFS console can automatically use KMS to encrypt your sensitive variables.

You can upload template files in either .tf or .tf.json format.

Sample of the **.tf** template for creating a VPC and an ECS:

```
terraform {
  required_providers {
   huaweicloud = {
    source = "huawei.com/provider/huaweicloud"
    version = "1.41.0"
   }
 }
}
 provider "huaweicloud" {
  cloud = "myhuaweicloud.com"
  endpoints = {
   iam = "iam.cn-north-4.myhuaweicloud.com"
  }
  insecure = true
 region = "cn-north-4"
  auth_url = "https://iam.cn-north-4.myhuaweicloud.com:31943/v3"
}
variable "vpc_name" {
  type = string
  description = "vpc name"
  default = "rf_teststack_vpc"
  sensitive = true
  nullable = false
3
variable "subnet_name" {
  type
          = string
  description = "subnet name"
  default = "rf_teststack_subnet"
}
variable "ecs_name" {
type = string
```

```
description = "ecs name"
 default = "rf_teststack_ecs"
}
variable "ecs_admin_passwd" {
 type
         = strina
 description = "ecs passwd"
}
resource "huaweicloud_vpc" "rf_doc_vpc" {
 name = var.vpc_name
 cidr = "192.168.0.0/16"
}
resource "huaweicloud_vpc_subnet" "rf_doc_subnet" {
          = var.subnet_name
 name
 vpc_id
         = huaweicloud_vpc.rf_doc_vpc.id
 cidr = "192.168.1.0/24"
 gateway_ip = "192.168.1.1"
}
resource "huaweicloud_compute_instance" "rf_doc_ecs" {
              = var.ecs_name
 name
 flavor_id
               = "c7.large.2"
 admin_pass
                = var.ecs_admin_passwd
                = "cecc4bcf-b055-4d35-bd5f-693d4412eaef"
 image_id
 network {
  uuid = huaweicloud_vpc_subnet.rf_doc_subnet.id
 }
 system_disk_type = "SAS"
 system_disk_size = 100
 stop_before_destroy = false
 delete_disks_on_termination = true
 charging_mode = "postPaid"
                 = false
 auto_renew
}
output "ecs_address" {
 value = huaweicloud_compute_instance.rf_doc_ecs.access_ip_v4
 description = "The ecs private address."
}
output "ecs_id" {
 value = huaweicloud_compute_instance.rf_doc_ecs.id
 description = "The ecs resource id."
}
```

Sample of the .tf.json template for creating a VPC and an ECS:

```
"terraform": {
 "required_providers": {
   "huaweicloud": {
    "source": "huawei.com/provider/huaweicloud",
    "version": "1.41.0"
  }
 }
},
 'provider": {
 "huaweicloud": {
  "cloud": "myhuaweicloud.com",
   "endpoints": {
    "iam":"iam.cn-north-4.myhuaweicloud.com"
  },
  "insecure": true,
  "region": "cn-north-4",
  "auth_url": "https://iam.cn-north-4.myhuaweicloud.com:31943/v3"
 }
},
"variable": {
```

{

```
"vpc_name": {
     "type": "string",
     "description": "vpc name",
     "default": "rf_teststack_vpc",
"sensitive": true,
     "nullable": false
   },
"subnet_name": {
     "type": "string",
"description": "subnet name",
     "default": "rf_teststack_subnet"
   },
"ecs_name": {
     "type": "string",
     "description": "ecs name",
"default": "rf_teststack_ecs"
  },
"ecs_admin_passwd": {
    "type": "string",
    "string": "ecs pase
     "description": "ecs passwd"
   }
 },
"resource": {
   "huaweicloud_vpc": {
     "rf_doc_vpc": {
"name": "${var.vpc_name}",
       "cidr": "192.168.0.0/16"
    }
   },
    "huaweicloud_vpc_subnet": {
     "rf_doc_subnet": {
      "name": "${var.subnet_name}",
"vpc_id": "${huaweicloud_vpc.rf_doc_vpc.id}",
      "cidr": "192.168.1.0/24",
       "gateway_ip": "192.168.1.1"
    }
   },
"huaweicloud_compute_instance": {
      "name": "${var.ecs_name}",
      "flavor_id": "c7.large.2",
       "admin_pass": "${var.ecs_admin_passwd}",
       "image_id": "cecc4bcf-b055-4d35-bd5f-693d4412eaef",
      "network": {
        "uuid": "${huaweicloud_vpc_subnet.rf_doc_subnet.id}"
      },
       "system_disk_type": "SAS",
      "system_disk_size": 100,
      "stop_before_destroy": false,
      "delete_disks_on_termination": true,
      "charging_mode": "postPaid",
       "auto_renew": false
    }
   }
 },
  "output": {
    "ecs_address": {
     "value": "${huaweicloud_compute_instance.rf_doc_ecs.access_ip_v4}",
     "description": "The ecs private address."
  },
"ecs_id": {
"``alue": '
     "value": "${huaweicloud_compute_instance.rf_doc_ecs.id}",
     "description": "The ecs resource id."
   }
 }
}
```


The sample template contains charged resources. Check whether resources need to be enabled before using the template.

This template consists of five parts:

- a. huaweicloud_vpc in resource indicates VPC information.
- b. **huaweicloud_vpc_subnet** in **resource** indicates information about a subnet defined in the VPC. A subnet is a segment within the IP address range of the VPC.
- c. **huaweicloud_compute_instance** in **resource** indicates information about an ECS defined in the template.
- d. **variable** indicates variables defined by users in templates during stack creation and deployment.
- e. **output** defines the outputs of templates. After a stack is created, its output is generated based on the definition and displayed on the **Outputs** tab page.
- 2. Configure parameters.

Click **Next** to go to the **Configure Parameters** page, where you can modify the stack name and description, as shown in **Figure 1-3**.

The stack name must start with a letter and can contain a maximum of 128 characters, including letters, digits, underscores (_), and hyphens (-). The name must be unique.

A stack description can contain a maximum of 1,024 characters.

Figure 1-3 Configuring parameters

Create Stack								
1 Select Template	D Select Template @ Configure Parameters ③ Configure Black ④ Configure Deach Configure Black ④ Configure Deach Configure Black ④							
* Stack Name	stack_20230210_0949_0n21							
	The stack name must start with	a letter and can contain a maximum of 128 characters, including let	tters, digits, underscores (_), and	hyphens (-). The stack name must be unique. The stack name must be unique.				
Description	Enter a description of the stac	*.						
		0/255						
Configure	a Parameters							
Enter a keywor	rd.	Q Encrypt some resources based on the temp	late requirements.					
Parameter		Value	Туре	Description				
* vpc_name		rf_teststack_vpc	string	vpc name				
subnet_name		rf_teststack_subnet	string	subnet name				
ecs_name		rf_teststack_ecs	string	ecs name				
ecs_admin_p	asswd		string	ecs passwd				

Parameters marked with a red asterisk (*) are mandatory. Set these parameters to valid values.

If you enter an invalid value, the text box will turn red (as shown in Figure 1-4) and clicking **Next** will not redirect you to the next page.

Figure 1-4 Text box with an invalid value

* vpc_name	

Click **Next**. The **Configure Stack** page is displayed.

If the stack name or description is imported using a URL and contains special characters, the characters must be encoded following the HTTP encoding rules first.

Check whether the default VPC, subnet, and ECS names used on this page already exist on the corresponding consoles. If the names already exist, change them to unique ones to prevent creation failures.

3. Configure the stack.

Click Next to go to the Advanced Settings page, as shown in Figure 1-5.

Figure 1-5 Configuring the stack

<	Create Stack									
1	Select Template	2 Configure Parameters	— (3) Configure Stack ———	() Confirm Configurations						
	* Agency	huaweicloud 💌	rf_admin_trust	C atom update, and deletion) on stack resources. If the agency permissions are insufficient, subsequent operations such as deployment and execution plan creation may fail. Create Agency on IAM						
	Auto-Rollback	If auto-rollback is enabled, the stack automatically role back to the previous successful resource status when the operation fails. After the stack is created, you can modify the stack configurations on its details page.								
	Deletion Protection	Deletion protection prevents	s the stack from being deleted accid	stally. You can modify it on the stack details page.						

Mandatory parameter (marked with *)

Agency: An agency can clearly define operation permissions of RFS (such as creation, update, and deletion) on stack resources. If the agency permissions are insufficient, subsequent operations may fail.

Optional parameters:

Deletion Protection: prevents the stack from being deleted accidentally. After a stack is created, you can update this configuration by clicking **Update** in the **Operation** column.

Auto-Rollback: Enabling auto-rollback will revert the stack to the last successful resource status in the event of a failed operation.

Click Next to go to the Confirm Configurations page.

4. Confirm the configurations.

After you confirm the configurations, you can click either **Create Execution Plan** or **Directly Deploy Stack**.

a. If you click **Directly Deploy Stack**, a confirmation dialog box will be displayed.

Figure 1-6 Directly deploy stack

Directly Deploy Stack	×
Direct deployment immediately enables all resources in the stack, and fees are generated based on the resources enabled. Are you sure you want to deploy the stack?	
Yes No	

Click **Yes**. A new stack is generated and its status is **Deployment In Progress**, as shown in **Figure 1-7**.

Figure 1-7 Deployment in progress

Sta	icks ③						🕼 User Guide	Create Stack
						Search by stack name by de	efault.	QC
	Stack Name	Status 🖓	Description	Created 4F	Updated ↓≣		Operation	
	stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment In Progress		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:47:02 GN	1T+08:00	Delete Update	

Then, the status changes to **Deployment Complete**, as shown in **Figure 1-8**.

Figure 1-8 Deployment complete

Stacks ⑦						(User Guide	Create Stack
					Search by stack name by default.		QC
Stack Name	Status 🖓	Description	Created 1F	Updated ↓≣	Operation		
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment Complete		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 G	WT+08:00 Delete Uj	pdate	

b. Clicking **Create Execution Plan** will open a dialog box where you can name and describe the execution plan, as shown in **Figure 1-9**.

 \times

Figure 1-9 Create Execution Plan dialog box

 Before deploying a sta information and check resources. RFS is free of charge, plan is created, a stack estimated price is displayed 	ck, you can create an execution plan to preview the stack its configurations to evaluate the impact on running but the resources in the stack are not. After the execution k for which no resource is enabled is generated, and the layed in the execution plan details.
* Execution Plan Name	executionPlan_20230210_1050_1925
Description	Enter a description of the execution plan.
	0/25 OK Cancel

Click **OK**. The **Execution Plans** tab page is displayed.

Wait until the execution plan is created and refresh the page. The execution plan status changes to **Available**, as shown in **Figure 1-10**.

Figure 1-10 Available

Dataly	< stack_20230210_1046_f2 Basic Information Resources Outputs Event	s Template Execution Plans			Delete Updat	ite Template/Parameter
Execution Plan Name/ID Status Estimated Price () Created Description Operation	Deploy				Enter a keyword.	QC
	Execution Plan Name/ID	Status	Estimated Price ③	Created	Description	Operation
executionPlan_2023/02/10_1059_11255 executionPlan_2023/02/10_1059_1425_0Xe=48.06_mm = 0 PM/02 PM	executionPlan_20230210_1050_1925 c4002eff-242c-46a8-a7dc-401327312d93	Available	View Details	2023/02/10 10:50:42 GMT+08:00	-	Delete Deploy

Return to the stack list page. The stack status is **Creation Complete**, as shown in **Figure 1-11**.

Figure 1-11 Stack list

81	acks 🗇						59 User Guide	Create Stack
						Search by stack name by d	efault.	Q C
	Stack Name	Status 1/	Description	Created 4F	Updated J≣		Operation	
	slack_20230210_1046_f2mc 920194bf-9bb0-44c5-9150-5e30a067e532	Deployment Complete		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 G	MT+05:00	Delete Update	
	stack 20230110 1734 (79)							

Creating an execution plan can preview the resource attribute changes of the entire stack and evaluate the impact. If the execution plan meets your expectations, you can apply the plan. Creating an execution plan does not incur fees. The system changes your stack only when you execute the plan.

Click **Deploy** in the **Operation** column of the execution plan to deploy it, as shown in **Figure 1-12**.

Figure 1-12 Execution plan dialog box

Are yo	u sure you want to execute the	e plan?	
Exec	cution Plan Name	Status	Created
exec	utionPlan_20230210_105	Available	2023/02/10 10:50:42 GMT+08
•	After the plan is executed, the resources in the template are based on resource payment	e stack is update enabled, which requirements.	d accordingly, and may incur fees

In the **Execution Plan** dialog box, click **Execute**. A message is displayed in the upper right corner, indicating that the execution plan is being deployed. Return to the stack list page. A new stack is generated and its status is **Deployment In Progress**, as shown in **Figure 1-13**.

Figure 1-13 Deployment in progress

Stacks ②						😰 User Guide	Create Stack
	_				Search by stack name by d	lefault.	QC
Stack Name	Status 🔽	Description	Created 1	Updated J≣		Operation	
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment in Progress		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:47:02 GP	00:80+Th	Delete Update	

Then, the stack status changes to **Deployment Complete**, as shown in **Figure 1-14**.

Figure 1-14 Deployment complete

Stacks ⑦						User Guide	Create Stack
					Search by stack name by default.		QC
Stack Name	Status 🖓	Description	Created 4F	Updated J≣	Operation	1	
stack_20230210_1046_f2mc	Deployment Complete		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 (GMT+08:00 Delete U	lodate	

On the **Execution Plans** tab page of the stack details page, the execution plan status is **Applied**, as shown in **Figure 1-15**.

Figure 1-15 Applied

< stack_20230210_1046_f2 Basic Information Resources Outputs Event	s Template Execution Plans			Delete Up	date Tempiate/Parameter
Deploy				Enter a keyword.	Q C
Execution Plan Name/ID	Status	Estimated Price ③	Created	Description	Operation
 executionPlan_20230210_1050_1925 c4002eff-242c-45a8-a7dc-481327312d93 	Applied		2023/02/10 10:50:42 GMT+08:00		Delete

Click the **Events** tab. The event list shows that resources of the stack are deployed, as shown in **Figure 1-16**.

Figure 1-16 Resources deployed

stack_20230815_1131_6vx7 Basic Information Resources Outputs	: stack_202030515_1131_6vx7 Bask: Information Resources Outputs <u>Events</u> Template Execution Plans								
				Resour	Enter a keyword. Q				
Time J⊞	Type 😨	Description	Resource Name/Type		Associated Resource ID				
2023/08/15 11:34:18 GMT+08:00	Log	Apply required resource success.			-				
2023/08/15 11:34:15 GMT+08:00		Apply completel Resources: 4 added, 0 changed, 0 destroyed.			25				
2023/08/15 11:34:15 GMT+08:00	Creation Complete	husweicloud_compute_instance.instance: Creation complete after 1m5s [id=d98de8f6.4fe1.4ede-aa87- 955e0636df6d]	Instance ECS		d98de885-4fe1-4ede-aa87-955e0638df8d				
2023/08/15 11:34:10 GMT+08:00	Creation In Progress	huaweicloud_compute_instance:Still creating [1m0s elapsed]	instance ECS						
2023/08/15 11:34:00 GMT+08:00	Creation In Progress	huaweicloud_compute_instance instance: Still creating (50s elapsed)	instance ECS						
2023/08/15 11:33:50 GMT+08:00	Creation In Progress	huaweicloud_compute_instance :Still creating [40s elapsed]	instance ECS		86				
2023/08/15 11:33:40 GMT+08:00	Creation In Progress	huaweicloud_compute_instance instance: Still creating [30s elapsed]	instance ECS		88				
2023/08/15 11:33:30 GMT+08:00	Creation In Progress	husweicloud_compute_instance instance: Still creating [20s elapsed]	Instance ECS		**				
2023/08/15 11:33:20 GMT+08:00	Creation In Progress	husweicloud_compute_instance instance: Still creating [10s elapsed]	instance ECS						
2023/08/15 11:33:10 GMT+08:00	Creation In Progress	huaweicloud_compute_instance: Creating	instance ECS		**				
10 • Total Records: 17 < 1 2	>								

You can view details on the console of the corresponding cloud service.

i. In the service list, locate and click **Elastic Cloud Server**. On the displayed page, view the deployed ECS, as shown in **Figure 1-17**.

Figure 1-17 ECS

Elastic Cloud Server ⑦						e ^p Troubleshooting	ECS News	🕞 Quick Links	Buy ECS
Start Stop Reset Passw	ord More 🔻							C 🛞 🖬	88 =
Search by Name by default.									@ Q
Name/ID	Monitoring	AZ 🏹	Status 🖓	Specifications/Image	IP Address	Billing Mode 🍞	Tag	Operation	
rf_teststack_ecs1 ec0ee4bf-3f16-47a3-96f6-9d549b	ø	AZ3	Running	1 vCPUs 1 GiB s6 Public-CAD-HCE-B	192.168.0.166 (Priv	Pay-per-use	-	Remote Login	More 🔻

Resources of the stack are deployed.

1.4 Querying a Stack

Log in to the RFS console and click **Stacks** in the navigation pane on the left. The stack list page is displayed.

In the search box above the stack list, enter the name of the target stack and click the search button, as shown in **Figure 1-18**.

Figure 1-18 Querying a stack

Stacks ⑦					😥 User Guide	Create Stack
				stack_20230210_1	1046_f2mc	X Q C
Stack Name	Status 🔽	Description	Created 4₽	Updated J≣	Operation	
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment Complete	-	2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:57:21 GMT+08:00	Delete Update	

1.5 Updating a Template or Parameter

Stack change records are not available. If you want to view change details, you are recommended to create an execution plan.

You can add cloud service resources or change resource specifications in either of the following ways: Go to the stack list page, locate the target stack, and click **Update** in the **Operation** column. Alternatively, go to the stack details page and click **Update Template/Parameter** in the upper right corner to enter the page for updating the stack, as shown in **Figure 1-19**.

Figure 1-19 Selecting a template

< Update Template/Para	ime		
1 Select Template ——— (2) Configure Parameters	— (3) Confirm Configurations	
★ Update Mode	Current Template	Replace Current Template	

You can select **Current Template** or **Replace Current Template** (use a new template) to update the stack.

Solution 1: Using the Current Template

1. Click **Next** to go to the **Configure Parameters** page and modify parameters on it, as shown in **Figure 1-20**.

Figure 1-20 Configuring parameters

K Update Template/Parame								
1) Select Template (2) Col) Select Template ———— (2) Contigue Parameters ———— (3) Contigurations							
RFS is free of charge, but the resources in the stack are not. Currently, you need to create an execution plan (free of charge) to obtain the estimated price.								
Template Info								
Stack Name	stack_20230210_1046_f2mc			Description				
Parameters 🖉								
Parameter Name	Value	Туре	Description					
vpc_name	rf_teststack_vpc1	string	vpc name					
subnet_name	rf_teststack_subnet1	string	subnet name					
ecs_name	rf_teststack_ecs1	string	ecs name					
ecs_admin_passwd	-	string	ecs passwd					

2. Click **Next** to go to the **Confirm Configurations** page, as shown in **Figure** 1-21.

Figure 1-21 Confirming configurations

< Upda	late Tem	plate/Parame…						
(1) Select	Template -	Configure Param	neters	3 Confirm Configurations				
* Stack	k Name	stack_20230210_1046_f2mc						
		The stack name must start with a	letter and can conf	tain a maximum of 128 character	s, including letters, digits, underscores (_)	, and hyphens (-). The stack name must	be unique. The stack name must be unique.	
Desc	cription	Enter a description of the stack						
				0/255				
Conf	Configure Parameters Enter a keyword. Q Encrypt some resources based on the template requirements. (?)							
Para	imeter		Value		Туре	Description		
* vpc_i	name		rf_teststack_vpc	1	string	vpc name		
subn	iet_name		rf_teststack_sub	net1	string	subnet name		
ecs_i	name		rf_teststack_ecs	1	string	ecs name		
ecs_	admin_pas	swd			string	ecs passwd		

Click Directly Deploy Stack. The Events page is displayed.
 The status changes to Update Complete, as shown in Figure 1-22.

Figure 1-22 Update complete

<pre>stack_20230210_1046_f2 Basic Information Resources Outputs</pre>	Delete Update Template/Parameter C			
Casic mornason resources Coupus	Crenty Template Execu			
				Enter a keyword. Q
Time J⊟ 1	Type	Description	Resource Name/Type	Associated Resource ID
2023/02/10 10:57:21 GMT+08:00	LOG	Apply required resource success.		-
2023/02/10 10:57:18 GMT+08:00		Apply completel Resources: 0 added, 3 changed, 0 destroyed.		
2023/02/10 10:57:18 GMT+08:00	Update Complete	huavekioud_compute_instance.ecs-floa1: Modifications complete after 2s (id=ec0ee486-3116-47a3-6886-9d549656a342)	ecs-1boa1 ECS	ec0ee4bf-3116-47x3-9696-9d549b56x342
2023/02/10 10:57:16 GMT+08:00	Update in Progress	hvævelcioud_compute_instance.ecs-fiboa1: Modifying [id=ec0ee4pf.3116-47a3-665-9d549656a342]	ecs-1boa1 ECS	ec0ae4bf-3116-47a3-96/6-9d543b56a342
2023/02/10 10:57:16 GMT+08:00	Update Complete	huavaicloud_ypc_subnet-upc-subnet-up0pp: Modifications complete after 1s [id=c35c3e47-6821-4164-916c-945573e0862]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-916c-9455713e06f2
2023/02/10 10:57:15 GMT+08:00	Update in Progress	hverveicloud_ypc_subnet-vpc-subnet-up/tip://kodflying[id=c35c3e47-6821-4164-916c-9455773e0862]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-916c-9455713e06f2
2023/02/10 10:57:15 GMT+08:00	Update Complete	hueweicloud_ypc.ypc-ght/w: Modifications complete after 1s [id=36375627-990F-40e7-90e8-b5af8448c674]	vpc-ghthw VPC	36375627-9901-40e7-9be8-b5a48448c674
2023/02/10 10:57:14 GMT+08:00	Update in Progress	huawelcioud_vpc vpc-ghthiv: Modifying [d=36375627-9801-40e7-9be8-b5at8448c674]	vpc-ghhłw VPC	36375627-9901-40e7-9be8-b5a18448c674
2023/02/10 10:57:12 GMT+08:00	LOG	Creating required resource now		-
2023/02/10 10:48:31 GMT+08:00	LOG	Apply required resource success.	-	-

Solution 2: Replacing the Current Template (see Creating a Stack)

1.6 Creating an Execution Plan

On the stack list page, click the name of the stack to go to its details page. Click **Update Template/Parameter** in the upper right corner to go to the page for creating an execution plan, as shown in **Figure 1-23**.

Figure 1-23 Page for creating an execution plan

< Update Template/Parame…							
1 Select Template ——	— (2) Configure Parameters —	—— (3) Confirm Configurations					
★ Update Mode	Current Template	Replace Current Template					

The subsequent steps are the same as those for creating a stack, except for one difference that you need to click **Create Execution Plan** instead of **Directly Deploy Stack**.

Then, an execution plan is generated, but the stack is not directly deployed. If you create multiple execution plans, they will exist in the same stack, as shown in **Figure 1-24**.

Figure 1-24 Execution plan list

E	stack_20230210_1046_f2 Basic Information Resources Outputs Events	s Template Execution Plans			Detete Upda	te Template/Parameter
	Deploy				Enter a keyword,	QC
	Execution Plan Name1D	Status	Estimated Price ③	Created	Description	Operation
	oxecutionPlan_20230210_1111_y191 18354ec4-1137-4608-9bb9-32a32d0d2992	Available	View Details	2023/02/10 11:11:02 GMT+08:00	-	Delete Deploy
	 executionPlan_20230210_1110_7hqt 6012cfac-0e99-4cd3-bca1-d67b0cd23tc8 	Available	View Details	2023/02/10 11:10:40 GMT+08:00	-	Delete Deploy

Locate the row that contains the generated execution plan and click **Deploy** in the **Operation** column if you want to apply it.

If an execution plan is no longer used, click **Delete** in the **Operation** column. In the displayed dialog box, click **OK**, as shown in **Figure 1-25**.

Figure 1-25 Deleting an execution plan

Delete Execution Plan						
Are you sure you want to delete the execution plan?						
Execution Plan Name Status Created						
executionPlan_20230426_164 Available 2023/04/26 16:45:12 G	MT+08					
Execution plans cannot be restored once deleted.						
OK Cancel						

1.7 Viewing Estimated Fees

On the **Execution Plans** page, find the row where the created execution plan resides. Click **View Details** (as shown in **Figure 1-26**). The **Price Details** dialog box is displayed and you can see the estimated price, as shown in **Figure 1-27**.

Figure 1-26 Viewing price details

stack_20230704_1115_ev Basic Information Resources Outputs Events	Template Execution Plans			Delete	Update Template/Parameter
Deploy Execution Blue Mena/D	Status	Entimated Brins (1)	Cashed	Enter a keyword.	QC
execution Flan, 20230704_1115_xx1p 78308266-88554778-8916-89116455665f	Available	VesifyMonthy 51.66 Peryse-Ues 38thor(t) Veru Detats	2023/07/04 11:15:34 GMT+08:00	-	Deploy Delete

Figure 1-27 Price details

Price Details							×
This price is an estimate and may different the set of the set	r from the final pric	e. Pricing Details.	Price inq	uiry is not supported for sor	ne resources. Go to Price Calc	ulator to calculate the fees.	
Total price Estimated yearly/monthly price	Total price Estimated yearly/monthly price: \$1.46 Estimated pay-per-use price: \$0.01/hour(s)						
Yearly/Monthly Pay-per-Use						Export Price List	
Cloud Pro Logical Name (?)	Region	Duration	Q	Original Price	Discount Details	Estimated Sale Price	
Elastic Volume 5 myvolume3	AP-Singapore	2month(s)	1	\$1.46	\$0.00	\$1.46	
			Clos	ie			

Figure 1-28 shows the estimated price of yearly/monthly-billed resources. **Figure 1-29** shows the estimated price of pay-per-use resources. **Figure 1-30** shows the resources that do not support price inquiry.

Table 1-3 lists the resources that support price inquiry.

Figure 1-28 Yearly/Monthly

Price Details						>		
This price is an estimate and may differ from the final price. Pricing Details. Price inquiry is not supported for some resources. Go to Price Calculator to calculate the fees.								
Total price Estimated yearly/monthly price	Total price Estimated yearly/monthly price: \$1.46 Estimated pay-per-use price: \$0.01/hour(s)							
Yearly/Monthly Pay-per-Use						Export Price List		
Cloud Pro Logical Name	Region	Duration	Q	Original Price	Discount Details	Estimated Sale Price		
Elastic Volume \$ myvolume3	AP-Singapore	2month(s)	1	\$1.46	\$0.00	\$1.46		
			Clos	se				

Figure 1-29 Pay-per-use

Price Details							×
1 This price is a	an estimate and may differ from	the final price. Pricing	Details. Pr	ice inquiry is not supported for s	ome resources. Go to Price Cal	culator to calculate the fees.	
Total price Esti	imated yearly/monthly price: \$1.	46 Estimated pay-	per-use pr	ice: \$0.01/hour(s)			
Yearly/Monthly	Pay-per-Use					Export Price List	
Cloud Product	Logical Name (?)	Region	Qua	Original Price	Discount Details	Estimated Sale Price	
Elastic Volume Serv	myvolume2	AP-Singapore	1	\$0.01 /hour(s)	\$0.00 /hour(s)	\$0.01 /hour(s)	
			Γ	Close			

Figure 1-30 To be supported

Price Details			>				
This price is an estimate and may differ from the final price. Pricing Details. Price inquiry is not supported for some resources. Go to Price Calculator to calculate the fees.							
Total price A Price inquiry is not supported for som	ne resources. For details, see the "To Be Supported" tab page	je.					
To Be Supported ⑦			Export Price List				
Cloud Product	Logical Name	Cause					
Virtual Private Cloud	sg-rxib3	Not supported					
	Close						

Cloud Service	Resource Type	Billing Mode
Elastic Cloud Server (ECS)	huaweicloud_compute_in stance	Yearly/ Monthly and pay- per-use
Elastic Volume Service (EVS)	huaweicloud_evs_volume	Yearly/ Monthly and pay- per-use
Elastic IP (EIP)	huaweicloud_vpc_eip	Yearly/ Monthly and pay- per-use
Bandwidth	huaweicloud_vpc_bandwi dth	Pay-per-use
Elastic Load Balance (ELB)	huaweicloud_elb_loadbal ancer	Pay-per-use
NAT Gateway	huaweicloud_nat_gatewa y	Pay-per-use
Relational Database Service (RDS)	huaweicloud_rds_instanc e	Yearly/ Monthly and pay- per-use
Cloud Container Engine (CCE)	huaweicloud_cce_cluster	Yearly/ Monthly and pay- per-use
Cloud Search Service (CSS)	huaweicloud_css_cluster	Pay-per-use
GaussDB(for Redis)	huaweicloud_gaussdb_re dis_instance	Yearly/ Monthly and pay- per-use
GaussDB(for MySQL)	huaweicloud_gaussdb_my sql_instance	Yearly/ Monthly and pay- per-use
Scalable File Service (SFS)	huaweicloud_sfs_turbo	Pay-per-use
Distributed Cache Service (DCS)	huaweicloud_dcs_instanc e	Yearly/ Monthly and pay- per-use

Table 1-3 Cloud services/Resources that support price inquiry and billing modes

Cloud Service	Resource Type	Billing Mode
Distributed Message Service (DMS) for Kafka	huaweicloud_dms_kafka_i nstance	Pay-per-use

Price estimation will fail if mandatory fields are not specified or a field is invalid in the template used for price estimation.

After the price inquiry completes, the estimated price is displayed in the basic information on the execution plan details page, as shown in **Figure 1-31**.

Figure 1-31 Execution plan details

	stack_20230210	_1046_f2mc			×
_	Basic Information				
	Execution Plan Name	executionPlan_20230210_10	50_1925		
Estimated Price ()	Execution Plan ID Description	c4002eff-242c-46a8-a7dc-481	327312d93		
	Created	2023/02/10 10:50:42 GMT+08	:00		
	Status Abstract	Applied Resource modified: 3			
	Change History				C
				Ent	er a keyword. Q
	Operatio	Mode	Resource Name	Resource Type	
	✓ Modify	RESOURCE	ecs-1boa1	huaweicloud_compute_instance	
	✓ Modify	RESOURCE	vpc-ghhfw	huaweicloud_vpc	
	✓ Modify	RESOURCE	vpc-subnet-ug0pp	huaweicloud_vpc_subnet	
	Estimated Price ③	Estimated Price () Estimated Pri	Estimated Price (*) Estimated	Estimated Price Basic Information Estimated Price Execution Plain 100 estimation Plain 2023/2010 1995 1985 Execution Plain 100 estimation Pla	Stack_20230210_1046_122mc Basic Information Estimated Price (*) Estimated Price (*) Estimated Price (*) Estimated Price (*)

1.8 Deleting a Stack

1. When **Deletion Protection** is disabled:

On the stack list page, find the created stack and click **Delete** in the **Operation** column. In the displayed dialog box, enter **Delete** in the text box and click **OK**.

Alternatively, go to the stack details page and click **Delete** in the upper right corner, as shown in **Figure 1-32**.

Figure 1-32 Dialog box for deleting a stack

Stacks ⑦					(🕃 User Guid	de Create Stack
	Delete Stack		×	Search by sta	ck name by default.	QC
Stack Name	Are you sure you want to delete the stac	k and resources in the stack? Stack and resources can	not	Updated JΞ	Operation	
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	be restored after being deleted. Exercise Stack Name	e caution when performing this operation. Status Created		2023/02/10 10:57:21 GMT+08:00	Delete Update	
stack_20230110_1734_178i 231b6bfa-38a3-463a-b8cc-209461ecf824	stack_20230210_1046_f2mc Enter Delete to delete the stack and res	Deployment 2023/02/10 10:47:01 GMT+08:00 ources.	_	2023/01/10 17:34:55 GMT+08:00	Delete Update	
stack_20230109_0928_q41d 7e1a2e7c-1e54-45b2-a73a-7d6b8b8a7acb	Enter Delete.	OK Const		2023/01/09 09:57:25 GMT+08:00	Delete Update	
stack_20230103_0951_xpkm 36f7a35f-42a5-4ce7-a2c7-d7eb8f372ac1			_	2023/01/03 09:57:42 GMT+08:00	Delete Update	
stack_20221229_1622_7r0q 0d2064xc 80x2 4021 b721 740411446xxb	Deployment Complete -	2022/12/29 16:22:29 GMT+08:	00	2022/12/29 16:23:02 GMT+08:00	Delete Update	

2. When Deletion Protection is enabled:

Figure 1-33 shows that the Enabled status of Deletion Protection.

Figure 1-33 Deletion protection



If you delete a resource stack with deletion protection enabled, an error message will be displayed, as shown in **Figure 1-34**.

Figure 1-34 Deletion failed

Delete stack failed. Stack [stack_20230214_0950_w2l3] × cannot be deleted while the deletion protection is enabled.

1.9 Viewing Stack Details

1. Viewing Stack Details

There are six function modules on the stack details page (The stack named **stack_20221206_0933_uiyn** is an example here.):

a. **Basic Information**: displays basic information about the stack, as shown in **Figure 1**.

Figure 1-35 Basic information

< stack_20230210_1046_f2	Delete Update Template/Parameter C
Basic Information Resources Outputs Events Temptate Execution Plans	
Basic Information	🖉 Edit
Stack Name stack_20230210_1046_Emmc	
Stack ID 920194x436b044x5819554308087e532	
Status Deployment Complete	
Description -	
IAM Permission Agency 🕐 (Provider) husereidoud, (Agency) r(LedmiL, trust	
Auto-Rollback Disabled	
Deteilon Protection Disabled	
Created 2023/02/10 14 7 01 GMT-08:00	
Updated 2023/02/10 10.57:12 GMT+08:00	

b. **Resources**: displays information about cloud services or resources generated during plan execution and stack deployment, as shown in **Figure 1-36**.

Figure 1-36 Resources

stack_20230210_1046_f2 Basic Information Resources Outputs Events	Template Execution Plans			Delete Update Template/Parameter C
				Enter a køyword. Q
Cloud Product Name	Physical Resource Name/ID (2)	Logical Name	Resource Type	Resource Status 😨
Elastic Cloud Server	rf_leststack_ecs1 ec0ee4bf-3116-47a3-9616-9d549b56a342	ecs-1boa1	huawelcloud_compute_instance	Creation Complete
Virtual Private Cloud	rf_teststack_vpc1 36375627-9901-40e7-9be8-b5at8448c674	vpc.ghthw	huamelcloud_vpc	Creation Complete
Virtual Private Cloud	rf_leststack_subnet1 c35c3e47-6821-41d4-916c-9455713e06f2	vpc-subnet-ug0pp	huaweicloud_vpc_subnet	Creation Complete

c. **Events**: displays log information generated during plan execution and stack deployment. Events are updated in real time based on the stack status. For example, **Figure 1-37** shows that three resources are created.

Figure 1-37 Events

Stack_20230210_1046_f2 Basic Information Resources Outputs	Events Template Exect	ution Plans		Delete Update Template/Parameter C
				Enter a keyword. Q
Time J≣	Type	Description	Resource Name/Type	Associated Resource ID
2023/02/10 10:57:21 GMT+08:00	LOG	Apply required resource success.		
2023/02/10 10:57:18 GMT+08:00	-	Apply completel Resources: 0 added, 3 changed, 0 destroyed.	-	
2023/02/10 10:57:18 GMT+08:00	Update Complete	huaweicloud_compute_instance.ecs-1boa1: Modifications complete after 2s [id=ec0ee4bf-3f16-47a3-9686-9d549b56a342]	ecs-1boa1 ECS	ec0ee4bf-3116-47a3-96f6-9d549b56a342
2023/02/10 10:57:16 GMT+08:00	Update in Progress	huawekcloud_compute_instance.ecs=1boa1: ModPying [id=ec0ee4bf-3f16=47a3=9005-905496056a342]	ecs-1boa1 ECS	ec0ee4bf-3f16-47a3-96f6-9d549b55a342
2023/02/10 10:57:16 GMT+08:00	Update Complete	huaweicloud_vpc_subnet.vpc-subnet-ug0pp: Modifications complete after 1s [id=c35c3e47-6821-41d4-916c-94557/3e06/2]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-916c-94557f3e06f2
2023/02/10 10:57:15 GMT+08:00	Update in Progress	huaweicloud_vpc_subnet.vpc-subnet-up0pp: Modifying [id=c35c3e47-6821-41d4-916c-94557f3e06f2]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-916c-94557f3e06f2
2023/02/10 10:57:15 GMT+08:00	Update Complete	huaweicloud_vpc.vpc-ghhfw: Modifications complete after 1s [id=26375627-980f-40e7-9be8-b5atD448c574]	vpc-ghhfw VPC	36375627-9901-40e7-9be8-b5at8448c674
2023/02/10 10:57:14 GMT+08:00	Update in Progress	huaweicloud_vpc.vpc-ghhfw: Modifying (id=36375627-990f-40e7-9be8-to5af8448c674)	vpc-ghhfw VPC	36375627-9901-40e7-9be8-b5at8448c674

d. **Outputs**: displays output parameters in the template, as shown in **Figure** 1-38:

Figure 1-38 Outputs

<pre>< stack_20230210_1046_f2 Basic Information Resources Outputs Events Template Ex</pre>	ecution Plans		Delete Update Template/Parameter C
Name	Туре	Value	
		No data available.	

e. **Template**: displays the template content used for creating a stack, as shown in **Figure 1-39**.

Figure 1-39 Template

< stack_20230210_1046_f2	Delete Update Template/Parameter C	3
Basic Information Resources Outputs Events Implate Execution Plans		
Deployment Code	C	2
Content Transfer from X Transfer from	ĺ	

f. **Execution Plans**: displays different execution plans. After an execution plan is generated, you need to click **Deploy** to create resources in the template. After an execution plan is applied, its status changes from **Available** to **Applied** and the **Deploy** button disappears, as shown in **Execution plans**.

Figure 1-40 Execution plans

Stack_20230210_1046_f2 Basic Information Resources Outputs Events	Template Execution Plans			Delete Upda	ite Template/Parameter
Deploy				Enter a keyword.	Q C
Execution Plan Name/ID	Status	Estimated Price (7)	Created	Description	Operation
<pre>executionPlan_20230210_1111_y99 f8354ec4-1137-4608-9bb9-3283260d2992</pre>	Available	View Details	2023/02/10 11:11:02 GMT+08:00	-	Delete Deploy
executionPlan_20230210_1110_7hgf 6012cfac-0e99-4cd3-bca1-d67b0cd23fc8	Available	View Details	2023/02/10 11:10:40 GMT+08:00		Delete Deploy

Click the execution plan name. The execution plan details page is displayed, as shown in **Figure 1-41**.

Figure 1-41 Execution plan details

< stac	ck_20230210_1046_f2			stack	_20230210	_1046_f2mc)
Basic Info	ormation Resources Outputs Even	ts Template Execution Plans	_	Basic	Information					
Deplo	0y			Execut Execut	ion Plan Name ion Plan ID	executionPlan_20230210_105 c4002eff-242c-46a8-a7dc-481	0_1925 327312d93			
	Execution Plan Name/ID	Status	Estimated Price ①	Descrip	tion	-				
	executionPlan_20230210_1050_1925 c4002eff-242c-46a8-a7dc-481327312d93	Applied		Create	d	2023/02/10 10:50:42 GMT+08	00			
				Status		Applied				
				Abstra	3	Resource modified: 3				
				Chan	ge History					C
									Enter a keyword.	Q
					Operatio	Mode	Resource Name	Resource Type		
				~	Modify	RESOURCE	ecs-1boa1	huaweicloud_compute_inst	ance	
				~	Modify	RESOURCE	vpc-ghhfw	huaweicloud_vpc		
				~	Modify	RESOURCE	vpc-subnet-ug0pp	huaweicloud_vpc_subnet		

2 Visual Designer

2.1 Introduction

The RFS Visual Designer is a graphic tool for creating, viewing, and modifying templates. Using the designer, you can drag elements to the canvas, directly connect them, and then edit their details in a visual form.

The designer can help you quickly understand the relationships between elements in templates and modify templates easily.

The designer has the following advantages:

• Visualizing template resources

The Visual Designer visualizes template resources to offer you a better insight.

The Visual Designer defines resources in the template metadata, such as resource size. When you open a template, the designer automatically adds the metadata and the layout is saved. Therefore, when you re-open the template, the last-saved template is displayed.

• Simplifying template compiling

When you compile template resources in a JSON or TF file, the process is complex and error-prone. In the designer, you can add resources to the template by dragging resources to the canvas and drawing lines between resources to create a relationship.

• Simplifying editing with the Visual Designer

The designer allows you to modify templates. Text designer is not required. The designer also supports autocomplete and lists all property names for a resource.

2.2 Visual Designer UI

The RFS Visual Designer UI includes six parts: control pane, resource bar, log area, design console, template pane, and attribute pane. For details about each part, see **Figure 2-1**.

Figure 2-1 Visual Designer UI

File 🔻 💭 上 C 🛛 Deployme	₩∞∞Ο \\$ Q \6 → Q 100% Q & Ø ● 王 王 B	Resource Para	meters Save Template Create Stack	
Enter a keyword. Q Compute	Template Name: newTemplate /		Attribute Editing Panel	
Elastic Cloud Server				
Storage				
Elastic Volume Service	3			
Scalable File Service(S			4	
Networking +	Drag resources from the resource ist on the left to build a template.	,	_	
Virtual Private Cloud			No resources selected.	
Elastic IP				
VPC-Subnet				
NAT Gateway				
Security Group				
Security Group Rule				
Databases 🍝	· · · · · · · · · · · · · · · · · · ·			
Relational Database S	Deployment Code 🕥 The script is in JSCN form	at by default.	Wessages 🔁 🔀	<
Containers 🔺			No messages.	
Cloud Container Engine	5		6	
Content Delivery & Edge 🔺				0
CDN domain				G
				T
				_

Table 2-1 Visual Designer UI description

No. (in the Above Figure)	Description
1	Control pane, which displays the control operation shortcuts of the design console.
2	Resource pane, which displays available resources for orchestration. Resources are categorized by service. You can drag resources and orchestrate them on the canvas and use lines to connect them and define their relationships.
3	Design console, which is the canvas for you to design templates and connect resources.
4	Attribute panel, which displays the attribute name and type of the selected resource.
5	Template area, which allows you to modify templates and define attributes.
6	Log area, which displays error information and messages triggered during your operation. For example, non-compliant parameters are displayed during syntax verification.

2.3 Cloud Services or Elements

A cloud service is an element and a basic unit to be orchestrated in Visual Designer. Each element contains all attributes of the resource type it belongs to.

Resources are classified on the left of the designer UI and can be dragged to the canvas on the right.

Copying or Deleting a Cloud Service

Drag a cloud service to the canvas. Right-click the cloud service.

Figure 2-2 Right-clicking the cloud service



Two icons are displayed. Click **Clone** to copy the cloud service. Click **Delete** to delete the cloud service.

Cloud Service Block Diagrams

There are two types of cloud service resource block diagrams in Visual Designer:

• Type 1: Non-scalable elements

A non-scalable element generally represents a terminal service or an entity resource. The block diagram size is fixed.

Figure 2-3 Non-scalable elements

. 0.0.0.	
° 0	ò
ecs-zcojt	

• Type 2: Scalable elements

A scalable element is a container element. The containers and elements can be put into containers. You can adjust the size of the block diagram by dragging.

Figure 2-4 Scalable elements

Г	1					~	<u> </u>				—					~			_	7
٦	đ	2	v	oc-	91	okn	nk													T.
		_		~	-															
								Œ	7	gy	c-s	ub	ne	t-o	or					
										1										
Ц	. 1																		С.	Ŀ
h																				ť
																				ŀ
																				ľ
Ċ	-									_	0	_	_	-	_	-			-0	j

Connecting Resources Using Hollow Points/Lines

When some elements are dragged to the canvas, a hollow point is displayed on the resource. There are **green hollow points** and **gray hollow points**.

Hollow points can be used to connect resources. The connection line between two resources represents their association or dependency. There are green lines and gray lines.

• Green hollow points

A resource displayed with a green hollow point can depend on other resources.

You can connect resources as required and the resources to be depended on are created by RFS first.

For example, when you drag an RDS resource to the canvas, a green hollow point is displayed as shown in the following figure.

Figure 2-5 RDS green hollow point

•	ł		dep	en	ds	On	
·	1	0	ò				
•	0		Ŷ	÷			-
÷	0	$(\mathbf{\omega})$		÷	÷		
÷			\sim	÷			÷
		rds-inst	1.1				

When you move the cursor to the green hollow point of the left resource and click the green hollow point, an arrow is displayed. Drag the cursor to the resource on the right and release the cursor. The left resource depends on the right resource.



Figure 2-6 Green hollow point: an element to be connected

• Gray hollow point

A resource with a gray hollow point can be associated with other resources. For example, when you drag a CCE resource to the canvas, a gray hollow point is displayed as shown in the following figure.

Figure 2-7 CCE gray hollow point



When you move the cursor to the gray hollow point, you can view an attribute value as shown in the following figure, which indicates that the CCE resource can only be connected to the EIP resource.

Figure 2-8 CCE attribute



Assume that the CCE resource needs to be connected to a VPC resource. Drag the VPC element to the canvas first.

Figure 2-9 EIP



Move the cursor to the gray hollow point of the CCE resource and click the gray hollow point. An arrow is displayed. Drag the mouse to move the arrow to the EIP resource. When the hollow point of EIP resource turns green, release the mouse. The two resources are associated.





• Green hollow points and connection lines

The line from a resource with a green hollow point to another resource represents the dependencies between two resources. For more information, see •Green hollow points.

Figure 2-11 Green hollow points and connection lines



• Gray hollow points and connection lines

The line from a resource with a hollow gray point to another resource indicates that the two resources are associated using an attribute value. In addition, a dependency relationship exists between the two resources. For more information, see •Green hollow points.

A resource with a gray hollow point can be associated with other resources. For example, when you drag a CCE resource to the canvas, a gray hollow point is displayed as shown in the following figure. When you move the cursor to the gray hollow point, you can view an attribute value as shown in the following figure, which indicates that the CCE resource can only be connected to the EIP resource. Assume that the CCE resource needs to be connected to a EIP resource. Drag the EIP element to the canvas first. Move the cursor to the gray hollow point of the CCE resource and click the gray hollow point. An arrow is displayed. Drag the mouse to move the arrow to the EIP resource. When the hollow point of EIP resource turns green, release the mouse. The two resources are associated. Hollow point: an element to be connected

Figure 2-12 Gray hollow points and connection lines



2.4 Shortcut Keys of Visual Designer

Operation	Windows OS	macOS
Сору	Ctrl-C	Command-C
Paste	Ctrl-V	Command-V
Cut	Ctrl-X	Command-X
All	Ctrl-A	Command-A
Find	Ctrl-F	Command-F
Go to the beginning of the text	Ctrl-Home	Command-Home Command-Up
Go to the previous line	Up	Up Ctrl-P
Go to the end of the text	Ctrl-End	Command-End Command-Down
Go to the next line	Down	Down Ctrl-N
Go to the end of the current page	PageDown	PageDown Ctrl-V
Copy the current element	Ctrl-D	Command-D
Undo	Ctrl-Z	Command-Z
Delete	Delete	Delete Ctrl-D Shift- Delete
Zoom in	Ctrl-=	Command-=
Zoom out	Ctrl	Command

2.5 Compiling a Template to Create an EVS Disk

This section describes how to **compile a template on the Visual Designer** to create an EVS disk. At the end of this walkthrough, you will see the newly created EVS disk on the Cloud Server Console, as shown in **Figure 2-13**.

Figure 2-13 Created EVS disk

Elastic Volume Service ⑦											Buy Disk
Disks Recycle Bin New!											
You can create 56 more disks with 5,050 GB of storage space To renew multiple disks at a time, switch to the Renewals pag	n. 19.										FA
Disk Name	Status	Disk Specifi	Function	Server Name	Disk Sharing	Device Type	Encrypted	AZ T	Billing Mode	Operation	
evs-volume-5cc3i 0fe383b4-e679-48da-ad76-a66a6cf05277	Available	Ultra-high I/O 10 GB	Data disk	-	Disabled	VBD	No	AZ3	Pay-per-use Created on	Attach Expand Capacity Create Backup	More 👻

1. **Step 1: Use the Visual Designer to Compile a Template**: Use the Visual Designer to add elements and configure parameters for each element.

- 2. **Step 2: Create an EVS Disk**: Use the Visual Designer to create an ECS, a VPC, and a subnet.
- 3. **Step 3: Delete Unnecessary Resources**: Delete unnecessary stacks to avoid unwanted charges.

Step 1: Use the Visual Designer to Compile a Template

- **Step 1** Log in to the RFS console. In the navigation pane on the left, click **Visual Designer**.
- **Step 2** Add and connect elements. Drag elements, such as VPC, VPC subnet, and EVS, to the canvas, and establish relationships between them, as shown in Figure 2-14.

Pier Circle

</

Figure 2-14 Adding an element

- **Step 3** Configure the template parameters. Set the attributes in the **Attribute Editing Panel** panel on the right.
 - 1. Click the **vpc** element in the canvas. The attributes of the element will be automatically displayed in the attribute pane. The CIDR can use the default value **192.168.0.0/16**.
 - 2. Click the **subnet** element in the canvas. The attributes of the element will be automatically displayed in the attribute pane. You can set the default value for the attributes.
 - 3. Click the **evs** element in the canvas. The attributes of the element will be automatically displayed in the attribute pane. The attributes with red text boxes are mandatory, as shown in **Figure 2-15**.

Figure 2-15 Mandatory attributes

Enter a keyword.	Template Name: newTemplate P				evs-volume-ialyg 🖉	
Compute					* AZ	
Contraction Classed Researce					Select 🗸	
Casto Cloud Server				and a second second second	C Managerran	
Storage						
	с на 🗠 ур	c-mtlak			 Hard Disk Type 	
Elastic Volume Service		(C) units automati bar			Select V	Œ
		C) abc-automotion				
Scalable File Service(5					10 Mandalory	-
Networking -					Disk Specification	
-		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · ·	La	
C Virtual Private Cloud					- 10 + 08	6
		evs-vol			Rillion Mode	
Elastic IP					Change mode	
					-Defautt-	. 0
VPC-Subnet						
					stang cycle Unit	
NAT Gateway					-Default- V	G
Constant Constant						
and any choup					Required Duration	
Con Security Group Bule						G
Jatabases .						
	Deployment Code ①		The	cript is in JSON format by default.	Messages	5
CO Relational Database S						
Containers -	32 "name"i "subnet-pbr8c",				No messages.	
	33 cide": "192.168.0.0/24"					
Cloud Container Engine	34 gaceway_1p*1 *192.168.0	two werentlak tal				
	36)	C				
Content Delivery & Edge 🔶	37),					
	38 "huaweicloud_evs_volume": {					
CON DOMAIN	39 "evs-volume-lalyg": (
	40 5120 1 10, 41 "name"1 "evs.volume.com	da"				
	Hand I destroitenercod					
	AZ 1					

D NOTE

To facilitate parameter setting and modification, you are advised to set parameters whose value needs to be frequently changed as input parameters. **get_input** indicates input parameters. You can define the values behind **get_input**.

4. Click ⁽⁺⁾ on the right of the attribute editing panel to generate an input parameter, as shown in **Figure 2-16**.

Figure 2-16 Generating an input parameter

nplate Name: newTemplate 🖉		10 10 10 10 10 10 10 10 10 10 10 10 10 1	evs-volume-ialyg 🖉	
	Select Input Parameter	*	* AZ	
		1 202 302 1	Select	~ (
	Parameter Group Common Parameter Encryption Parameter	27	Mandatory	
@ vpc-mtlak	Data Type String	· · · · · · · · · · · · · · · · · · ·	Hard Disk Type	
\odot	vpc		Select	~ (
	Parameter		Mandatory	
	Create Common Parameter		Disk Specification	
		-	 - 10 +	GB (
	e	1. 310 - 515 - 5	Billing Mode	
		and the second	-Default-	
			Billing Cycle Unit	
			-Default-	~ (
			Required Duration	
				15

Step 4 Click **Save Template** in the upper right corner of the Visual Designer to save the template. If the message "Template saved. You can view and manage it in My Templates." is displayed, the template is saved.

Figure 2-17 Saving a template

	$\square \square \land \land \bigcirc \uparrow$	00% ♥ � Ø @ Ŧ 玊 봄		Resource Parameters	Save Template Cre	ate Stad
plate Name: newTemplate-test					Tomolate, payed Vey cap view	and m
					remplate saved. Fou can view	and ma
					age it in My Templates.	
						10
					, v	J
				* Hard E	Jisk Type	
D vpc-i	mtlak					1
				General	Purpose SSD V) e
	(>) vnc-subnet-iw					
	() the summer limit			Disk Sper	cification	
				10	+ GE	3 🕀
				Dillog Me	uda.	
				Ching inc	66	
				Default) e
	evs-vol					J 🙂
				Billing Cy	cie Unit	
				Default		1 0
				Delaul	- *	Ð
				Required	Duration	
						1 -
						⊕
				Name		
				evs-volu	me-coqvb	•
vyment Code 🔿			The script is in JSON form	at by default. Message	s	5

----End

Step 2: Create an EVS Disk

- **Step 1** Close the Visual Designer and go to the RFS console.
- **Step 2** In the navigation pane on the left, click **Templates** > **My Templates**. The template is displayed in the template list.
- **Step 3** Click **Create Stack** in the **Operation** column of the template.

Step 4 Click **Next** to view the stack information. After confirming the information, click **Next**, select an agency, click **Next**, and click **Create Execution Plan**.

The **Execution Plans** tab page is displayed, click **Deploy** in the **Operation** column of the execution plan.

Step 5 When the status of the plan is **Applied**, you can view that three cloud services exist in the **Resources** tab page. A VPC, a subnet, and an EVS disk have been created.

Figure 2-18 Crested stack

< stack_20230210_1046_f2				Delete Update Template/Parameter C
Basic Information Resources Outputs Events	Template Execution Plans			
				Enter a keyword. Q
Cloud Product Name	Physical Resource NameID	Logical Name (2)	Resource Type	Resource Status 🖓
Elastic Cloud Server	rf_teststack_ecs1 ec0ee4bf-3116-47a3-96f6-9d549b56a342	ecs-1boa1	huaweicloud_compute_instance	Creation Complete
Virtual Private Cloud	rf_8eststack_vpc1 36375627-9901-40e7-9be8-b5at8448c674	vpc-ghhfw	husweicloud_vpc	Creation Complete
Virtual Private Cloud	rf_Neststack_subnet1 c35c3e47-6821-41d4-916c-9455713e06f2	vpc-submet-ug0pp	huaweicloud_vpc_subnet	Creation Complete

Step 6 View the created cloud services.

- 1. Log in to the Huawei Cloud management console.
- Choose Cloud Server Console > Elastic Volume Service. You can see the newly created EVS disk.

Figure 2-19 EVS created

Elastic Volume Service ③										Buy Disk
Disks Recycle BinNew!										
You can create 56 more disks with 5,050 GB of storage space To renew multiple disks at a time, switch to the Renewals page	2.									
Delete Expand Capacity						All statu	ises 👻	Disk name 🔍 👻		Q Search by Tag 🗧 🖸 🖾 🛞
Disk Name	Status	Disk Specifi	Function	Server Name	Disk Sharing	Device Type	Encrypted	AZ 🖓	Billing Mode	Operation
evs-volume-5cc3l 0fe383b4-e679-48da-ad76-a66a6ct05277	😔 Available	Ultra-high I/O 10 GB	Data disk		Disabled	VBD	No	AZ3	Pay-per-use Created on	Attach Expand Capacity Create Backup More 👻

 Choose Service List > Networking > Virtual Private Cloud. You will see the newly created VPC on the VPC list.

Figure 2-20 Created VPC

Virtual Private Cloud ②						🕞 Quick Link	Create VPC
Specify filter criteria.							QCE
NameID	IPv4 CIDR Block	Status	Subnets	Route Tables	Owner Project ID 💿	Operation	
vpc-idc01 ccb044b9-6755-4f68-a131-4cf9f57b1dcb	192.168.0.0/16 (Primary CIDR block)	Available	1	1	47cf611e636c4a73808e2731cc7fa471	Edit CIDR Block Delete	

4. Click the VPC name to show more details about the VPC. On the VPC details page, you will see that the subnet has been created in the VPC.

Figure 2-21 Created subnet

Subnets ⑦												
VPC ID: ccb044b9-675	5-4f68-a131-4cf9f57b1dcl	o 🛞 Add filter							x Q C E			
Name/ID	VPC	IPv4 CIDR Block	IPv6 CIDR 🕐	Status	AZ (?)	Network ACL	Route Table	Owner Project ID (?)	Operation			
subnet-6qoby 07226224-03da-41	vpc-idc0l	192.168.0.0/24	- Enable IPv6	Available	-	-	rtb-vpc-idc0l Default	47cf611e636c4a73806e2731cc7fa471	Change Route Table Delete			

----End

Step 3: Delete Unnecessary Resources

You are advised to delete unnecessary stacks to avoid unwanted charges.

- **Step 1** Log in to the RFS console.
- **Step 2** In the navigation pane on the left, click **Stacks**.
- **Step 3** Locate the created stack, click **Delete** in the **Operation** column, and delete the stack as prompted.

----End

3 Managing a Stack

Stack management consists of two aspects. One is lifecycle management of created stacks, including deleting and changing. The other is viewing stack details to obtain their running statuses.

Modifying a Stack

After a stack is created successfully (that is, in the normal status), you can change the parameters of the stack as needed.

- **Step 1** Log in to the RFS console.
- Step 2 In the navigation pane on the left, click Stacks.
- **Step 3** In the stack list, click the stack to be changed.
- Step 4 On the stack details page, click Update Template/Parameter.
- **Step 5** Change the template version or input parameters, and click **Next**.
- Step 6 Confirm the configurations and then click Create Execution Plan.
- **Step 7** On the **Execution Plans** tab page of the stack details page, select the created execution plan and click **Deploy** in the **Operation** column.

On the **Events** tab page, you can view the detailed operation events related to stack changes.

----End

Deleting a Stack

Deleted stacks cannot be restored. Exercise caution when deleting a stack.

- **Step 1** Log in to the RFS console.
- Step 2 In the navigation pane on the left, click Stacks.
- **Step 3** In the stack list, select the stack to be deleted and click **Delete** in the **Operation** column.
- Step 4 In the dialog box displayed, enter Delete and click OK.

Check the stack name carefully. The deletion cannot be revoked.

On the **Events** tab page, you can view the detailed operation events related to stack deletion.

----End

Viewing Stack Details

After a stack is created, you can view its data and resources on the stack details page.

Resources

Elements of a stack, such as applications and cloud services

- Outputs
 - Output parameters and their values in the stack template
- Template

Details of the template used to create the stack

Events

You can view stack events to monitor the stack operation progress. For example, when you create a stack, all important steps during the stack creation are displayed on the **Events** tab page. The events are sorted in chronological order with the latest event being displayed at the top.

4 Stack Sets

4.1 Concepts

1. Administrator and target accounts

Administrator account: A Huawei Cloud account used to create stack sets. For stack sets with service-managed permissions, use either the management account of the organization or a delegated administrator account as the administrator account. You can manage stack sets by logging in to the administrator account in which you creates them.

Target account: An account used to create, update, or delete one or more stacks in a stack set. To use a stack set to create stacks in a target account, build a trust relationship between the administrator and target accounts first.

2. Stack set permission models

Self-managed permissions: When using this permissions model, create IAM roles required by stack sets for deployment across accounts and Huawei Cloud regions. These roles are indispensable for establishing a trust relationship between the account used to manage stack sets and the account to which you deploy stack instances. Self-managed permissions allow stack sets to be deployed to any Huawei Cloud account in which you have permissions to create IAM roles.

3. Agency name

Administration agency: RFS uses this agency to obtain permissions that a member account grants to a management account. This agency is created in an administrator account and must have the **iam:tokens:assume** permission to obtain the managed agency credential.

Managed agency: RFS uses this agency to obtain permissions required for deploying resources. This agency is created in a target account. The agency type is account and the delegated account is the administrator account.

4.2 Using a Stack Set

Set up required permissions to create a stack set with service-managed permissions.

To create a stack set with **self-managed permissions**, create IAM roles in each account to establish a trust relationship between the administrator and target accounts.

1. Determine which Huawei Cloud account is the administrator account.

Stack sets are created in this administrator account. A target account is an account into which you create stacks in a stack set.

2. Determine how to configure permissions for the stack set.

The easiest (and most lenient) permissions setup is to allow all users within the administrator account to create and update the stack sets managed through that account. If you need finer-grained control, you can set up permissions to manage required resources through IAM agencies. For details, see **Creating an Agency**.

a. Set up permissions for users of the administrator account to perform stack set operations in all target accounts.

In the administrator account, create an agency named Administrator_account (custom) that entrusts RFS. Add the iam:tokens:assume and Tenant Administrator permissions to the agency.

In the target account, create an agency named **Target_Account** (custom) that entrusts the administrator account, and grant the **Tenant Administrator** permission.

b. Set up advanced permissions for stack set operations.

In the administrator account, create an agency named **Administrator_account** (custom) that entrusts RFS. Use **fine-grained authorization** to add **iam:tokens:assume** and required operation permissions to the agency.

In the target account, create an agency named **Target_Account** (custom) that entrusts the administrator account, and grant the target account the permissions to perform operations on resources.

4.3 Creating a Stack Set

1. On the **Stack Set** page, click **Create Stack Set** in the upper right corner, as shown in **Figure 4-1**.

Figure 4-1 Creating a stack set

Stack Set						De User Guide Create Stack Set
Stack Set (3)						Enter a stack set name. Q
Stack Set Name/ID	Status 🖓	Permission Model	Description	Created ↓≡	Updated J≣	Operation

2. When selecting a template (as shown in **Figure 4-2**), specify the following information, confirm the settings, and click **Next**.

- Permission Agency
 - Select Permission: SELF-MANAGED
 - Administration Agency Name: RFS uses this agency to obtain permissions that a member account grants to a management account. This agency must have the iam:tokens:assume permission to obtain the

managed agency credential. Otherwise, an error is reported when an instance is created or deployed.

- Managed Agency Name: RFS uses this agency to obtain permissions required for deploying resources. The names of the agencies that different member accounts grants to the management account must be the same.
- Select Template
 - Creation Mode: Existing Templates
 - **Template Source**: Currently, you can create a template through **My Templates**, **URL**, and **Upload Template** as required.

Figure 4-2 Selecting a template

< Create Stack Set	
Select Template (2	i) Configure Peanneters () Depignment Setup () Continn Configurations
Permission Agency	
 Select Permission 	111 JANKAT
	You can create UMI permissions required to deploy to the largert account.
* Administration Agency Name	Entrod an approxy • C theore to Canada an Approxy?
	FPS such this agency to ablain permissions that a member account grants to a management account. To obtain managed agency condentials, a classic agency mult include the lambiters assume permission, and an agency mult include the ablains assume permission. Otherwise, an error insported where an instance is constrained or deployed.
* Managed Agency Name	Enfor a managed agency name
Select Template	
* Creation Mode	Luding Impulse
* Template Source	by Tompanian ULL Update Timpanian ULL Update Update Timpanian Update Timpanian ULL Update Timpanian Update Timpanian Update Timpanian Update Timpanian Update Timpanian Update T
* Template Name and Version	Salad a komplaka. • Salad a komplaka versusa. • C
	Next

3. Go to the parameter configuration page (as shown in **Figure 4-3**), customize the stack set name, configure parameters, and click **Next**.

Figure 4-3 Configuring parameters

< Create Stack	(Set	
Select Template -	2 Configure Parameters — 3 Deployment Setup — 4 Configurations	
* Stack Set Name	INVESELIZIONITY LIFELINE The data with same much tark-table a leiber and can contain a maximum of 121 disordines, instauling leibers, digite, underscores (and hydrows (_). The stack with same much be unique.	
Decription	Either a description of the shock not. 8026	
Configure P	Parameters	
Parameter	Value Type Description	
	(1) No data available.	
		Previous Next

4. Go to the deployment setup page (as shown in **Figure 4-4**). Enter the tenant ID and select a deployment region. Confirm the information and click **Next**.

Figure 4-4 Deployment setup

< Create Stack Set	4	
Select Template	Configure Parameters Configure Parameters Configure Parameters Configure Parameters Configure Parameters	
Deployment Setup	up	
* Domain ID	Enter domanitid, separated by English commas	
	05.49	
* Deployment Regions	Select region •	
		Previous Next

- AP-Singapore, CN-Hong Kong, and AP-Bangkok
- CN North-Beijing4, CN East-Shanghai1, and CN South-Guangzhou
- CN North-Ulanqab201
- CN South-Guizhou 202 and CN East-Suzhou201
- Saudi Arabia G42

Currently, only the above partitions can communicate with each other. Crosspartition communication is not supported.

5. Confirm the settings. Fill in correct parameters in previous steps and click **Deploy**.

6. Wait until the stack instance in **Figure 4-5** is created. The creation is successful after the operation is completed.

Figure 4-5 Stack instances

< stackSet_20240118_1436				Del	ete Update
Basic Information Stack Instance Opera	tion Template				
Stack Instance (2)				Enter a stack name.	Q C
Stack Name1D	Status	Status Message	Domain ID	Region	Operation
StackSet-stackSet_20240115_1436_ferred-d8985170cf 9e8bb400-024e-4058-b1b3-e51372dc3ce1	OPERATION_COMPLETE	-	159600e3f5fc4553b7f30c700ceef245	on-north-4	Delete
StackSet-stackSet_20240118_1436_fsmd-aacdd8301 2db77517-98ac-4d31-a8bd-ba8f4c01a8e4	OPERATION_COMPLETE	-	159680e3f5fc4553e7f30c780ceef245	cn-east-3	Delete

4.4 Updating a Stack Set

1. On the **Stack Set** page, click the name of the stack set in which you want to create a stack.

Stack Set						User Guide Create Stack Set
Stack Set (3)						Enter a stack set name. Q
Stack Set Name/ID	Status 🖓	Permission Model	Description	Created ↓Ξ	Updated ↓⊞	Operation
stackSet_20240118_1436_fsmd db15166c-8efa-4639-83f0-bf4c6b3895b7	IDLE	SELF_MANAGED	-	Jan 18, 2024 15:09:25 GMT+08:00	Jan 18, 2024 15:09:25 GMT+08:00	Update Delete
stackSet_20240118_0942_bhfe #0d2224-385e-4ae3-8d55-8542aa2766c1	IDLE	SELF_MANAGED	-	Jan 18, 2024 09:43:18 GMT+08:00	Jan 18, 2024 09:43:18 GMT+08:00	Update Delete
stackSet_20231220_1559_onff 4a139b4-824b-4e43-b040-030291d9756c	IDLE	SELF_MANAGED	-	Dec 20, 2023 16:00:33 GMT+08:00	Dec 20, 2023 16:00:33 GMT+08:00	Update Delete

2. On the Stack Instance tab page, click Update in the upper right corner.

< stackSet_20240118_1436			t t	Jelete Update
Basic Information Stack Instance Operation Template				
Stack Instance (2)			Enter a stack name.	QC
Stack NamelD Status	Status Message	Domain ID	Region	Operation
StackSet_stackSet_20240116_1436_fsmd-66981179cff 9e8bb460-024e-4956-b1b3-e51372dc3ce1 0PERATION_COMPLETE	-	159680e3/5/c4553b7/30c780ceef245	en-nedh-4	Delete
StackSet-stackSet_20240118_1436_fsmd-aacdd63911 2db77517-96ac-4d3f-a9bd-ba0f4c01a8e4 OPERATION_COMPLETE	-	159680e3/5/c4553b7f30c780ceef245	cn-east-3	Delete

3. When selecting a template, you can select either of the creation modes as shown in the following figure.

< Deyloy Stack Se	¢		
 Select Template —— 	- 2 Configure Parameters	③ Deployment Setup	Continu Configurations
Select Template			
* Creation Mode	Current Template	Replace Current Template	
			Ned

Select **Current Template** or **Replace Current Template** (use a new template) to update the stack set.

Solution 1: Using the Current Template

- Click **Next**. On the displayed parameter configuration page, modify the parameters of the current template.
- Click **Next**. On the displayed page, enter the tenant ID and select a deployment region.
- Confirm the settings. Fill in correct parameters in previous steps and click **Deploy**.

Solution 2: Replacing the Current Template

For details, see section Creating a Stack Set.

4.5 Creating Stack Instances from a Stack Set

1. On the **Stack Set** page, click the name of the stack set in which you want to create a stack.

Stack Set						🕼 User Guide 🛛 🔾	reate Stack Set
Stack Set (3)						Enter a stack set name.	QC
Stack Set Name/ID	Status 7	Permission Model	Description	Created ↓Ξ	Updated J⊟	Operation	
stackSet_20240118_1436_fsmd db15168c-8efa-4839-8310-b44c6b3895b7	IDLE	SELF_MANAGED	-	Jan 18, 2024 15:09:25 GMT+08:00	Jan 18, 2024 15:09:25 GMT+08:00	Update Delete	
stackSet_20240118_0942_bhfe #0d2224-385e-4ae3-8d55-8542aa2766c1	IDLE	SELF_MANAGED	-	Jan 18, 2024 09:43:18 GMT+08:00	Jan 18, 2024 09:43:18 GMT+08:00	Update Delete	
stackSet_20231220_1559_onft 4a13f9b4-824b-4e43-b040-030291d9756c	IDLE	SELF_MANAGED		Dec 20, 2023 16:00:33 GMT+08:00	Dec 20, 2023 16:00:33 GMT+08:00	Update Delete	

2. On the Stack Instance tab page, click Add.

stackSet_20240118_1436 Basic Information Stack Instance Operation	on Template			De	iete Update
Stack Instance (2)				Enter a stack name.	QC
Stack NameID	Status	Status Message	Domain ID	Region	Operation
StackSet-stackSet_20240118_1436_famd-d098179cff 9e8bb400-024e-4058-b1b3-e51372dc3ce1	OPERATION_COMPLETE	-	159680e3/5/c4553b7/30c780ceef245	cn-north-4	Delote
StackSet-stackSet_20240118_1436_fsmd-aacdd63911 2db77517-96ac-4d3f-a8bd-ba0f4c01a8e4	OPERATION_COMPLETE	-	159680e3f5fc4553b7f30c788ceef245	cn-east-3	Delete

3. Go to the **Deploy Stack Instance** page (as shown in **Figure 4-6**) and enter the tenant ID and select a deployment region. Confirm the information and click **Next**.

Figure 4-6 Deploying a	stack	instance
------------------------	-------	----------

C Deyloy Stack Instance	
Deployment Setup ——— ② Confirm Configurations	
Deployment Setup	
Operatin ID Enter domainid, separated by English commas	
0.06,459	
* Deployment Regions	

4. Confirm the parameters, and click **Deploy**.

5. Wait until the creation is successful and view the result. The creation is successful after the operation is completed.

Stack Instance (3)				
Add			b	iler a stack name. Q
Stack Name/ID Status	Status Message	Domain ID	Region	Operation
StackSet-stackSet_20240118_1436_fsmd-7e7aaa94ef 73fdc784-3945-42a0-ac4e-aebbdb7333a0 OPERATION_COMPLET	TE -	159680e3/5/c4553b7/30c780ceef245	on-south-1	Delete
StackSet_stackSet_20240118_1436_fsmd.d8985179cff 9e8bb400-024e-4056-b1b3.e51372dc3ce1 OPERATION_COMPLET	ne -	159680x3f5fc4553b7f30c780cxef245	cn-north-4	Delete
StackSet-stackSet_20240118_1436_firmd-aacdd83911 2db77517-96ac-4d3f-a9bcba0f4c01a8e4 OPERATION_COMPLET		159680e3/5/c4553b7/50c780ceef245	cn-essi-3	Delete

4.6 Deleting Stack Instances from a Stack Set

1. On the **Stack Set** page, click the name of the stack set in which you want to create a stack.

Stack Set						S User Guide Create Stack Set
Stack Set (3)						Enter a stack set name. Q
Stack Set Name1D	Status 🖓	Permission Model	Description	Created J⊟	Updated JΞ	Operation
stackSet_20240118_1436_fsmd db15168c-8efa-4639-83f0-bM4c6b3895b7	IDLE	SELF_MANAGED	-	Jan 18, 2024 15:09:25 GMT+08:00	Jan 18, 2024 15:09:25 GMT+08:00	Update Delete
stackSet_20240118_0942_bhfe ft0d2224-385e-4ae3-8d55-8542aa2766c1	IDLE	SELF_MANAGED	-	Jan 18, 2024 09:43:18 GMT+08:00	Jan 18, 2024 09:43:18 GMT+08:00	Update Delete
stackSet_20231220_1559_ontl 4a13/9b4-824b-4e43-b040-030291d9756c	IDLE	SELF_MANAGED		Dec 20, 2023 16:00:33 GMT+08:00	Dec 20, 2023 16:00:33 GMT+08:00	Update Delete

2. On the stack instance page, select the stack to be deleted and click **Delete**.

< Bas	stackSet_20240118_1436 c Information Stack Instance Operati	ion Template			Del	ete Update
1	Nack Instance (3)				Enter a stack name.	QC
	Stack Name1D	Statux	Status Message	Domain ID	Region	Operation
	SlackSet-stackSet_20240118_1436_fsmd-7e7aaa94e5 7355r84-3945-42a0-a24e-aebb9b7333a0	OPERATION_COMPLETE	-	159680e3158v4553b7130v780veef245	cn-south-1	Delete
	StackSet-stackSet_20240110_1436_fsmd-d0900179c# 9e0bb400-024e-4050-b1b3-e51372dc3ce1	OPERATION_COMPLETE	-	15950e3f5fc4553b7f30c750ceef245	cn-north-4	Delete
	StackSet-stackSet_20240118_1438_famd-aacdd63011 2db77517-98ac-4d3t-a0bd-ba0Hc01a8e4	OPERATION_COMPLETE	-	159680e3158-4553b7130c780ceef245	cn-east-3	Delete

3. Click **OK** to delete the stack instance.

Delete Stack Instance								
Are you sure you want to delete stack instances?								
Stack Name/ID Status								
StackSet-stackSet_20240118_1436_fsmd-7e7aaa94e9fa97275c8a 73fdc784-3945-42a0-a24e-aebb9b7333a0								
OK Cancel								

4.7 Deleting a Stack Set

1. On the **Stack Set** page, click the name of the stack set in which you want to create a stack.

Stack Set						User Guide Create Stack Set
Stack Set (3)						Enter a stack set name. Q
Stack Set Name/ID	Status 🍞	Permission Model	Description	Created ↓≣	Updated ↓⊞	Operation
stackSet_20240118_1436_fsmd db15166c-8efa-4839-83f0-bf4c6b3895b7	IDLE	SELF_MANAGED	-	Jan 18, 2024 15:09:25 GMT+06:00	Jan 18, 2024 15:09:25 GMT+08:00	Update Delete
stackSet_20240118_0942_bhfe #0d22224-3858-4ax5-8d55-8542ax2768c1	IDLE	SELF_MANAGED	-	Jan 18, 2024 09:43:18 GMT+08:00	Jan 18, 2024 09:43:18 GMT+08:00	Update Delete
stackSet_20231220_1559_ontl 4a13f9b4-824b-4e43-b040-030291d9756c	IDLE	SELF_MANAGED		Dec 20, 2023 16:00:33 GMT+08:00	Dec 20, 2023 16:00:33 GMT+08:00	Update Delete

2. Go to the stack instance page and delete all stacks in the current stack set.

3. Empty stack instances in the current stack set.

C stackSet_02040118_042 Basic Information Stack Instance Operation Template			D	elete Update
Stack Instance (0)			Enter a stack name.	Q C
Stack Name1D Status Status Message	Domain	n ID	Region	Operation
	I) No data available.			

4. In the upper right corner, click **Delete** to delete the stack set. Enter **Delete** for confirmation. Wait until the stack set is deleted.

< stackSet_20240118_094	2							Delete Update
Basic Information Stack Insta	nce Operation Template		Delete Stack Set		×			
Stack Instance (0)			Are you sure you want to delete the caution when performing this operat	stack set? Cannot be ion.	restored after being deleted. Exercise			Enter a stack name. Q
			Stack Set Name	Status	Created			
Stack Name/ID	Status	Status Message	stackSet_20240115_0942_bhfe		Jan 18, 2024 09:43:18 GMT+08:00	- 1	Region	Operation
			No stack instance Type Delete in the box below to continue.					
			Criter Leese.	OK Can	sel			

5 Auditing

5.1 RFS Operations Supported by CTS

Cloud Trace Service (CTS) records all operations performed on cloud services, providing data support for customers in fault locating, resource management, and security auditing. When you enable CTS, it begins to record operations performed on RFS resources.

Operation	Description
createStack	Creating a stack
deployStack	Deploying a stack
deleteStack	Deleting a stack
updateStack	Updating a stack
parseTemplateVari ables	Parsing template variables
continueRollback- Stack	Continuing to roll back a stack
continuedeploySta ck	Continuing to deploy a stack
createExecution- Plan	Creating an execution plan
applyExecutionPla n	Executing an execution plan
deleteExecution- Plan	Deleting an execution plan
createTemplate	Creating a template

Table 5-1 RFS operations supported by CTS

Operation	Description
deleteTemplate	Deleting a template
updateTemplate	Updating a template
createTemplateVer sion	Creating a template version
deleteTemplateVer sion	Deleting a template version
useAgency	Recording user agency
createStackSet	Creating a stack set
deleteStackSet	Deleting a stack set
deployStackSet	Deploying a stack set
updateStackSet	Updating a stack set
createStackInstan- ces	Creating stack instances
deleteStackInstan- ces	Deleting stack instances
updateStackInstan ces	Updating stack instances

5.2 Viewing RFS Logs in CTS

When you enable CTS, it begins to record operations performed on RFS resources. On the CTS console, you can query operation records from the last 7 days by performing the following operations.

Procedure

- **Step 1** Log in to the CTS console.
- **Step 2** In the navigation pane, click **Trace List**.
- **Step 3** Filter the desired operation events.

The trace list supports four filter types:

• Trace Source, Resource Type, and Search By

Select the search criteria from the drop-down lists. For example, select **RFS** from the **Trace Source** drop-down list box.

From the **Search By** drop-down list, select a trace name. From the **Search By** drop-down list, select or enter a specific resource ID. From the **Search By** drop-down list, select or enter a specific resource name.

• Trace Status: Select one of All trace statuses, Normal, Warning, and Incident.

- **Operator**: Select a specific operator (a user other than an account).
- **Time Range**: You can query traces generated during any time range of the last seven days.

Step 4 Click \checkmark on the left of a trace to expand its details.

Step 5 Click **View Trace** in the **Operation** column. A dialog box is displayed to show trace structure details.

```
{
 "trace_id": "4073d5e1-6ee6-11ed-bb00-61c31199dcbc",
 "code": "200",
 "trace_name": "parseTemplateVariables",
 "resource_type": "template",
 "trace_rating": "normal",
"source_ip": "10.172.131.218",
"trace_type": "ApiCall",
 "service_type": "RFS",
"event_type": "system",
"project_id": "47cf611e636c4a73806e2731cc7fa471",
 "response": "{\"variables\":[{\"default\":\"jiayue_test_ecs\",\"description\":\"Your ECS name\",\"name
\":\"ecs_name\",\"type\":\"\\\"string\\\"\"}]}",
"resource_id": "",
 "tracker_name": "system",
 "time": "2022/11/28 14:31:12 GMT+08:00",
 "resource_name": "",
 "user": {
   "domain": {
    "name": "iaas_aos_n30000772_01",
    "id": "fcca06b017704dfcb36dcf1b2a29d151"
   },
  "name": "cto_c30031067_dev",
"id": "155ad09309994f92a5147529aa0ceb2f"
 },
  "record_time": "2022/11/28 14:31:12 GMT+08:00"
}
```

----End

6 IAM Agency

By creating an agency, you can share your resources with another account, or delegate an individual or team to manage your resources. You do not need to share your security credentials (the password and access keys) with the delegated party. Instead, the delegated party can log in with its own account credentials and then switches the role to your account and manage your resources.

With RFS, you can create a stack to bind an agency with a provider and update the binding relationship by updating the stack.

RFS uses an agency only in resource operation requests, such as creating a stack (triggering deployment), creating an execution plan, deploying a stack, and deleting a stack. The agency applies only to resource operations performed by the bound provider. If the permissions provided by the agency are insufficient, resource operations may fail.

Procedure

- 1. Log in to the IAM console.
- 2. On the IAM console, choose **Agencies** from the navigation pane on the left, and click **Create Agency** in the upper right corner.

IAM	Agencies ⑦						+ Create Agency
Users	Agencies available for creativ	on: 1		All	٣	Enter an agency name.	Q
User Groups	Agency Name/ID ↓Ξ	Delegated ↓Ξ	Validity Per 🚛	Created 🚛	Description 1	Operation	
Permissions v Projects	agency244	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize Modify Delete	
Agencies	agency243	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize Modify Delete	
identity Providers Security Settings	agency242	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize Modify Delete	

Figure 6-1 Creating an agency

3. Enter an agency name. Set **Cloud Service** to **RFS**.

Agencies / Create Agen	су
* Agency Name	
★ Agency Type	 Account Delegate another HUAWEI CLOUD account to perform operations on your resources. Cloud service Delegate a cloud service to access your resources in other cloud services.
* Cloud Service	RFS •
* Validity Period	Unlimited
Description	Enter a brief description.
	0/255 Next Cancel

feacies I if adult that

1444

The agency name is user-defined.

If **op_svc_iac** has been used for registration, you are advised to change it to **RFS**.

4. Click **Next**. The **Authorize Agency** page is displayed. You can grant permissions to the agency on this page.

Figure 6-3 Agency authorization

Users	Basic Information Permissions							
User Groups	Authorize Dolois Authorizati	ion records (UAM projects): 1; (enterprise projects): 0			Agency name: rf_admin_1 0 Search by policy/role name.	Q By IAM Project	By Enterprise Project	
Permissions •	Policy/Role	Policy Role Description	Project [Region]	Principal	Principal Description	Principal Type	Operation	
Figen	Tenant Administrator	Tenant Administrator (Exclude IAM)	All resources (Existing and future projects)	rf_admin_trust	-	Agency	Delete	
Identity Providens								
Security Settings								

5. Filter specific permissions and grant them to the agency.

Figure 6-4 Selecting policies

	Authorize Agency					
2etect PaircyRele 2 Setect Scope (2) Fatech (2) Setect Scope (3) Fatech						
	Assign selected permissions to rf_admin_trust.	Create Policy				
	View Selected (0) Copy Permissions from Another Project	All policiesholes				
	Policy/Role Name	Туре				
	Cisa Steart Admin Cisad Steart Service Teniart Administrator, can manage multiple CS users	System defined role				
	Ciola Stream User	System-defined role				
	ClouPpetine Treat Edension Full-coses Full permissions for the ClouPpetine Terrard Edensions	System-defined policy				
	ClouPipeline Terrort Pipeline Temptates FullAccess Full permissions for the ClouPipeline Terroritotes	System-defined policy				
	Clouffpatine Tenant Rule Templater Full-Scess Full permissions for the Clouff-Patient Rule Templates	System-defined policy				
	ClouPpoine Tenart Rules Full-scess Full permissions for the ClouPPpoine Tenart Rules	System-defined policy				
	CRE AdministratoAccess Costa Model Engine tensist administrator with ful permissions	System-defined policy				
	Tesarl Administrator Tesarl Administrator	System-defined role				
	Tetant Guest Tetant Guest (Scrude 144)	System-defined role				
	Utortspace ReartManager Tenant administrator permissions for Workspace	System-defined policy				

You can determine the permissions to be granted to an agency. Huawei Cloud best practices do not advise you to automatically create agencies with the Tenant Administrator permission for users. The best practice is to grant management permissions (including read and write operations) to resources that may be used in a stack.

6. Set the authorization scope. You can select **All resources** or **Region-specific projects**.

Figure 6-5 Authorization scope

	(Authorize Agency			
(1) Select PolicyRole ——— (2) Select Scope ——— (3) Finish				
	1 The following are recommended scopes for the permissions you selected. Select the desired scope requiring minimum authorization.	Х		
	Scope			
	Aresouses			
- WAI users will be able to use all resources, including those in enlergoine projects, region-specific projects, and global services under your account based on assigned permissions.				
	⊖ Region-specific projects ⊗			
	○ Global services Ø			
	Stor Les			

7. Click **OK**. The agency is created.

Figure 6-6

Authorize Agency						
(1) Select PolypRole						
The following are recommended scopes for the permissions you selected. Select the desired scope requiring minimum author/cution.			×			
Scope						
All resources						
Representation of the second provided of the resources in the region specific projects you select.						
Total projects: 30. Salect the desired projects.		Enter a project name or description.	Q			
Project (Region) JE	Description					
	-					
	-					
	-					
	-					
	-					
	-					
	-					
	-					
	-					
	-					
10 - Total Records: 30 < 12 2 3 >						
○ Gible services ₫						
Show Less						