

# **Resource Formation Service**

# **User Guide**

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# **Contents**

1 Service Overview	1
1.1 Basic Concepts	1
1.2 What Is RFS?	2
1.3 Advantages	3
1.4 Application Scenarios	3
1.5 Constraints and Limitations	5
1.6 Supported Provider Versions	7
2 Getting Started	9
2.1 Accessing Resource Formation Service (RFS)	9
2.2 Viewing the Stack Status	9
2.3 Creating a Stack	10
2.4 Querying a Stack	17
2.5 Updating a Template or Parameter	18
2.6 Creating an Execution Plan	20
2.7 Viewing Estimated Fees	21
2.8 Deleting a Stack	22
2.9 Viewing Stack Details	23
3 Visual Designer	. 26
3.1 Introduction	26
3.2 Visual Designer UI	27
3.3 Cloud Services or Elements	28
3.4 Shortcut Keys of Visual Designer	32
3.5 Compiling a Template to Create an EVS Disk	32
4 Managing a Stack	. 37
5 Auditing	39
5.1 RFS Operations Supported by CTS	39
5.2 Viewing RFS Logs in CTS	40
6 FAQs	42
6.1 How Will I Be Charged for Using RFS?	42
6.2 How Can I Update a Stack?	42

6.3 What Are the Differences Between Creating an Execution Plan, Creating a Stack, and Updating a Stack?	42
7 IAM Agency	.44
A Change History	. 48

# Service Overview

- 1.1 Basic Concepts
- 1.2 What Is RFS?
- 1.3 Advantages
- **1.4 Application Scenarios**
- 1.5 Constraints and Limitations
- 1.6 Supported Provider Versions

# **1.1 Basic Concepts**

Concept	Description
Resource	A cloud service may have multiple types of resources, such as VPCs, VMs, microservice applications, or high-level data models like security policies and DNS records.
Template	A template is a text file written using HCL syntax and describes your cloud resources. Its format can be tf, tf.json, or zip. RFS creates cloud resources based on templates.
Stack	A stack is a collection of cloud service resources. It creates, deletes, updates, and queries all cloud service resources described in a template as a whole.

Concept	Description
Execution plan	An execution plan provides a preview of stack changes. It displays the comparison between the current template and online resources, and clearly shows the operations (such as addition, modification, and deletion) to be performed on resources and attributes during resource formation. Before executing a plan, you can preview it to check whether it meets your expectation. During execution, RFS creates and modifies resources as defined in the template.

### 1.2 What Is RFS?

Resource Formation Service (RFS) is a new final-state orchestration engine from AOS and fully supports Terraform (HCL and Provider), which is a de facto standard. It manages system and service resources (all physical or logical entities that can be located and described, such as databases, VPCs, pipelines, and IAM roles). RFS automatically deploys specified cloud service resources based on the template which uses the HCL (an open ecosystem) syntax.

RFS focuses on automatically building Cloud resources in batches. It helps you create, manage, and upgrade required resources in an efficient, secure, and consistent manner, improving resource management efficiency and reducing security risks caused by resource management changes.



#### **Product architecture**

# **1.3 Advantages**

**Declarative:** You only need to intuitively describe the final state of required resources, freeing you from the complex request process and simplifying resource management.

**Idempotent:** The idempotent effect of invoking the resource description code for multiple times ensures that resources are not repeatedly applied for.

**Secure and reliable:** Visualized audit, security, and compliance control policies prevent security risks caused by resource changes.

**Rich ecosystem:** The southbound ecosystem supports mainstream Cloud services (90+ cloud services, 540+ resource objects). For details, see **Provider**. The northbound ecosystem is fully compatible with the HCL syntax, eliminating a learning curve.

**Easy to use:** Wizard-based operations, comprehensive documentation, and sample auxiliary system help you to manage resources in five steps.

**Full hosting and cloud-based services:** You do not need to install any software, prepare executors, or manage underlying files and data.

**Automatic rollback:** If deployment fails for resources, RFS automatically returns the status of all resources to that of the previous successful deployment.

# **1.4 Application Scenarios**

#### Migrating Applications to the Cloud

#### Description

Migrating applications to the cloud involves repetitive manual work, such as the destruction and rebuild of environments and configuring new instances one by one when scaling out applications. These manual operations are error-prone.

Some operations, such as creating databases or VMs, could be time-consuming. You may have to wait for a long time when these demanding operations need to be performed one by one.

#### Solution

RFS implements tool-based and process-based work for the preceding scenarios. It uses templates to describe resources required by applications in a unified manner. The stack management function enables automatic deployment or destruction for various resources. RFS allows you to define a large number of resource instances of different services and specifications in a template. You can also use RFS to realize automatic creation, quick deployment, and flexible configuration of resources.

#### Advantages

Easy to use

Design your applications and schedule resources by writing templates. Organize and manage the service easily and efficiently.

#### • Highly efficient

Automatically deploy or delete a template with a wizard to reduce repetitive work and manual misoperations.

#### • Quick replication of applications

Replicate a template to automatically deploy the same applications and resources to different data centers, improving efficiency.

Figure 1-1 Migrating applications to the cloud



#### **ISV Resource Provisioning**

#### Description

Independent software vendors (ISVs) need to deploy resources required by software on the cloud for their customers to use. The traditional delivery method is that ISVs provide the software code and platform building guides on their official websites for customers to download. This could be time demanding and costly, because ISVs have to configure networks, deliver resources, and deploy software all on themselves.

#### Solution

RFS enables ISVs to deliver software and required resources in a standard manner. ISVs can convert software services to templates. The stack deployment capability of RFS enables quick service provisioning and streamlines the delivery process. RFS uses a code template to describe the entire delivery environment, facilitating ISVs to integrate delivery with the CI/CD process.

#### Advantages

#### • Standardized delivery

Templates and stacks standardize software delivery processes, which can be summarized into best practices for wider use.

#### • Better efficiency

Templates are used to automatically provision resources. ISVs only need to deploy stacks to complete service delivery, improving delivery efficiency.

#### • Error-proof creation

ISV software and resources required for the software are defined in a template to prevent mistakes introduced through manual work.

#### • CI/CD integration

RFS can be integrated into the existing tool chain to improve automation.





# **1.5 Constraints and Limitations**

#### Permissions

To use RFS, create an agency.

#### Quotas

RFS limits the number of stacks for a single user, as shown in the following table.

Res our ce	Item	Quota
Te mpl ate	Maximum number of templates that can be created by a Cloud account	100
	Maximum length of a template name	128 characters
	Maximum length of a template file name	255 bytes
	Maximum length of a template URL	2048 bytes
	Maximum size of the file pointed to by the <b>template_uri</b> used in APIs for creating a template or a template version	1 MB after decompression
	Maximum size of the file containing <b>template_body</b> used in APIs for creating a template or template version	50 KB
Sta ck	Maximum number of stacks that can be created by a Cloud account	100
	Timeout interval for creating a stack	6 hours
	Maximum length of a stack name	128 characters
Exe cuti	Maximum length of an execution plan name	255 bytes
on pla n	Maximum number of execution plans that can be created in each stack	100
Sta ck set	Maximum number of stack sets that can be created by a Cloud account	100

Res our ce	Item	Quota
	Maximum number of stack instances that can be created in each stack set	100
	Maximum run time of a stack set operation	6 hours

# **1.6 Supported Provider Versions**

A Provider is a plug-in that encapsulates various resource APIs (such as CRUD APIs of resources) for the resource formation engine to call.

The following table lists the Provider types and versions supported by RFS.

Туре	Introduction	Version	Number of Supporte d Services	Number of Supporte d Resources
terraform-provider-	Users can use HuaweiCloud Provider	1.63.0	94	541
nuaweicloud	to interact with various resources on Cloud. Before using the provider,	1.61.1	94	525
	configure the corresponding permissions.	1.59.1	92	474
		1.58.0	92	461
		1.57.0	91	426
		1.56.0	91	413
		1.54.1	88	388
		1.52.0	87	367
		1.50.0	86	350
		1.49.0	83	346
		1.48.0	82	324
	1.47.1	82	296	
		1.46.0	83	282
		1.44.1	80	270
		1.43.0	71	252

Туре	Introduction	Version	Number of Supporte d Services	Number of Supporte d Resources
		1.42.0	68	236
		1.41.0	63	225
		1.40.2	63	225
		1.40.1	63	225
		1.40.0	63	225
		1.39.0	63	221
		1.38.2	33	117
		1.38.1	33	117

# **2** Getting Started

- 2.1 Accessing Resource Formation Service (RFS)
- 2.2 Viewing the Stack Status
- 2.3 Creating a Stack
- 2.4 Querying a Stack
- 2.5 Updating a Template or Parameter
- 2.6 Creating an Execution Plan
- 2.7 Viewing Estimated Fees
- 2.8 Deleting a Stack
- 2.9 Viewing Stack Details

### 2.1 Accessing Resource Formation Service (RFS)

1. Log in to the console

choose Service List > Management & Governance > Resource Formation Service.

### 2.2 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.

Status	Description
Creation Complete	The stack has been created but not 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 2-1
 Stack statuses

Table 2-2 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 deployed.
Applied	The execution plan has been deployed.

# 2.3 Creating a Stack

On the stack list page, click **Create Stack** in the upper right corner, as shown in **Figure 2-1**.

#### Figure 2-1 Creating a stack

Stacks ③					😥 User Guide	Create Stack
				Search by stack n	ame by default.	QC
Stack Name	Status 🏹	Description	Created JF	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 GMT+08:00	Delete Update	

#### Procedure:

1. Select a template.

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

#### Figure 2-2 Selecting a template



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.my-kualalumpur-1.myhuaweicloud.com"
  }
  insecure = true
  region = "my-kualalumpur-1"
  auth_url = "https://iam.my-kualalumpur-1.myhuaweicloud.com:31943/v3"
}
 variable "vpc_name" {
  type
           = string
  description = "vpc name"
  default = "rf_teststack_vpc"
  sensitive = true
  nullable = false
}
 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" {
          = string
  type
  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" {
 name
          = var.subnet 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" {
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."
}
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.my-kualalumpur-1.myhuaweicloud.com"
      },
      "insecure": true,
      "region": "my-kualalumpur-1",
      "auth_url": "https://iam.my-kualalumpur-1.myhuaweicloud.com:31943/v3"
    }
   },
   "variable": {
     "vpc_name": {
      "type": "string",
      "description": "vpc name",
      "default": "rf_teststack_vpc",
      "sensitive": true,
      "nullable": false
   },
"subnet_name": {
"'' "string",
     "type": "string",
"description": "subnet name",
      "default": "rf_teststack_subnet"
   },
"ecs_name": {
______strin
      "type": "string",
      "description": "ecs name",
      "default": "rf_teststack_ecs"
    },
     "ecs_admin_passwd": {
      "type": "string",
"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": "${huaweicloud_vpc.rf_doc_vpc.id}",
     "cidr": "192.168.1.0/24",
      "gateway_ip": "192.168.1.1"
   }
  },
   "huaweicloud_compute_instance": {
    "rf_doc_ecs": {
     "name": "${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": "${huaweicloud_compute_instance.rf_doc_ecs.access_ip_v4}",
    "description": "The ecs private address."
  },
   "ecs_id": {
    "value": "${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.

The 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 parameter configuration page, where you can modify the stack name and description, as shown in **Figure 2-3**.

#### 

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 1024 characters.

#### Figure 2-3 Configuring parameters

< treate Stack					
🔿 Natari Tamatata 🦲 💿 Dantaara Para	mahara				
The start for an and the start is a start and the start and the start is a start and the start and the start is a start and the					
Center a description of the stat.	Anternational Province and				
Configure Parameters					
Paramotor	Watco	Table	Description		
- variations	PLANTING, VIS	and the second sec	Abril Millione		
subrat_name	PL_Initiation_initiation	whereas a	NAME OF A DECEMBER OF		
***_n****	rf_beststack_acca	obring	ALC STREAM		
and another particular		a de terrar	Mark Branchover		

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

If a value is invalid, the corresponding text box will turn red (as shown in **Figure 2-4**) and page redirection will not be triggered after you click **Next**.

#### Figure 2-4 Text box with an invalid value

Parameter	Value
* vpc_name	

Click Next. The Configure Stack page is displayed.

#### **▲** CAUTION

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 2-5.

#### Figure 2-5 Configuring the stack

D course Transmiss	Contana Dunantur	O Contanto Charle	
	(a) company random r	Cumpan and	(a) cannin companion
* Agency	husweidloud +	rf_admin_trust	c
	An agency can clearly define RFS's	s operation permissions (such as cre	vation, 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 rolls back to t	re previous successful resource status when the operation fails. After the stack is created, you can modify the stack configurations on its details page.
Detetion Protection	Deletion protection prevent	Its the stack from being deleted accide	etaily. You can modify it on the stack details page.

Mandatory parameter (marked with \*)

**IAM Permission 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**: If auto-rollback is enabled, the stack automatically rolls back to the previous successful resource status when an operation fails.

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 2-6 Directly deploy stack



Click **Yes**. A new stack is generated and its status is **Deployment In Progress**, as shown in **Figure 2-7**.

#### Figure 2-7 Deployment in progress

St	acks ⑦						🕼 User Guide	Create Stack
						Search by stack name by defau	IL.	QC
	Stack Name	Status 🖓	Description	Created 4F	Updated ↓≣	0	peration	
	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 GM	F+08:00 D	elete   Update	

Then, the status changes to **Deployment Complete**, as shown in **Figure 2-8**.

#### Figure 2-8 Deployment complete

Stacks ③						😥 User Guide	Create Stack
					Search by stack name by defaul		QC
Stack Name	Status 🖓	Description	Created JF	Updated ↓≣	Op	eration	
stack_20230210_1048_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	Deployment Complete		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 GP	IT+08.00 De	lete   Update	

b. If you click **Create Execution Plan**, a dialog box of creating execution plan will be displayed. In this dialog box, you can set the name and description of the execution plan, as shown in **Figure 2-9**.

Figure 2-9 Create Execution Plan dialog box



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 2-10**.

Figure 2-10 Available



Return to the stack list page. The stack status is **Creation Complete**, as shown in **Figure 2-11**.

Figure 2-11 Stack list

Stacks ③					(SP User Guide	Create Stack
				Search by st	lack name by default.	QC
Slack Name	Status 🐨	Description	Created 4F	Updated 48	Operation	
stack_20230210_1046_f2mc 920194b1-9bb0-44c5-0150-5e30a057e532	Deployment Complete		2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 GMT+08:00	Delete   Update	
stack_20230110_1734_1781 231b6bfe-30a3-463a-b8cc-209461ecf824	Deployment Complete	-	2023/01/10 17:34:00 GMT+08:00	2023/01/10 17:34:55 GMT+08:00	Delete   Update	

#### 

**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 execute 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 2-12**.

**Figure 2-12** Execution plan dialog box



In the **Execution Plan** dialog box, click **Execute**. A message indicating that the execution plan is being deployed is displayed in the upper right corner. Return to the stack list page. A new stack is generated and its status is **Deployment In Progress**, as shown in **Figure 2-13**.

#### Figure 2-13 Deployment in progress

Stacks ⑦						🗗 User Guide	Create Stack
					Search by stack name by default.		QC
Stack Name	Status 🖓	Description	Created JF	Updated J≣	Operation	n	
stack_20230210_1046_f2mc 9201940f-9bb0-44c5-8150-5e30e067e532	Deployment in Progress	14	2023/02/10 10:47:01 GMT+08:00	2023/02/10 10.47.02 G	MT+08.00 Delete U	Jpdate	

Then, the stack status changes to **Deployment Complete**, as shown in **Figure 2-14**.

Figure 2-14 Deployment complete

Stac	(S 🗇						🕼 User Guide	Create Stack
						Search by slack name by defa	auf.	QC
5	tack Name	Status 🖓	Description	Created 4F	Updated ↓≣		Operation	
s 9	ack_20230210_1046_f2mc 20194b19bb0-44c5-8150-5e30a067e532	Deployment Complete	-	2023/02/10 10:47:01 GMT+08:00	2023/02/10 10:48:31 GN	IT+08:00	Delete   Update	

On the **Execution Plans** tab page of the stack details page, the execution plan status is **Applied**, as shown in **Figure 2-15**.

#### Figure 2-15 Applied

< Basi	stack_20230210_1046_f2	nts Template Execution Plans			Delete	te Template/Parameter
	Deploy				Enter a keyword.	QC
	Execution Plan Name/ID	Status	Estimated Price (1)	Created	Description	Operation
	executionPlan_20230210_1050_1925 cd002w8-242c-46a6-a7dc-481327312d93	Appled		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 2-16**.

#### Figure 2-16 Resources deployed

Torus and	Toold MP				
statements in the in contracts	h-mp	Analy respected restories success.			
20222000100100100100000000000000000000		August constraints Productions. A strainty of constraint, or constraints.			
mentioners at he to contrade		Insurant control of the second s	NUMBER OF STREET	100 0 100 100 100 1 100 100 100 100 100	
PRESENTE TO AN TO DOTTING IN	COMPANY OF PERSONNEL	NAMES AND ADDRESS AND ADDRESS AND ADDRESS AND ADDRESS ADDR	and the second sec		
343346410 11.34.60 OHT-08.00	Consultant in Programm	house and house consistence and house and house and house and	No. of Concession, and the second sec		
AND DESCRIPTION OF THE ADDRESS OF THE OWNER.	Freedom of Pressen	Name and the second sec	and the second s		
20222000000000000000000000000000000000	CONTRACTOR OF PERSON AND	ACTIVATION CONTRACTOR ACTIVATION ACTIVATION ACTIVATION ACTIVATION	10-11-10-1 10-11-10-1		
International International Construction	Constant to Congress	Summarished, comparing publication statistical Will complete (Will compared)	1000 million		
20222-0000-000-000-000-000-000-000-000-	STREET, ST PTIMPERS	NAMES AND ADDRESS AND ADDRESS AND ADDRESS ADDRE	And the second s		
3833-98-10 11-35-10 Only-08-88	Constitute in Programm	In an address of the second seco	NAMES OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTIONO		
THE TOTAL PRODUCTION AND IN THE PROPERTY OF TH					

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 2-17**.

#### Figure 2-17 ECS

Eli	stic C	loud Server ①						P Troubleshooting	d ECS News	Quick Links	Buy ECS
	Star	t Stop Reset Password	More +							c 🛛 🖬	88 =
	Searc	th by Name by default.									ΘQ
		Name/ID	Monitoring	AZ 🖓	Status 🖓	Specifications/Image	IP Address	Billing Mode 🐨	Tag	Operation	
		rf_bedstack_ecc1 ec0ee4bf-3116-47a3-96f6-9d549b	۲	AZ3	8 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.

### 2.4 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 2-18**.

Figure 2-18 Querying a stack

acka 💮							
					stack_20230210_1046_f2mc		× Q C
Stack Name	Status 🔽	Description	Created 4F	Updated J≣	Operati	on	
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 Gh	IT+08:00 Delete	Update	
	Stack Name rtsr., 2022021 (9, 1045, 50% 920194049400-4445-4150-5430300775522	Stack Name         Status         V           stack, 20202010, 1048, Dmc         Deptoyment Complete         B201546474800-44c5-4150-562         Deptoyment Complete	Stack Name         Status ▼         Description           stack, 20202010_1064_Dom         Deployment Complete         -           status, 20202010_1064_Dom         Deployment Complete         -	Status         V         Description         Created         27           status         V         Description         Created         27           status         2020210.1048.0mm         Complete         -         2023/007/010477-01 0MT-08 00	Status         Total         Description         Created         JF         Updated         JE           stack_20032010_1048_00m         Description         Created         JF         Updated         JE           stack_20032010_1048_00m         Description         Created         JF         Updated         JE           stack_20032010_1048_00m         Description          2023.02/10 18 47 70 0MT-08.00         2023.02/10 18 57 21 0M	Name         Status 𝔅         Description         Created jr         Updated jr         Operating to the status of	Name         Status V         Description         Created JF         Updated JE         Operation           stack_20202010_1046_00m         Description         Created JF         Updated JE         Operation           stack_20202010_1046_00m         Description         Created JF         Updated JE         Operation

# 2.5 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 resource stack, as shown in **Figure 2-19**.

Figure 2-19 Selecting a template

< Update Template	/Parame		
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 2-20**.

Figure 2-20 Configuring parameters

<	K Update Template/Parame								
1	Select Template (2) Configure Parameters (3) Configurations								
(	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 s	tack_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 2-21**.

< Update Tem	Update Template/Parame							
(1) Select Template	Configure Param	eters (3) Confirm Configurations						
* Stack Name	stack_20230210_1046_f2mc							
The stack name must start with a letter and can contain a maximum of 128 characters, including letters, digits, underscores (), and hyphens (-). The stack name must be unique. The stack name must be unique.								
Description	Description Enter a description of the stack.							
		0/255						
Configure	Parameters							
Enter a keyword		Q Encrypt some resources base	d on the template requirements.					
Parameter		/alue	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_pas	sswd		string	ecs passwd				

Click Directly Deploy Stack. The Events page is displayed.
 The status changes to Update Complete, as shown in Figure 2-22.

#### Figure 2-22 Update complete

< stack_20230210_1046_f2 Doints Updats Samplats/Parameter G							
Basic Information Resources Outputs <u>Events</u> Temptate Execution Plans							
				Enter a keyword. Q			
Time J⊞	Туре	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	huaveicloud_compute_instance ecs-tiboa1: Modifications complete after 2s [id=ec0ee4t6-3116-47a3-665-96548t656a342]	ecs-tboat ECS	ec0ee4bf-3116-47a3-96/6-9d549b56a342			
2023/02/10 10:57:16 GMT+08:00	Update in Progress	huaweicloud_compute_instance.ecs-tboa1: Modflying(id=ec0ee4bf-3116-47a3-9695-9d54t655a342)	ecs-tboat ECS	ec0ee4bf-3116-47a3-96/6-9d549b56a342			
2023/02/10 10:57:16 GMT+08:00	Update Complete	huaweicloud_upc_subnet.upc-subnet.up0pp. Modifications complete after 1s [id=c35c3e47-8821-4164-916c-9455773e082]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-918c-9455713e06f2			
2023/02/10 10:57:15 GMT+08:00	Update In Progress	huaweicloud_ypc_subnet.vpc-subnet.ug0pp: Modflying[id=c35c3e47-6821-4164-916c-9455773e0682]	vpc-subnet-ug0pp Subnet	c35c3e47-6821-41d4-916c-9455713e06f2			
2023/02/10 10:57:15 GMT+08:00	Update Complete	huaweicloud_ypc.ypc.ght/lw: Modifications complete after 1s [jd=36375627-890f-40e7-6be8-b5af6448c674]	vpc-ghhfw VPC	36375627-9901-40e7-9be8-b5at8448c674			
2023/02/10 10:57:14 GMT+08:00	Update in Progress	huaweicloud_vpc.vpc.ght/fw: ModIlying[jd+36375627-990f-40e7-9ba8-b5a8448c674]	vpc-ghhfw VPC	36375627-9901-40e7-9be8-b5at8448c674			
2023/02/10 10:57:12 GMT+08:00	LOG	Creating required resource now		-			
2023/02/10 10:48:31 GMT+08:00	L06	Apply required resource success.		-			

Solution 2: Replacing the current template (see Creating a Stack)

### 2.6 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 2-23**.

Figure 2-23	Page	for	creating	an	execution	plan

< │ Update Template/Parame…							
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 2-24**.

#### Figure 2-24 Execution plan list

<   Basi	< stack_20232216_1046_f2 Deate Update Template Execution Plans Deate Update Template Execution Plans Deate Update Template Execution Plans							
	Deploy				Enter a keyword.	QC		
	Execution Plan Name/ID	Status	Estimated Price ③	Created	Description	Operation		
	executionPlan_20230210_1111_y19l 18354ec4-1137-4608-9bb9-32a32d0d2992	Available	View Details	2023/02/10 11:11:02 GMT+08:00	-	Delete Deploy		
	executionPlan_20230210_1110_7hqf 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 deploy tour execution plan.

×

If an execution plan is no longer used, click **Delete** in the **Operation** column. Click **OK** in the dialog box displayed, as shown in **Figure 2-25**.

Figure 2-25	Deleting an	execution p	olan
-------------	-------------	-------------	------

# 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 GMT+08... Image: Colspan="2">OK Cancel

# 2.7 Viewing Estimated Fees

On page of the created execution plan , click **View Details**. The **Price Details** dialog box is displayed and you can see the estimated price.

 Table 2-3 lists the resources that support price inquiry.

Cloud Service	Resource Type	Billing Mode
Elastic Cloud Server (ECS)	huaweicloud_compute_in stance	pay-per-use
Elastic Volume Service (EVS)	huaweicloud_evs_volume	pay-per-use
Elastic IP (EIP)	huaweicloud_vpc_eip	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	pay-per-use
Cloud Container Engine (CCE)	huaweicloud_cce_cluster	pay-per-use

Table 2-3 Cloud services/Resources that support price inquiry and billing modes

Cloud Service	Resource Type	Billing Mode
Cloud Search Service (CSS)	huaweicloud_css_cluster	Pay-per-use
GaussDB(for Redis)	huaweicloud_gaussdb_re dis_instance	pay-per-use
GaussDB(for MySQL)	huaweicloud_gaussdb_my sql_instance	pay-per-use
Scalable File Service (SFS)	huaweicloud_sfs_turbo	Pay-per-use
Distributed Cache Service (DCS)	huaweicloud_dcs_instanc e	pay-per-use
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 2-26**.

#### Figure 2-26 Execution plan details

< stack_20230210_1046_f2	stack_202	230210_1046_f2mc		x
Basic Information Resources Outputs Events Template Execution Plans	Basic Infor	rmation		
Deploy	Execution Pla	an Name executionPlan_20230210_10	0_1925	
Execution Plan Name10         Status           executionPlan_20230210_1050_1925         Applied           c0002eff.202-458_a76c-481327312693         Applied	Estimated Price () Description Cireated Status	an ID c4002eff-242c-46a8-a7dc-481  2023/02/10 10:50:42 GMT+0E Applied	3273 12d93 00	
	Addract Change His	Resource modified: 3		C
	Ори	eratio Mode Modify RESOURCE	Resource Name ecs-1boa1	Chere a keymou. Q
	× 1	Modify RESOURCE	vpc-ghhfw	huarweicloud_vpc
	× 🗖	Modify RESOURCE	vpc-subnet-ug0pp	huaweicloud_vpc_subnet

# 2.8 Deleting a Stack

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

On the stack list page, locate the created stack and click **Delete** in the **Operation** column. In the dialog box displayed, 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 2-27**.

Figure 2-27 Dialog b	oox for deleting	a stack
----------------------	------------------	---------

Stacks ⑦					(🖗 User Guid	Create Stack
	Delete Stack		×	Seat	rch by stack name by default.	QC
Stack Name	Are you sure you want to delete the	stack and resources in the stack? Stack and resource	cannot	Updated JΞ	Operation	
stack_20230210_1046_f2mc 920194bf-9bb0-44c5-8150-5e30a067e532	be restored after being deleted. Exe Stack Name	Status Created	- 1	2023/02/10 10:57:21 GMT+08:	00 Delete   Update	
stack_20230110_1734_178I 231b6bfs-38s3-463a-b8cc-209461ecf824	stack_20230210_1046_f2mc Enter Delete to delete the stack and	Deployment 2023/02/10 10:47:01 GMT+ d resources.	38:00	2023/01/10 17:34:55 GMT+08:	00 Delete   Update	
stack_20230109_0928_q41d 7e1a2e7c-1e54-45b2-e73a-7d6b8b8a7acb	Enter Delete.	OK Cancel	-	2023/01/09 09:57:25 GMT+08:0	00 Delete   Update	
stack_20230103_0951_xpkm 36f7a35f-42a5-4ce7-a2c7-d7eb6f372ac1	waging more wempione			2023/01/03 09:57:42 GMT+08:	00 Delete Update	
stack_20221229_1622_7r0q 0d3964ac-80e2-4921-b731-749411d45aeb	Deployment Complete	2022/12/29 16:22:29 GM	+08:00	2022/12/29 16:23:02 GMT+08:	00 Delete   Update	

2. When Deletion Protection is enabled:

Figure 2-28 shows that the Enabled status of Deletion Protection.

#### Figure 2-28 Deletion protection

< stack_20230214_0	960_w2l3	Delete	Ipdate Template/Parameter	С
Basic Information Resou	rces Outputs Events Template Execution Plans			
Basic Information				🖉 Edit
Stack Name	stack_20230214_0950_v2/3			
Stack ID	7911567e-64214807-0247-598666076e71a 🗇			
Status	Creation Complete			
Description				
IAM Permission Agency ③	(Provider) huaweicloud, (Agency) rf_admin_trust			
Auto-Rollback	Disabled			
Deletion Protection	Enabled			
Created	2023/02/14 09:50:39 GMT+08:00			
Updated	2023/02/14 09:50:39 GMT+08:00			

If you delete a resource stack with deletion protection enabled, an error message will be displayed, as shown in **Figure 2-29**.

#### Figure 2-29 Deletion failed

 Delete stack failed. Stack [stack\_20230214\_0950\_w2l3] × cannot be deleted while the deletion protection is enabled.

# 2.9 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 2-30 Basic information

< stack_20230210_ Basic Information Reso	Delete Update Template Parameter C	
Basic Information		🖉 Edit
Stack Name	stack_20230210_1046_02mc	
Stack ID	\$20194b1-9b0-44c5-8150-5603b007e532	
Status	Deployment Complete	
Description	·	
IAM Permission Agency ③	(Provider) husweicloud, (Agency) nf_admin_trust	
Auto-Roliback	Disabled	
Deletion Protection	Disabled	
Created	2023/02/10 10:47:01 GMT+05:00	
Updated	2023/02/10 16:57:12 GMT+08:00	

b. **Resources**: displays information about cloud services or resources generated during plan execution and stack deployment, as shown in **Figure 2-31**.

#### Figure 2-31 Resources

< 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 Name1D (?)	Logical Name	Resource Type	Resource Status 🍞
Elastic Cloud Server	rf_leststack_ecs1 ec0ee4b13f1647a3-98f6-9d549b56a342	ecs-fboe1	huaweicloud_compute_instance	Creation Complete
Virtual Private Cloud	rf_beststack_sysc1 36375627-5901-40e7-9be8-b5et8448c674	vpc-philfw	huaweicloud_ypc	Creation Complete
Virtual Private Cloud	rf_beststack_subnet1 c35c3e47-6821-4104-916c-9455773e06f2	vpc-submel-up0pp	huaweicloud_ypc_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 2-32** shows that three resources are created.

#### Figure 2-32 Events

< stack_20230210_1046	5_f2				Delata Update Templata/Parameter C
Basic Information Resources	s Outputs	Events Template	Execution Plans		
					Enter a keyword.
Time ↓Ξ		Type	Description	Resource Name/Type	Associated Resource ID
2023/02/10 10:57:21 GMT+08:0	10	100	Apply required resource success.		
2023/02/10 10:57:18 GMT+08:0	10		Apply completel Resources: 0 added, 3 changed, 0 destroyed.		
2023/02/10 10:57:18 GMT+08:0	10	Update Complete	husweicloud_compute_instance.ecs-fbca1: Modifications complete after 2s [idmecbaedbf-2f16-47a2-4665-6d549b56a342]	ecs-1bbe1 ECS	ec0es4bf-3f16-47a3-96f6-9d549b56a342
2023/02/10 10:57:16 GMT+08:0	10	Update in Progress	huamekcloud_compute_imitance.acs=1boa1: Modifying [id=ec0ee4b13116-47a3-985-98549b56a342]	ecs-1boa1 ECS	ec0ee4b1-3115-47a3-9075-9d549b55a342
2023/02/10 10:57:16 GMT+08:0	10	Update Complete	nuaweklout_vpc_subnet vpc-subnet vg0ap: Modifications complete after 1s (id=c35c3e47-6821-4164-916c-945573e082)	vpc-subnet-ug0pp Subnet	c35c3e47-6821-4164-916c-9456773e06f2
2023/02/10 10:57:15 GMT+08:0	10	Update in Progress	hummeliceud_vpc_submet-vpc-submet-ug0pp: Modifying [id=c25c2e47-6821+4166-0455712e8682]	vpc-subnet-up0pp Subnet	c35c3e47-6821-4164-916c-9455712e0662
2023/02/10 10:57:15 GMT+08:0	10	Update Complete	huamekloud_vpc.vpc.ghthv: Modifications constelle after 1s [bl-36379927-9905-40e7-906-65a45445c974]	vpc-ghinfw VPC	36375627-9901-40e7-9be8-b5e/8448c674
2023/02/10 10:57:14 GMT+08:0	10	Update in Progress	husweicloud_vpc-vpc-ghnfw: Modifying	vpc-phintw VPC	36375627-9905-40#7-95#8-05#18448c674

d. **Outputs**: displays output parameters in the template, as shown in **Figure 2-33**:

#### Figure 2-33 Outputs

Terrplata/Parameter C

e. **Template**: displays the template content used for creating a stack, as shown in **Figure 2-34**.

#### Figure 2-34 Template



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 executed, its status changes from **Available** to **Applied** and the **Deploy** button disappears, as shown in **Figure 2-35**.

#### Figure 2-35 Execution plans

<	stack_20230210_1046_f2				Delete Upd	ate Template/Parameter C
Ba	sic Information Resources Outputs Event	s Template Execution Plans				
	Deploy				Enter a keyword.	QC
	Execution Plan NameIID	Status	Estimated Price ()	Created	Description	Operation
	executionFlam_20230210_1111_y191 18354ec4-1137-4608-9009-32a3200d2992	Available	View Details	2023/02/10 11:11:02 GMT+08:00	-	Delete Deploy
	O executionPlan_20230210_1110_7hq1 6012ctac-0e99-4cd3-bca1-d67b0cd23tc8	Available	Wew 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 2-36**.

#### Figure 2-36 Execution plan details

<   stack_20230210_1046_f2		stack_20230210_1046_f2mc										
Basic Information Resources Outputs Events Template Execution Plans		Basic Information										
Deploy		Execution Ph Execution Ph	lan Name lan ID	executionPlan_20230210_1050 p4002eff-242p-45a8-a7dp-4012	2_1925							
Execution Plan Name/ID Status	Estimated Price ③	Description		-								
executionPlan_20230210_1050_1925 c4002etf-242c-46a6-a7dc-461327312dp3		Created		2023/02/10 10:50:42 GMT+08	00							
		Status		Appled								
		Abstract		Resource modified: 3								
		Change Hi	istory					С				
							Enter a keyword.	Q				
		Op	peratio	Mode	Resource Name	Resource Type						
		~	Modify	RESOURCE	ecs-1boa1	hueveicloud_compute_inst	ance					
		~	Modify	RESOURCE	vpc-ghttw	huiwelcloud_vpc						
		~	Modify	RESOURCE	vpc-subnet-ug0pp	huavveicloud_vpc_subnet						

# **3** Visual Designer

- 3.1 Introduction
- 3.2 Visual Designer UI
- 3.3 Cloud Services or Elements
- 3.4 Shortcut Keys of Visual Designer
- 3.5 Compiling a Template to Create an EVS Disk

### **3.1 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.

# 3.2 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 .

File 🔻 💭 上 C Deployme	Mooe )	e Parameters Save Template Create Stack
Entre streywork. C. Compute Co	Trançolate Nares: revolutionate at a second se	Attribute Editing Panel
Databases 🔶		
Relational Database S	Deployment Code (*) The script is in JSON format by default	Messages 🔄 🗙
Containers -	5	no messages. 6
Cloud Container Engine		
Content Denvery & Edge 🔺		G

Table 3-1 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.

# **3.3 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 3-1 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 3-2 Non-scalable elements



#### • 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 3-3 Scalable elements

6	2	v	pc	-91	bkr	nk				-						 	 _
	_		lo c														
							6	2.					+ -				
							Q	9	vp	c-s	ub	ne	t-o	or			
1.																	
)																	-

#### **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 3-4 RDS green hollow point



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 3-5 Green hollow point: an element to be connected

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• 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 3-6 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 3-7 CCE attribute



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

#### Figure 3-8 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.

Figure 3-9 Hollow point: an element to be connected



• 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 3-10 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 3-11 Gray hollow points and connection lines



# **3.4 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

# 3.5 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 3-12**.

#### Figure 3-12 Created EVS disk

Elastic Volume Service ⑦									Buy Disk
Disks Recycle BinNew!									
You can create 56 more disks with 5,050 GB of storage spac To renew multiple disks at a time, switch to the Renewals pa	e. 3e.								
Delete Expand Capacity					All stat	uses 👻	Disk name 🛛 👻		Q Search by Tag 😵 C 🖬 🚳
Disk Name	Status	Disk Specifi Funct	on Server Name	Disk Sharing	. Device Type	Encrypted	AZ 🏹	Billing Mode	Operation
evs-volume-5cc3i 0fe383b4-e679-48da-ad76-a66a6ct05277	🕑 Available	Ultra-high I/O Data o 10 GB Data o	isk	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 3-13.

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Figure 3-13 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 3-14**.

#### Figure 3-14 Mandatory attributes

File + 💭 土 C (Deployee	27///55 C   ← → C 100% C   ⊘ Ø 王 王   E 🔮	Parameters Stave Template Create Stack
Enter a keyword. Q	Template Name: newTemplate s <sup>a</sup>	evs-volume-latyg /*
Compute .		* AZ
Elastic Cloud Server		Seact V 🕀
Storage 🌨		A Mandatory
Elastic Volume Service	C vpc-nutuax	Select V 🕒
Scalable File Service(5		Mandatory
Networking *	• • • • • • • • • • • • • • • • • • •	Disk Specification
Virtual Private Cloud		+ 08 +
Elastic IP		-Default- V
VPC-Subnet		Billing Cycle Unit
NAT Gateway		-Default- V 🕀
Security Group		Required Duration
CO Security Group Mule		•
Databases *		
Relational Database 5	Deployment Cole (2) The script is in JSON format by default.	Messages Ed ×
Containers A	''max'' : ''showt-phric'.           ''gatewy.lp'' : ''ys.ies.or.'           ''gatewy.lp'' : ''ys.ies.or.'           ''ys.''ys.''ys.''ys.''ys.''           ''ys.''ys.''ys.''ys.''ys.''ys.''ys.''ys	No messages.
Content Delivery & Edge 🔺	37         ).           ***usetclosd_evs_vulse**1 {           39         **usetclosd_evs_vulse*1 {           310         ***secolume:closd_slgg*1.           41         ***secolume:closd_slg*2**           42         >           43         >	

#### 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 <sup>(+)</sup> on the right of the attribute editing panel to generate an input parameter, as shown in **Figure 3-15**.

#### Figure 3-15 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 3-16 Saving a template

	$\boxtimes \square \leftrightarrow \land \in$	2 100% 🕀 🖉	Ø ⊕ ± ±		Resourc	e Parameters Save Template	Creat	te Sta
nilate Name- newTemplate feet								_
plate numer, new emplate-test						Template saved. Yo	J can view a	and ma
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						* Hard Disk Type		
🕑 vpc-mtlak						General Purpose SSD	~	Æ
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	vpc-subnet-jw					Dist. On a Standard		
						Disk Specification		
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	auto unal					Default	~	Œ
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						Required Duration		
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						Name		
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						evs-volume-coqvb		Ð
loyment Code (?)				The s	cript is in JSON format by default.	Messages		۴.,

----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 3-17 Crested stack

< stack_20230210_1046_f2 Basic Information Resources Outputs Events	Template Execution Plans			Delete Update Template/Parameter C
				Enter a keyword. Q C
Cloud Product Name	Physical Resource Name/ID (2)	Logical Name (2)	Resource Type	Resource Status 🖓
Electic Cloud Server	rt_3eststack_ecs1 ec0ee4bf-3f16-47a3-96f6-9d549b55a342	ecs-1boe1	huaweicloud_compute_instance	Creation Complete
Virtual Private Cloud	rf_leststack_vpc1 36375627-990F40e7-9be8-b5st8448c674	vpc-ghhłw	husweicloud_vpc	Creation Complete
Virtual Private Cloud	rf_Neststack_subnet1 c35c3e47-6821-41d4-916c-94557f3e00f2	vpc-submet-ug0pp	huawelcloud_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 3-18 EVS created

Elastic Volume Service ⑦										Bu	y Disk
Disks Recycle Bin New!											
You can create 55 more disks with 5,050 GB of storage spa To renew multiple disks at a time, switch to the Renewals pa	ce. ge.										
Delete Expand Capacity						All status	ies 👻	Disk name 👻		Q Search by Tag 🗧 C	$\otimes$
Disk Name	Status	Disk Specifi	Function	Server Name	Disk Sharing	Device Type	Encrypted	AZ 🎖	Billing Mode	Operation	
evs-volume-5cc3i 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 3-19 Created VPC

Vir	tual Private Cloud ②						🖓 Quick Links	Create VPC
	Specify filter criteria.							QCD
	Name/ID	IPv4 CIDR Block	Status	Subnets	Route Tables	Owner Project ID (?)	Operation	
	vpc-idc0l ccb044b9-6755-4f68-a131-4cf9f57b1dcb	192.168.0.0/16 (Primary CIDR block)	Available	1	1	47cf611e636c4a73806e2731cc7fa471	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 3-20 Created subnet

Sub	nets 🕐									Create Subnet
	VPC ID: ccb044b9-675	5-4f68-a131-4cf9f57b1dct	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

# **4** 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.

# **5** Auditing

5.1 RFS Operations Supported by CTS

5.2 Viewing RFS Logs in CTS

# 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

<b>Iable J-I</b> IN J Operations supported by CI3	Table	5-1	RFS	operations	supported	by	CTS
---	-------	-----	-----	------------	-----------	----	-----

Operation	Description
deleteExecution- Plan	Deleting an execution plan
createTemplate	Creating a template
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_01",
   "id": "fcca06b017704dfcb36dcf1b2a29d151"
  },
"name": "cto_dev",
  "id": "155ad09309994f92a5147529aa0ceb2f"
 },
 "record_time": "2022/11/28 14:31:12 GMT+08:00"
3
```

----End

# **6**<sub>FAQs</sub>

6.1 How Will I Be Charged for Using RFS?

6.2 How Can I Update a Stack?

6.3 What Are the Differences Between Creating an Execution Plan, Creating a Stack, and Updating a Stack?

### 6.1 How Will I Be Charged for Using RFS?

RFS itself is free of charge. However.

when you use a template to create a stack, RFS will create cloud service resources as specified in the template. These resources are charged at the pricing of the corresponding cloud services.

# 6.2 How Can I Update a Stack?

RFS supports updating stacks.

To update a stack, modify your stack template first by modifying its parameter values, or adding or deleting resources specified in the template. Then, click **Update** and select the modified template to update the stack.

# 6.3 What Are the Differences Between Creating an Execution Plan, Creating a Stack, and Updating a Stack?

**Creating an execution plan:** Generate an execution plan. You can browse the entire plan in advance to evaluate the impact on ongoing resources. Creating an execution plan will not change the stack. The system changes the stack only when the execution plan is executed.

Creating a stack: Provide an initial template to create and deploy a stack.

**Updating a stack:** Provide a new template or new parameters to trigger a new deployment for directly modifying the stack.

# **7** 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 (?)						+ Create Agency
Users	Agencies available for creation: 1			All	Ŧ	Enter an agency name.	Q
User Groups	Agency Name/ID ↓Ξ	Delegated ↓Ξ	Validity Per ↓Ξ	Created 🐙	Description ↓∃	Operation	
Permissions v Projects	agency/244	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize   Modify   Delete	
Agencies	agency243	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize   Modify   Delete	
Security Settings	agency242	Account	Unlimited	Aug 18, 2021 09	agencyTest	Authorize   Modify   Delete	

Figure 7-1 Creating an agency

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

#### Figure 7-2 Creating an agency

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

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

Figure 7-3 Agency authorization

IAM	Agencies / rf_admin_trust						
Users	Basic Information Permissions						
User Groups	Authorize Delete Author	ization records (IAM projects): 1; (enterprise projects): 0			Agency name: rf_admin_t 0 Search by policyhole name. Q	By IAM Project	By Enterprise Project
Permissions <b>v</b>	Policy/Role	Policy/Role Description	Project (Region)	Principal	Principal Description	Principal Type	Operation
Projects	Tenant Administrator	Tenant Administrator (Exclude IAM)	All resources (Existing and future projects)	nf_admin_trust	-	Agency	Delete
Identity Providers							
Security Settings							

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

Figure 7-4 Selecting policies

Authorize Agency								
0	🕼 Solid Philip Raine ———— (2) Solid Scope ———— (3) Finish							
,	Assign selected permissions to nf_admin_trust.							
	View Sele	clos (i) Copy Permissions from Another Project	All policies/toles					
		Policy/Role Name	Type					
	•	CS Tenard Admin Cixud Stream Service Tenard Administrator, can manage multiple CS users	System-defined role					
	• •	CS Tenart User Citod Sheam Service User	System-defined role					
	• •	CloudPpoline Tenant Extensions PeliAccess Full permissions for the CloudPpoline Tenant Extensions	System-defined policy					
	•	CloudPipeline Tenatr Repline Templates Full-scress Full permissions for the CloudPipeline Tenant Pipeline Templates	System-defined policy					
	• •	CloudPipeline Tenant Rule Templates FullAccess Full permissions for the CloudPipeline Tenant Rule Templates	System-defined policy					
	• •	CloudPipeline Tentert Rules FullAccess Full permissions for the CloudPipeline Tentet Rules	System-defined policy					
	• •	DME AdministratorAccess Data Model Engine tenant administrator with full permissions	System-defined policy					
	•	Tenzard Administrator Tinnard Administrator (Exclude IAM)	System-defined role					
	•	Tenard Cuest (Scalade MM)	System-defined role					
	• •	Workspace TenantManager Tenand 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**.

< Authorize Agency	
(1) Select PalayRise	
() The following are recommended scopes for the permissions you selected. Select the desired scope requiring minimum authorization.	Х
Scope	
() Miresources	
Will users will be able to use all resources, including hose in enterprises projects, projects, and global services under your account based on assigned permissions.	
○ Rejon-specific poljeck @	
○ Gitual services ⊕	
StorLess	

Figure 7-5 Authorization scope

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

#### Figure 7-6

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Authorize Agency					
(1) Soled Poly Note: Segue					
The following are recommended scopes for the parmissions you telefold. Solid: The desired scope meaning minimum authorization.     X					
Scope					
All resources					
Region-specific projects (*) The selected permissions will be applied to resources in the region-specific projects you select.					
Total projects: 30. Select the desired projects.		Enter a project name or description.	Q		
Project [Region] 4E	Description				
	-				
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10 v Total Records: 30 < 1 2 3 >					
○ aaka serices ⊗					
Show Less					

# A Change History

#### Table A-1 Change history

Date	Description
2024-12-18	New Designer Content.
2024-05-30	This issue is the first official release.