

# Ubiquitous Cloud Native Service

## Getting Started

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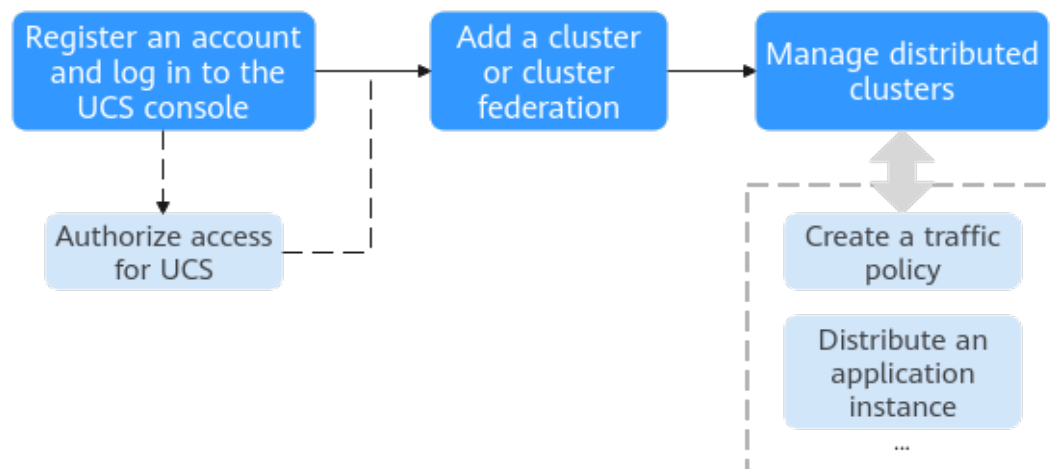
# 1 Introduction

This section describes how to use Ubiquitous Cloud Native Service (UCS) to help you quickly get started with UCS.

## Procedure

To use UCS, do as follows:

**Figure 1-1** Procedure



**Step 1** You have registered a Huawei Cloud account and logged in to UCS console.

**Step 2** Add a cluster or cluster federation. For details, see [Connecting a Third-Party Kubernetes Cluster](#).

**Step 3** You can use the UCS console to manage, monitor, and troubleshoot your distributed clusters. All in one place with consistent experience. Supported functions:

- Create a traffic policy. For details, see [Creating a Traffic Policy](#).

----End

# 2 Preparations

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## Registering with Huawei Cloud

If you already have a Huawei Cloud account, skip this part. If you do not have a Huawei Cloud account, perform the following operations to create one:

1. Visit <https://www.huaweicloud.com/intl/en-us/> and click **Register**.
2. On the page displayed, register an account as prompted.

After the registration is successful, the system redirects you to your personal information page.

## Creating an IAM User

If you want to allow multiple users to manage your resources without sharing your password or keys, you can create IAM users and grant permissions to them. These users can use specified links and their own accounts to access Huawei Cloud. You can also configure account security policies to protect your organization against risks.

You need to manually assign permissions to IAM users to use UCS. For details, see [Permissions](#).

## (Optional) Creating a DNS Record Set

UCS distributes your service traffic by resolving domain names using the DNS service. To use a domain name to access a cluster, you need to add a DNS record set for the domain name on the DNS console.

For details about how to add a record set, see [Configuring Record Sets for a Website](#).

### NOTE

You need to register the domain name via the domain name registrar.

**Step 1** Log in to the management console.

**Step 2** Hover on the upper left corner to display **Service List** and choose **Networking > Domain Name Service**.

**Step 3** In the navigation pane, choose **Public Zones**.

**Step 4** (Optional) In the upper right corner of the page, click **Create Public Zone**.

After you register a domain name with Huawei Cloud, a public zone will be automatically created. You can jump to [Step 6](#).

**Step 5** (Optional) Set **Name** to **example.com**.

**Step 6** Click the zone name **example.com** to access the record sets page.

**Step 7** In the upper right corner of the page, click **Add Record Set** and set parameters as prompted to add an A record set for the domain name.

**Step 8** Click **OK**.

----**End**

# 3 Connecting a Third-Party Kubernetes Cluster

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UCS automatically takes over your CCE cluster.

This section uses a self-built cluster as an example to describe how to quickly connect a Kubernetes cluster to UCS through a public network.

## Obtaining kubeconfig

**Step 1** Log in to the master node in the cluster to be connected.

**Step 2** Obtain the cluster kubeconfig file.

```
cat $HOME/.kube/config
```

By default, the kubeconfig file of a self-built cluster is stored in the **\$HOME/.kube/config** directory of the master node. If another kubeconfig file is specified for your cluster, change the directory. For details about the kubeconfig file, see [Organizing Cluster Access Using kubeconfig Files](#).

**Step 3** Copy the credential content.

**Step 4** Create a YAML file on the local PC, paste the credential content copied in the previous step to the file, and save the file.

----End

## Connecting a Cluster

**Step 1** Log in to the UCS console. In the navigation pane, choose **Container Clusters**.

**Step 2** Click **Connect** under the cluster type.

**Step 3** Select a cluster service provider and set cluster parameters as prompted. In this example, only key parameters listed in [Table 3-1](#) are set.

**Table 3-1** Parameters for connecting a cluster

Parameter	Description
* Service Provider	Select a cluster service provider.
* kubeconfig	Upload the kubectl configuration file to complete cluster authentication. The file can be in JSON or YAML format.
* Context	Select the corresponding context. The option list is available after the kubeconfig file is uploaded. By default, the option list is the context specified by the <b>current-context</b> field in the kubeconfig file. If the file does not contain this field, you need to manually select an option from the list.
* Cluster Name	Enter a name for the cluster. Start with a lowercase letter and do not end with a hyphen (-). Use only digits, lowercase letters, and hyphens (-).
* Region	Select a region where the cluster is deployed.
* Cluster Group	Select the cluster group to which the cluster belongs. Defaults to <b>default</b> .


**Figure 3-1** Registering a cluster

### Register Cluster

Service Provider

kubeconfig


Upload the kubeconfig file (in JSON or YAML format) for cluster authentication.

 kubeconfig.yaml

Context

Cluster Name

Region

Cluster Groups  

Cluster Label  =

**Step 4** Click **OK**.

**----End**



## Enabling Network Access

After a cluster is connected, you need to configure a proxy for the cluster to access the network so that the cluster can be taken over by UCS. The following section uses public network access as an example.

Connecting a cluster through a public network is easy, flexible, and cost-effective. If you require high speed, stability, and security while low latency, you can access the cloud through a private network. For details, see [Connecting a Non-CCE Cluster \(Private Access\)](#).

**Step 1** Go to the UCS console and click **Public Network Access** in the row of the cluster to be accessed to view the detailed public network access process.

**Step 2** Download the configuration file of the cluster agent.

 **NOTE**

The agent configuration file contains keys and can be downloaded only once. Keep the file secure.

**Step 3** Use `kubectl` to connect to the cluster, create a YAML file named **agent.yaml** (the file name can be customized) in the cluster, and paste the agent configuration content in [Step 2](#) to the YAML file.

```
vim agent.yaml
```

**Step 4** Run the following command in the cluster to be connected to deploy the agent:

```
kubectl apply -f agent.yaml
```

**Step 5** Check the deployment of the cluster agent:

```
kubectl -n kube-system get pod | grep proxy-agent
```

If the deployment is successful, the expected output is as follows:

```
proxy-agent-5f7d568f6-6fc4k 1/1 Running 0 9s
```

**Step 6** Check the running status of the cluster agent:

```
kubectl -n kube-system logs <Agent Pod Name> | grep "Start serving"
```

If the is running properly, the expected log output is as follows:

```
Start serving
```

**Step 7** Go to the UCS console and refresh the cluster status. The cluster is in the Running state.

Figure 3-2 Cluster in running state



----End

# 4 Managing Distributed Clusters

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## 4.1 Creating a Traffic Policy

UCS intelligently distributes application requests and supports functions such as traffic splitting, grayscale release, and failover.

### Prerequisites

- You have connected a Kubernetes cluster to UCS and enabled network access for the cluster. For details, see [Connecting a Third-Party Kubernetes Cluster](#).
- A LoadBalancer Service has been created for the cluster.
- An approved public domain name has been added to Huawei Cloud DNS record set. For details, see [Creating a DNS Record Set](#).

### Procedure

Assume that your services are deployed in multiple regions. By default, users in China access your services in the CN North-Beijing4 region, and users in Asia Pacific will be served in the AP-Singapore region to reduce the latency. In this case, you can create a traffic policy to split traffic for applications by region.

- Step 1** Log in to the UCS console.
- Step 2** In the navigation pane, choose **Traffic Distribution**.
- Step 3** Click **Create Traffic Policy** in the upper right corner.
- Step 4** Select the domain name added to the record set and enter the domain name prefix as prompted. If there is no subdomain name, the domain name prefix can be left blank.
- Step 5** Add a scheduling policy. In this example, set only key parameters listed in [Table 4-1](#) and retain the default values for other parameters. To create traffic policies for users in different regions, repeat this step and select different clusters and line types.

**Table 4-1** Key parameters of a scheduling policy

Parameter	Description
Cluster	Select a cluster in Running state. All clusters taken over by UCS are displayed.
Namespace	Namespace to which the Service belongs. Defaults to <b>default</b> .
Service	Select a Service. Only LoadBalancer Services can be selected.
Line Type	<ul style="list-style-type: none"> <li>• <b>ISP line:</b> routes visitors to the optimal address based on the carrier networks they use. Defaults to <b>China Telecom/Default regions</b>. You can specify a carrier and region down to province.</li> <li>• <b>Region line:</b> routes visitors to the optimal address based on their geographic locations. Defaults to <b>Chinese Mainland/Default regions</b>. You can select a global region. For <b>Chinese Mainland</b>, the region granularity is province. For <b>Global</b>, the region granularity is country/region.</li> </ul>

**Figure 4-1** Adding a scheduling policy

**Add Scheduling Policy** ×

\* Cluster: cluster-yy Tencent Cloud C

\* Namespace: default C

\* Service: C

💡 Supports only LoadBalancer Services. The qualifying results are displayed.

\* Line Type: Region line ?  
Global/Asia-Pacific/Singapore

TTL (s): 300 5Minute 1Hour 12Hour 1Day ?

Weight: 1 ?

OK Cancel

**Step 6** Click **OK**. Under this traffic policy, users in Asia Pacific will preferentially access the specified line.

**Step 7** Check whether the scheduling policy takes effect. For details, see [How Do I Check Whether Record Sets Have Taken Effect?](#)

You can use a device that has connected to the Internet at Asia Pacific and run the following command to check whether the scheduling policy takes effect:

```
nslookup demo.***.com
```

 **NOTE**

If the device OS does not support the **nslookup** command, manually install it first. For example, if you are using a CentOS device, run the **yum install bind-utils** command first.

If the following information is displayed and the IP address of **Address** is the load balancer IP of the target cluster, the scheduling policy takes effect.

```
Server: ***  
Address: *.*.*  
  
Non-authoritative answer:  
Name: demo.***.com  
Address: 124.*.*
```

**----End**