Resource Formation Service

Getting Started

Issue	01
Date	2023-05-26

HUAWEI TECHNOLOGIES CO., LTD.

Trademarks and Permissions

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

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

Website: https://www.huawei.com

Email: support@huawei.com

Contents

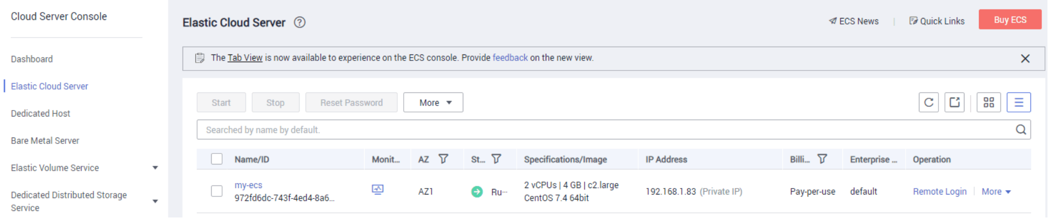
1 Application Orchestration Service

1.1 Writing a Template to Create an ECS

This section describes how to create an Elastic Cloud Server (ECS), including a Virtual Private Cloud (VPC) and subnet by writing a template. An ECS is a computing server equipped with CPUs, memory, images, and Elastic Volume Service (EVS) disks. ECSs can be created on demand and supports auto scaling. A VPC provides logically isolated, configurable, and manageable virtual networks for your ECSs. One or more subnets are automatically created when you create a VPC.

At the end of this walkthrough, you will see the newly created ECS on the **Cloud Server Console**, as shown in **Figure 1-1**.

Figure 1-1 Created ECS



The Tab View is now available to experience on the ECS console. Provide feedback on the new view.

Name/ID	Monit...	AZ	St...	Specifications/Image	IP Address	Billi...	Enterprise ...	Operation
my-ecs 972fd6dc-743f-4ed4-8a6...		AZ1	Ru...	2 vCPUs | 4 GB | c2.large CentOS 7.4 64bit	192.168.1.83 (Private IP)	Pay-per-use	default	Remote Login | More

NOTE

In addition to writing templates from scratch, you can also select public templates to create templates. For more information about templates, see **Templates (Cloud-Based Automation Scripts)**.

In this section, you will complete the following steps:

1. **Step 1: Write a Template**: Use the YAML language to write a template for creating an ECS, VPC, and subnet.
2. **Step 2: Create an ECS**: Use the template to create an ECS, VPC, and subnet.
3. **Step 3: Delete Unnecessary Resources**: Delete unnecessary stack to avoid unwanted charges.

Step 1: Write a Template

Step 1 Write a simple template to create a VPC.

```
tosca_definitions_version: huaweicloud_tosca_version_1_0   #Template version information
node_templates:                 #Element object definition
  myvpc:                        #VPC
    type: HuaweiCloud.VPC.VPC
    properties:
      name: my-vpc              #Name of the VPC
      cidr: '192.168.0.0/16'    #VPC CIDR
```

This template includes:

1. **tosca_definitions_version**: specifies the version of a template. Currently, only **huaweicloud_tosca_version_1_0** is supported by AOS.
2. **node_templates**: defines the set of objects to be orchestrated in a template. In AOS, objects are used interchangeably with elements. An object can be an application or cloud service resource. In the preceding template, **node_templates** defines the **myvpc** VPC.
3. **type**: specifies the type of an orchestration object. The value comes from the element type list and can be set to **Cloud.*** (*** indicates the element name in the **Resource Indexes**). In the preceding template, the **myvpc** VPC type is **HuaweiCloud.VPC.VPC**.
4. **properties**: defines element properties, which vary with element types. In the preceding template, the **myvpc** VPC has the **names** and **cidr** properties, which indicate the name and network segment of the VPC, respectively. For more information, see **VPC.VPC**.

Step 2 Define a subnet in the VPC. A VPC is a large network segment and is usually divided into several subnets. Define a subnet in the created VPC based on the preceding template.

```
tosca_definitions_version: huaweicloud_tosca_version_1_0   #Template version information
node_templates:                 #Element object definition
  myvpc:                        #VPC
    type: HuaweiCloud.VPC.VPC
    properties:
      name: my-vpc              #Name of the VPC
      cidr: '192.168.0.0/16'    #VPC CIDR
  mysubnet:                     #Subnet
    type: HuaweiCloud.VPC.Subnet
    properties:
      name: my-subnet           #Name of the subnet
      cidr: '192.168.1.0/24'    #Subnet CIDR
      gateway: 192.168.1.1      #Gateway of the subnet
      vpcId:                    #ID of the VPC to which the subnet belongs
        get_reference: myvpc
      dhcpEnable: true          #Determines whether to enable the DHCP function for the subnet in the VPC.
    requirements:               #Dependency between the subnet and VPC.
      - vpcId:
          node: myvpc
```

The **requirements** parameter specifies the element that has a dependency relationship with the current element. For example, define **myvpc** as a dependent node in the **requirements** of the subnet because a subnet depends on a VPC.

Step 3 Define an ECS in the template.

```
tosca_definitions_version: huaweicloud_tosca_version_1_0   #Template version information
node_templates:                 #Element object definition
  myvpc:                        #VPC
    type: HuaweiCloud.VPC.VPC
    properties:
      name: my-vpc              #Name of the VPC
      cidr: '192.168.0.0/16'    #VPC CIDR
  mysubnet:                     #Subnet
    type: HuaweiCloud.VPC.Subnet
    properties:
      name: my-subnet           #Name of the subnet
      cidr: '192.168.1.0/24'    #Subnet CIDR
      gateway: 192.168.1.1      #Gateway of the subnet
      vpcId:                    #ID of the VPC to which the subnet belongs
        get_reference: myvpc
      dhcpEnable: true          #Determines whether to enable the DHCP function for the subnet in the VPC.
    requirements:               #Dependency between the subnet and VPC.
      - vpcId:
          node: myvpc
  myecs:                        #ECS
    type: HuaweiCloud.ECS.CloudServer
    properties:
      name: my-ecs              #Name of the ECS
      instances: 1              #Number of created ECSs
      imageId: 7be2e72e-0679-4a1b-8faf-0c1865708b20    #Image ID used by the ECS. In this template, the 
image ID is the ID of the system disk based on 64-bit CentOS 7.4.
      flavor: c2.large          #Specifications of the ECS
      vpcId:                    #ID of the VPC to which the ECS belongs. Either a new or an existing VPC ID can be 
used.
        get_reference: myvpc    #Obtains the dynamic attribute value of the associated element.
      availabilityZone: cn-south-1a      #AZ to which the ECS belongs. This template uses an AZ in the CN 
South-Guangzhou region.
      nics:                     #NIC of the ECS
        - subnetId:
            get_reference: mysubnet
      rootVolume:               #System disk configuration of the ECS
        volumeType: SATA        #Common I/O disk type
        size: 40                #System disk size (unit: GB)
    requirements:               #Dependency among the ECS, VPC, and subnet.
      - vpcId:
          node: myvpc
      - nics.subnetId:
          node: mysubnet
```

Step 4 Save the template as a local file **myecs.yaml**.

Step 5 Log in to the AOS console.

NOTE

In this template, the image ID is the ID of the **CentOS 6.3 64bit** image, and the AZ is **cn-south-1a** in the **CN South-Guangzhou** region. Therefore, select the **CN South-Guangzhou** region after logging in to the console to avoid stack creation failure.

Step 6 In the navigation pane, choose **My Templates**, and then click **Create Template**.

Step 7 On the **Upload Local Template** tab page, specify the following parameters, upload a local YAML file, and then click **Create**. The template details page is then displayed, showing the template information.

- **Template**: Enter a template name. Each template name must be globally unique. For example, set this parameter to **myecs**.
- **Version**: Set this parameter to 1.0.
- **Select File**: Upload the **myecs.yaml** file.

----End

Step 2: Create an ECS

Step 1 Log in to the AOS console.

Step 2 In the navigation pane, choose **My Templates**. The **myecs** template is displayed in the template list.

Step 3 Click **Create Stack** in the **Operation** column of the **myecs** template.

Step 4 Set the stack information.

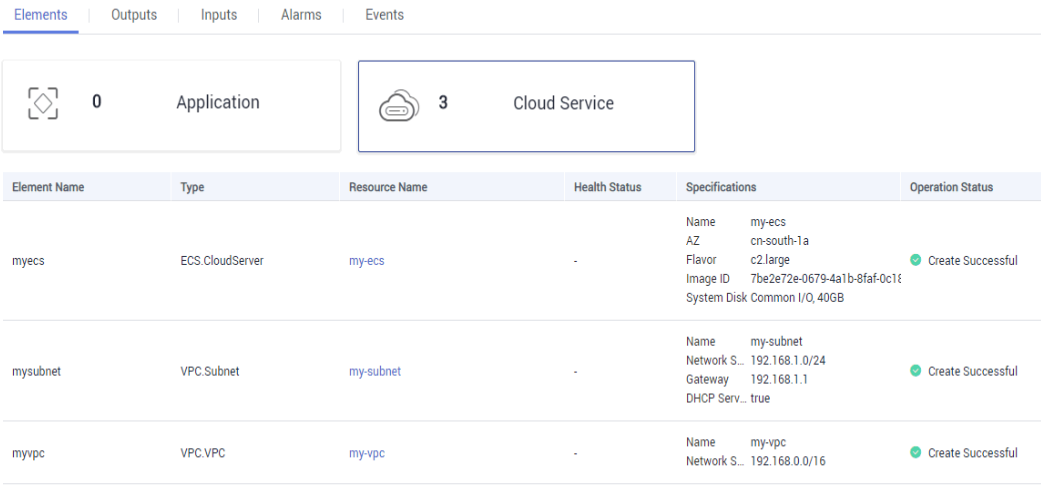
- **Stack Name**: Enter a unique stack name, for example, **aos-ecs**.
- **Description**: The description can be left blank.

Step 5 Click **Next** and check the stack information. If the stack information is correct, click **Create Stack**.

The stack details page is displayed, showing that the stack is being created. The stack includes a VPC, a subnet, and an ECS. It will take about 6 minutes to create the stack.

Step 6 Wait until the stack status becomes **Normal**. The VPC, subnet, and ECS are created and displayed in the stack element list.

Figure 1-2 Created stack

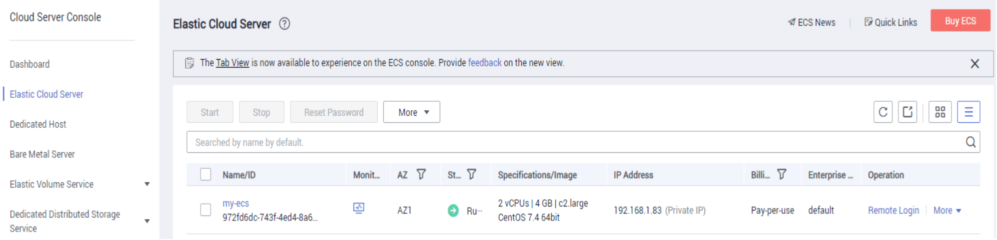


Element Name	Type	Resource Name	Health Status	Specifications	Operation Status
myecs	ECS.CloudServer	my-ecs	-	Name my-ecs AZ cn-south-1a Flavor c2.large Image ID 7be2e72e-0679-4a1b-8faf-0c1ٍ System Disk Common I/O, 40GB	● Create Successful
mysubnet	VPC.Subnet	my-subnet	-	Name my-subnet Network S... 192.168.1.0/24 Gateway 192.168.1.1 DHCP Serv... true	● Create Successful
myvpc	VPC.VPC	my-vpc	-	Name my-vpc Network S... 192.168.0.0/16	● Create Successful

Step 7 View the created cloud services.

1. Log in to the management console.
2. Choose **Service List** > **Computing** > **Elastic Cloud Server**. You will see the newly created ECS on the ECS list.

Figure 1-3 Created ECS



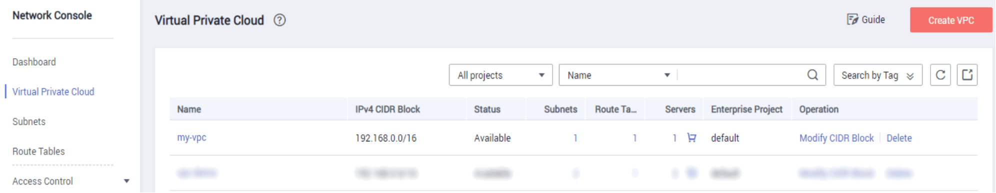
The Tab View is now available to experience on the ECS console. Provide feedback on the new view.

Searched by name by default.

Name/ID	Monit...	AZ	St...	Specifications/Image	IP Address	Billi...	Enterprise ...	Operation
my-ecs 972fd6dc-743f-4ed4-8a6...		AZ1	Ru...	2 vCPUs | 4 GB | c2.large CentOS 7.4 64bit	192.168.1.83 (Private IP)	Pay-per-use	default	Remote Login | More

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

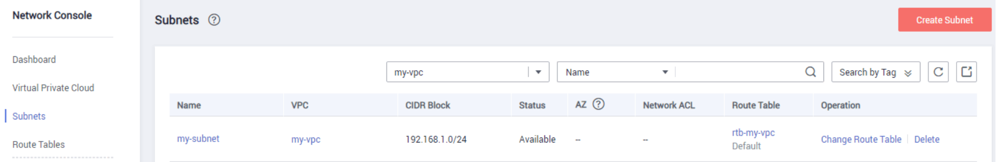
Figure 1-4 Created VPC



Name	IPv4 CIDR Block	Status	Subnets	Route Ta...	Servers	Enterprise Project	Operation
my-vpc	192.168.0.0/16	Available	1	1	1	default	Modify CIDR Block | Delete
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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 1-5 Created subnet



Name	VPC	CIDR Block	Status	AZ	Network ACL	Route Table	Operation
my-subnet	my-vpc	192.168.1.0/24	Available	--	--	rtb-my-vpc Default	Change Route Table | Delete

----End

Step 3: Delete Unnecessary Resources

Delete unnecessary stack resources to avoid unwanted charges.

Step 1 Log in to the AOS console.

Step 2 In the navigation pane, click **My Stacks**.

Step 3 Select the stack that will no longer be used, and click **Delete** to delete the stack.

----End