

# Alibaba Cloud

## Application Configuration Management User Guide

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# Document conventions

Style	Description	Example
 <b>Danger</b>	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 <b>Danger:</b> Resetting will result in the loss of user configuration data.
 <b>Warning</b>	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 <b>Warning:</b> Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 <b>Notice</b>	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 <b>Notice:</b> If the weight is set to 0, the server no longer receives new requests.
 <b>Note</b>	A note indicates supplemental instructions, best practices, tips, and other content.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click <b>Settings</b> > <b>Network</b> > <b>Set network type</b> .
<b>Bold</b>	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click <b>OK</b> .
<code>Courier font</code>	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[ ] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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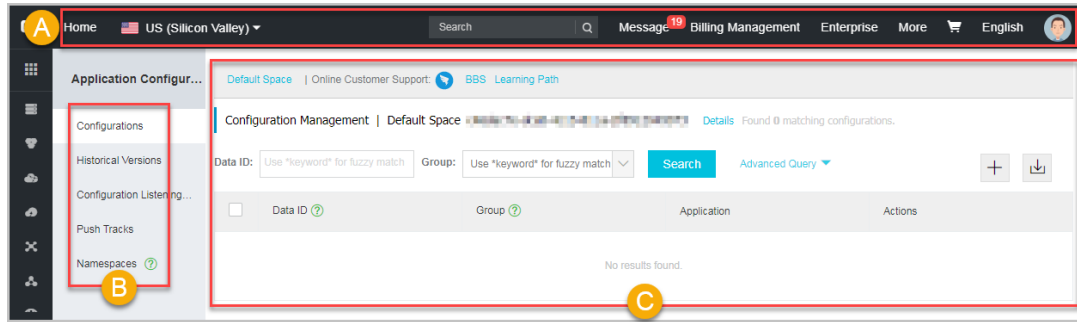
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# 1.ACM console introduction

The ACM console is the workbench for configuration management. This topic describes the different areas of the ACM console.

The ACM console consists of the following areas:

ACM console



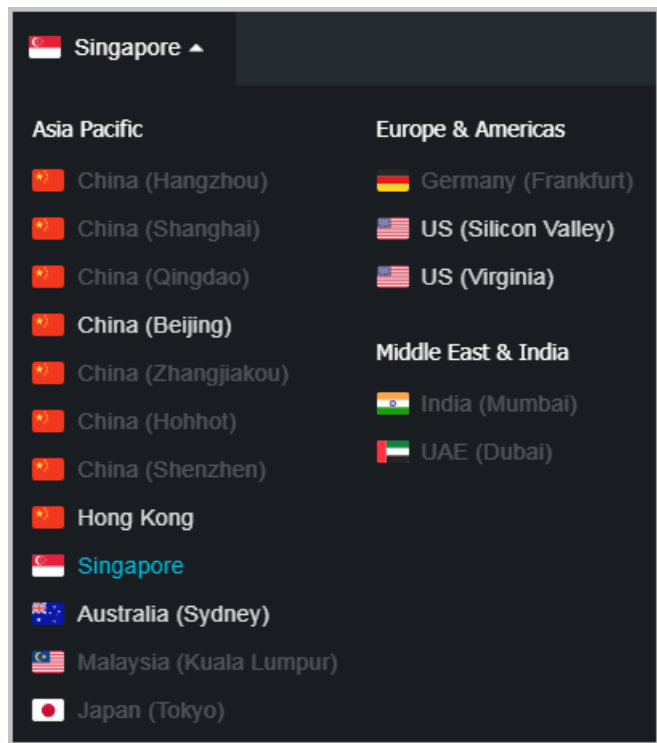
- [A] Top navigation bar: Shows menus of Regions, Messages, Tickets and so on.
- [B] Left-side navigation pane: Allows you to navigate to each sub-module, including configuration list, historical versions, listening query, push tracks, and namespaces.
- [C] Configuration Management: Provides core features to create, query, edit, and delete configurations and more advanced features.

## 2.Select a region

The machines you purchase can be distributed in different regions, so you have to determine which region you want to publish the configuration to before using the configuration management service.

### Procedure

1. Log on to the [ACM console](#).
2. In the top navigation bar, hover the mouse over **Singapore**, and select the desired region in the overlay.



## 3. Managing configurations

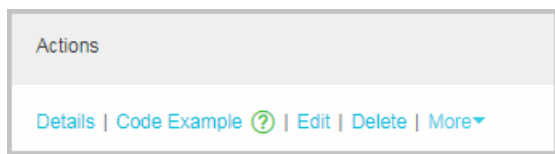
After you create a configuration item, you can use the configuration in the code. You may need to change configurations, so the ACM console is frequently used. You can search for, view, edit, and delete configurations in the ACM console.

### Search for configurations

The ACM console supports searching for a configuration using the Data ID, Group ID, or a combination of both.

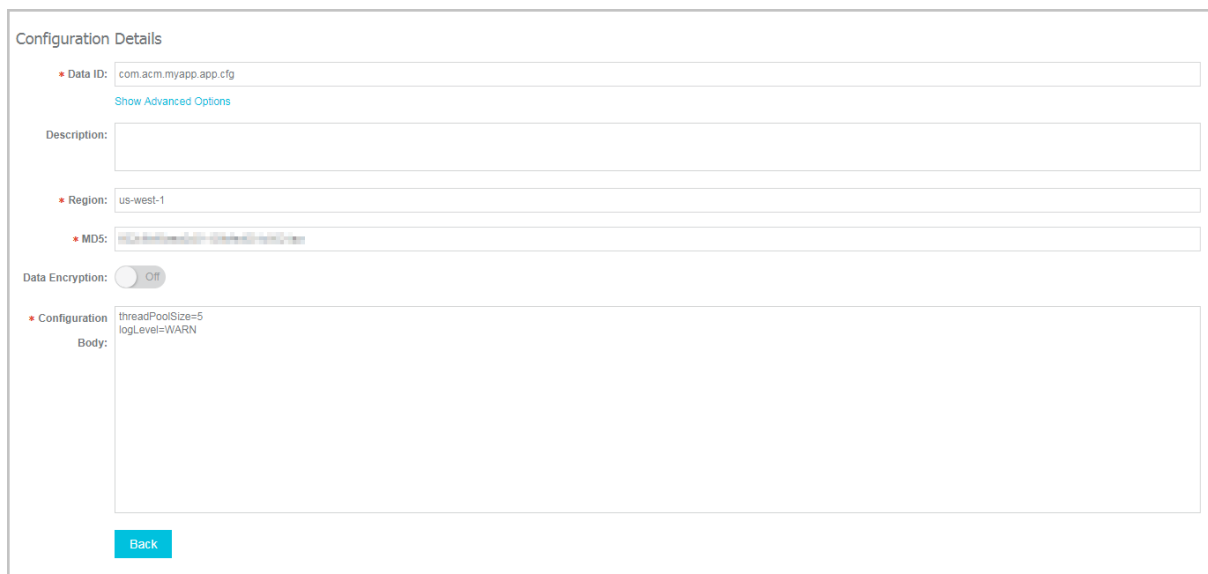
To search for a configuration, follow these steps:

1. Log on to the [ACM console](#), and select a **Region** as needed in the upper-left corner.
2. Select **Configurations** in the left-side navigation pane of the console. Enter the information you want to search for, and click the **Search** button.
3. After the target configuration is found, you can view the details of the configuration, or change or delete the configuration, as shown in the following figure.



### View configuration details

Click **Details** in the search results to view detailed information about a specific configuration.



### Edit configurations

In the search result, click **Edit** to go to the editing page.

Edit Configuration

\* Data

cipher-gege

ID:

Advanced Options

Description

Target

☒ Public Network Environment

Region:

Beta

☐ Deselected by default. [Deselected by default. Learn more about beta publishing.](#)

Publish:

Data

☒

Encryption

Format:

☒ TEXT ☐ JSON ☐ XML ☐ YAML ☐ HTML ☐ Properties

Configuration Content

1

test

?

:

Publish

Back

ACM offers the following advanced features on the configuration editing page.

Feature	Description	Usage
Format validation	Provides syntax validation for JSON or XML format. Select a format in the Format field to perform syntax validation for that specific format, which helps reduce issues caused by syntax errors.	Select the format of the text in the <b>Format</b> field before editing the configuration content.



Feature	Description	Usage
Comparison of changes	ACM supports comparing changes when a changed configuration is submitted for publishing. Check the changes prior to publishing to reduce misoperations.	After the configuration is changed, click <b>Publish</b> to open the content comparison dialog box.
<b>Beta Publish</b>	An error in key configuration changes may cause a major fault, so it is recommended to publish the changed configurations to a few machines for verification first. By only pushing to all machines after the changes are proven to be safe, you can minimize the impact of errors in changes.	Check the <b>Beta Publish</b> checkbox, and enter the IP address of the machines for beta publish (enter the public IP for a local test).

## Delete configurations

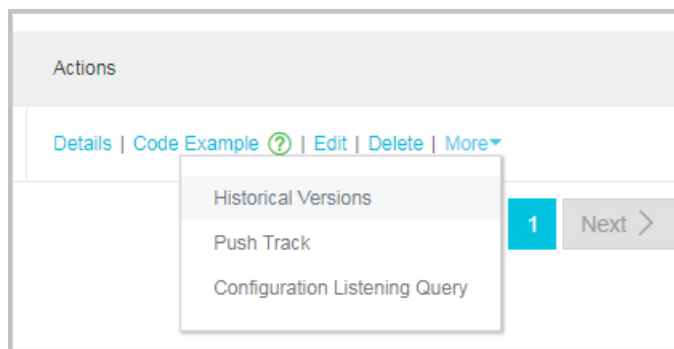
Click **Delete** to delete a configuration.

## 4.Query and rollback versions

If you made a mistake when changing a configuration item, you need to roll back immediately. ACM supports querying configuration change history and rolling back configurations.

### Procedure


- 1.
2. In the left-side navigation pane, select **Configurations** , enter the **Data ID** or **Group** of the configuration to be queried, and then click **Search**. Matching results appear in the list.
3. In the search results, select **More > Historical Versions** on the right side of the target configuration.



The **Historical Versions** page is displayed.

Search Results: Found 4 configuration items.			
Data ID	Group	Last Modified At	Actions
cipher-test	DEFAULT_GROUP	Apr 19, 2018, 23:08:52	<a href="#">Details</a>   <a href="#">Roll Back</a>
cipher-test	DEFAULT_GROUP	Apr 19, 2018, 22:42:31	<a href="#">Details</a>   <a href="#">Roll Back</a>
cipher-test	DEFAULT_GROUP	Apr 19, 2018, 15:27:49	<a href="#">Details</a>   <a href="#">Roll Back</a>
cipher-test	DEFAULT_GROUP	Apr 7, 2018, 22:37:36	<a href="#">Details</a>   <a href="#">Roll Back</a>

4. Perform the following tasks as needed on the page.
  - To view the configuration content of a specific version, click **Details** in the **Actions** column.
  - To roll back to a specific version, click **Roll Back** in the **Actions** column, and on the **Configuration Rollback** page, click **Roll Back**.

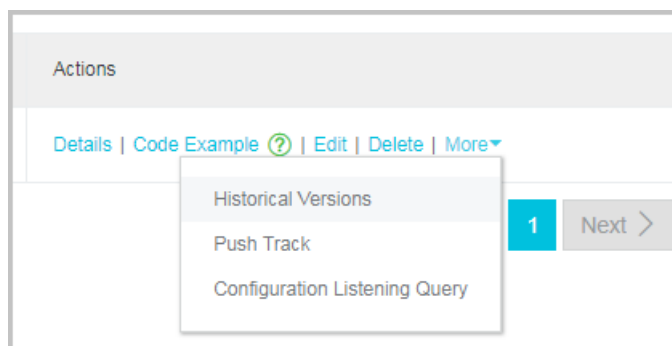
 **Note** ACM currently saves change histories of up to 30 days.

## 5.View push status

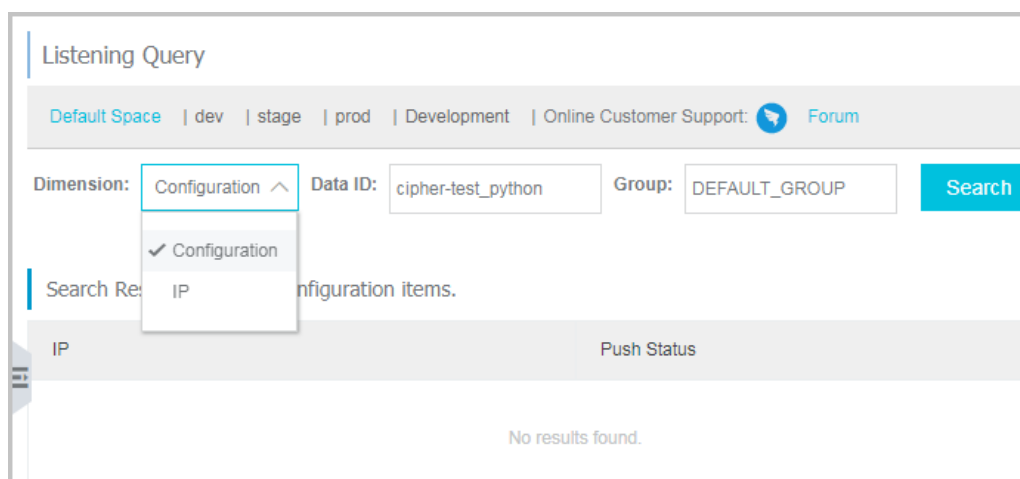
After changing a configuration, you might want to check whether the changed configuration has been pushed to the machine which is listening for this configuration. This query is only effective for clients that use the configuration listening API to listen for configurations.

### Procedure

- 1.
2. In the left-side navigation pane of the console, select **Configurations**, enter the **DataID** or **Group** of the configuration to be queried, and then click **Search**. Matching results appear in the list.
3. In the search results, select **More > Configuration Listening Query** on the right side of the target configuration.



The **Listening Query** page is displayed.



4. Enter the **Dimension**, **DataID**, or **Group** on the page, and then click **Search**.

#### Note

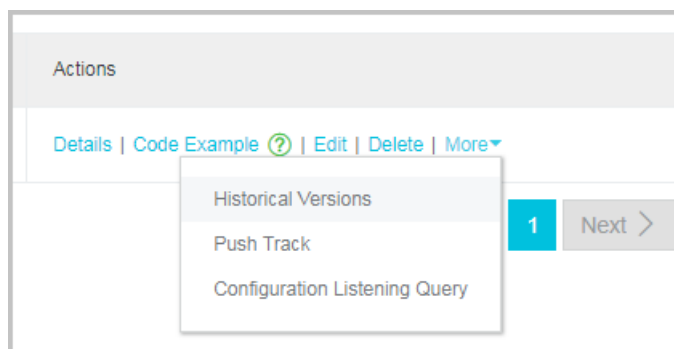
- If the dimension is set to **Configuration**: search the machines to which this configuration is pushed and the push status.
- If the dimension is set to **IP**: search the list of configurations that this machine listens for.

## 6.Push track query

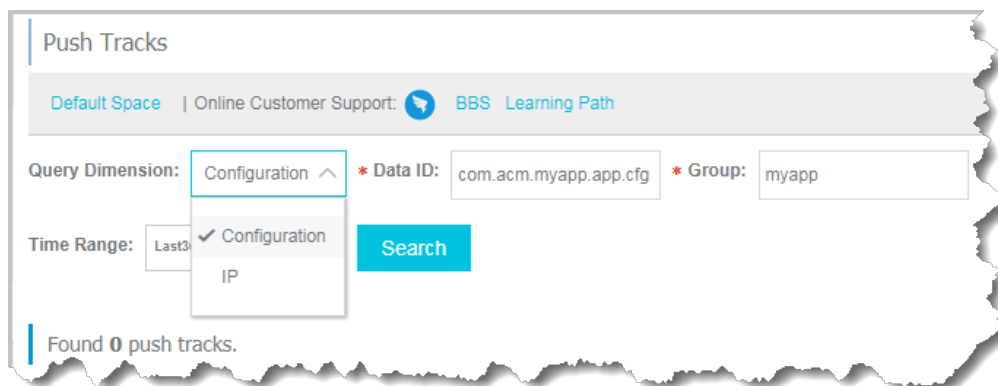
After changing a configuration, you can check whether the configuration has been successfully pushed according to the push track. If you find that the changed configuration does not take effect on a machine, you can follow the push track to check whether the configuration has been pushed to the machine.

### Procedure

- 1.
2. Select **Configurations** in the left-side navigation pane of the console. Enter the information you want to search for, and click the **Search** button.  
The matching search results appear in the list.
3. Click **More** and select **Push Track** in the dropdown list.



The **Push Track** page is displayed.



4. Enter the **Dimension**, **Data ID**, **Group**, and **Time Range**, and click **Search**.

#### Note

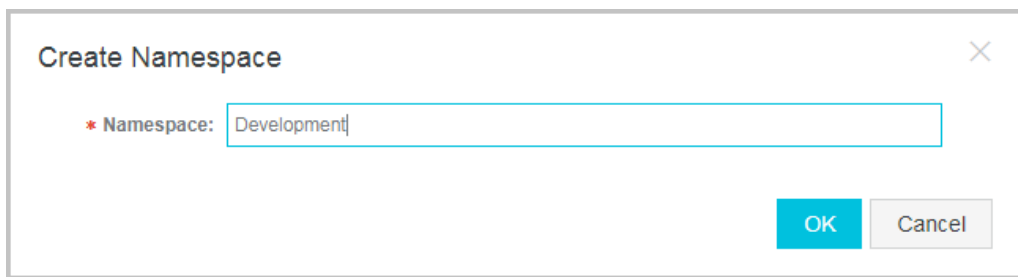
- If you set the dimension to **Configuration**, the push track of the specified configuration will be queried.
- If you set the dimension to **User IP**, the configuration access history of the specified client will be queried.

## 7. Create a namespace


When different configuration values are required in the official and test environments respectively, you can create namespaces to isolate the configurations in different environments. When the data of multiple product lines needs to be isolated, you can also allocate a namespace to each product line.

### Procedure

1. Log on to the [ACM console](#), and select a region as needed in the upper-left corner.
2. In the left-side navigation pane of the console, click **Namespaces**.  
The **Namespaces** page is displayed.
3. In the upper-right corner of the page, click **Create Namespace**.  
The **Create Namespace** dialog box opens.

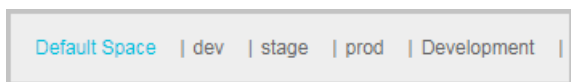
A screenshot of the 'Create Namespace' dialog box. It has a title bar with 'Create Namespace' and a close button (X). Inside, there is a label '\* Namespace:' followed by a text input field containing 'Development'. At the bottom right, there are two buttons: 'OK' (blue) and 'Cancel' (gray).

4. Enter a namespace name in the dialog box, and click **OK**.

 **Note** Currently, one user can create up to five namespaces.

For example, enter *Development*.

The new namespace appears in the table on the **Namespaces** page, and the namespace selection area at the top of the **Configurations** page. The data of this namespace and that of other namespaces is completely isolated.

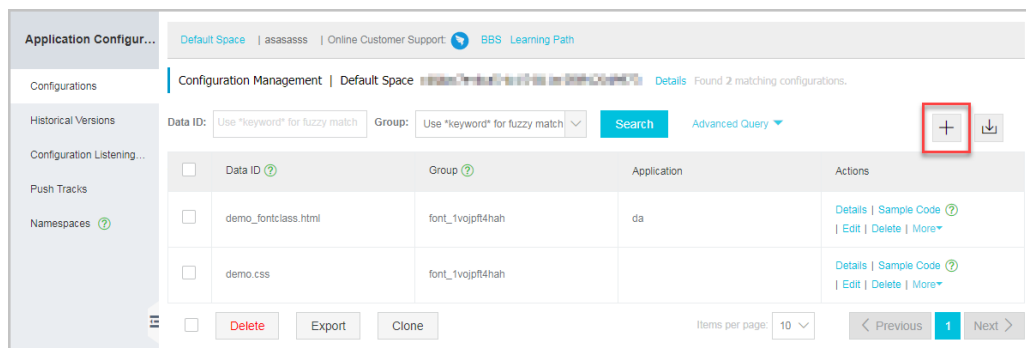
A screenshot of a horizontal bar used for selecting a namespace. It contains five items: 'Default Space' (highlighted in blue), 'dev', 'stage', 'prod', and 'Development'.

## 8.Create and use encrypted configuration

ACM provides encrypted configuration to meet the requirement for sensitive configurations (data sources, tokens, usernames, passwords, and so on), and to lower the risk of leaking user configurations. An encrypted configuration is a configuration stored in an encrypted way. This topic explains how to create and use an encrypted configuration.

### Create encrypted configuration

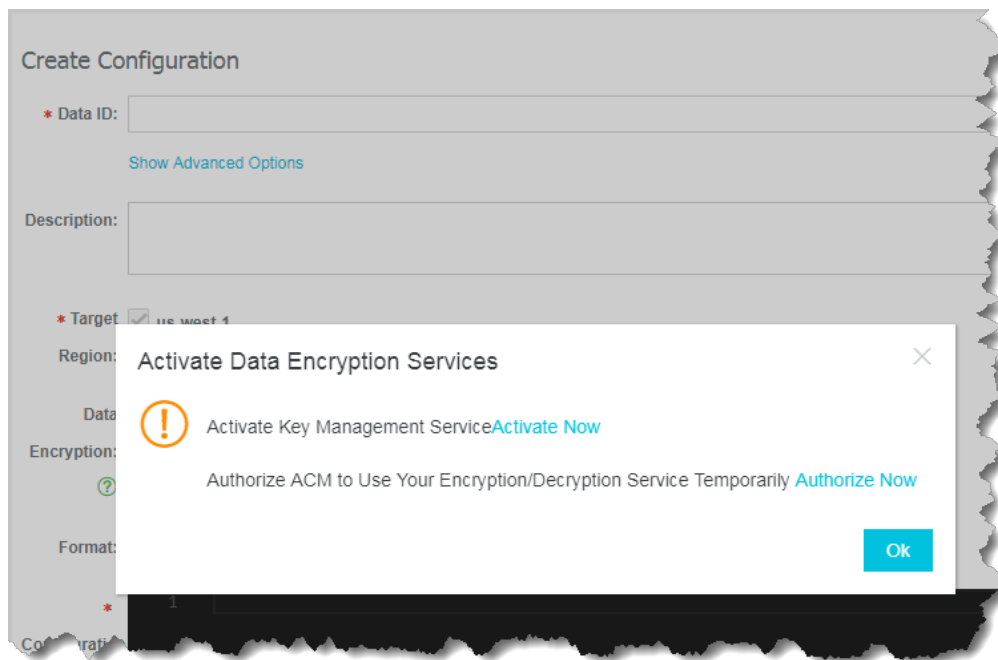
1. Log on to the [ACM console](#).
2. In the left-side navigation pane of the console, click **Configurations**, and on the right side of the page, click the **+** icon.



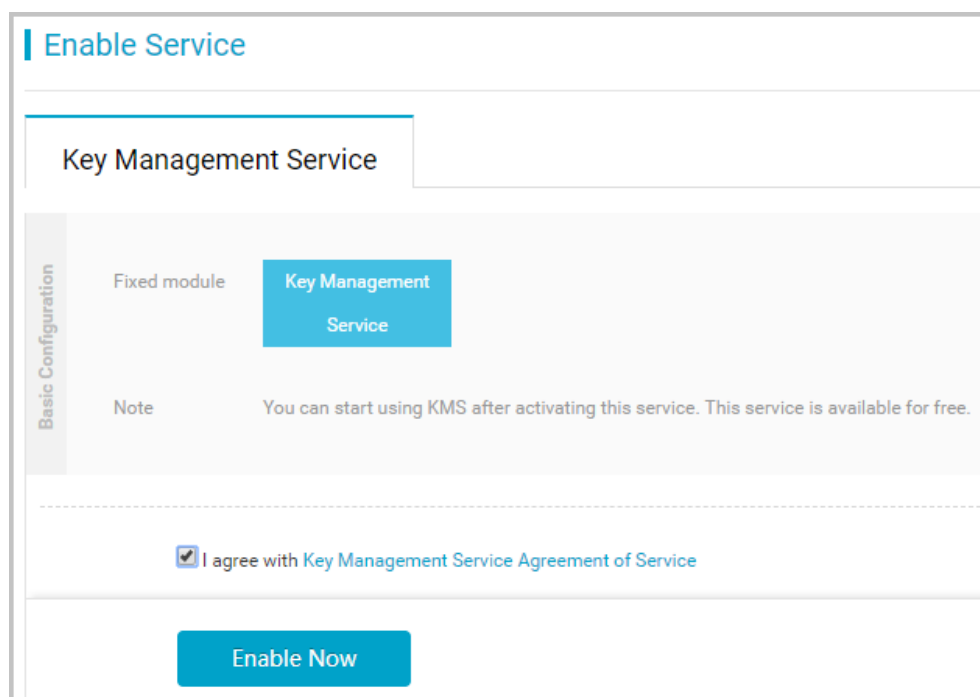
3. On the **Create Configuration** page, switch on **Data Encryption**.

**Note** When you use the data encryption function for the first time, the **Activate Data Encryption Services** dialog box appears. You must activate the key management service and authorize ACM to encrypt and decrypt with your key management service before you can use this function, because ACM data encryption function relies on key management service to encrypt configurations.

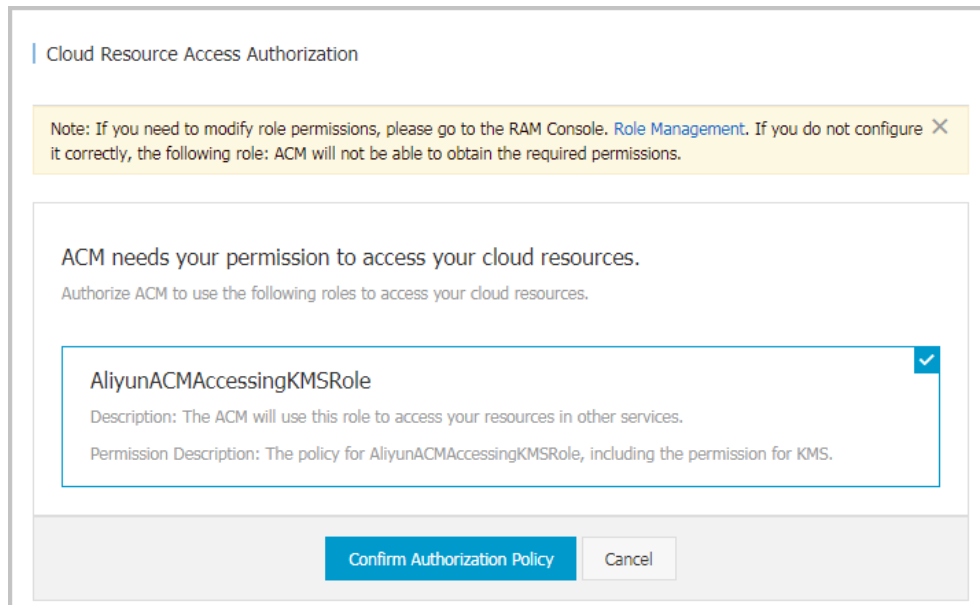
4. In the **Activate Data Encryption Services** dialog box, perform the following steps.




- i. Click **Activate Now**. On the **Enable Service** page, select **I agree with Key Management Service Agreement of Service**, and then click **Enable Now**.



- ii. Click **Authorize Now**. On the **Cloud Resource Access Authorization** page, select the target permission, and click **Confirm Authorization Policy**.




5. On the **Create Configuration** page, enter the configuration content, and then click **Publish**.

 **Note** To make it easier for you to manage the configurations, everything is displayed in plain text in the console, although the configurations are actually encrypted.

## Use encrypted configuration

1. Log on to the [ACM console](#).
2. In the **Actions** column on the right side of the table, click **Code Example** to get sample code.

 **Note** Java SDK and Python SDK has incorporated KMS-SDK, so you can add decryption filters for automatic decryption. For more information about decryption of other languages, see [Decrypt](#).

3. Click **Details** above the Search button, and click **Obtain** in the **Namespace Details** dialog box to obtain the initialization parameters.



### Namespace Details

Region ID: **us-west-1**

Namespace Name: **Default Space(EDAS)**

Namespace ID: **[REDACTED]**

End Point: **addr-us-west-1-internal.acm.aliyun.com**

Automatically Issue AccessKey and SecretKey (Recommended for production environment): [Details](#)

AccessKey (Recommended for development environment): [Obtain](#)

SecretKey (Recommended for development environment): [Obtain](#)

ACM's Dedicated AccessKey (To be deprecated soon and not recommended): **[REDACTED]**

ACM's Dedicated SecretKey (To be deprecated soon and not recommended): **[REDACTED]**

Note: ACM's dedicated AK/SK is mainly used for compatibility requirements. We recommend that you always use Alibaba Cloud AK/SK. [Details](#)

**Ok**

**Note** Although you can directly obtain the configuration data with the AccessKey/SecretKey of the primary account, we strongly recommend that you use the AccessKey/SecretKey of sub-accounts for the sake of security. If you use the AccessKey/SecretKey of sub-accounts, then you must grant the sub-account the AliyunACMFullAccess and AliyunKMSCryptoAccess permission. For more information, see [Sub-Account Management](#).

## 9. Access ACM with instance RAM role (MT)

ACM provides the capability of local ACM-SDK testing, which allows apps to be tested by retrieving configuration locally without remote connection to ACM. While building a local test environment, you can still access the public region in the Internet, however, other regions can only be accessed on the ECS of the same region, such as ACM's Shanghai Region, it can only be accessed on the ECS in Shanghai.

The ACM package currently supports Mac, Linux and Windows platforms, JDK 1.8 and later. The Function Comparison Between the ACM local package and the ACM website is as follows.

Items Compared	ACM website	ACM local
Configure actions	Supported	Yes-
Historical Version	Yes	Unsupported
Listen for queries	Yes	Unsupported
Push track	Yes	Unsupported
Namespaces	Yes	Unsupported

### ACM deployment

1. Download the ACM-server package locally (link: [acm-server.tar.gz](#) ).
2. Decompress the file, and the acm-server directory will be created under the current directory.

```
tar xzvf acm-server.tar.gz
```

3. Enter the ACM-Server Directory, execute the startup script, run acm-server.

```
cd acm-server/bin sudo sh catalina.sh run
```

4. Access *localhost:8080/diamond-server* in the browser.


The above logon interface indicates that acm-server is already started.

### Create a configuration in the local console

1. Enter *localhost: 8080/diamond-server* in the browser to enter the page.
2. On the **Configuration Management** page, click **New configuration**.
3. Enter the configured data ID, group ID, and content, and click **Publish**, this allows you to create a new configuration.

### Querying the configuration in the local console

1. On the **Configuration Management** page, enter the data ID and group that you want to query. ID, click **Query**.

 **Note** If you enter only the data ID, the query has the data ID All configurations. If you do not enter any query conditions, then the system queries all configurations.

2. In the **actions** column of the query results list, click **details**.
3. View the configuration content in the **configuration content** text box.

## Modify the configuration in the local console

1. In the **actions** column of the query results list, click **Edit**.
2. Modify the configuration content in the **configuration content** text box, and click **Publish**.

## Delete configurations

1. In the **actions** column of the query results list, click **Delete**.
2. The message "Are you sure you want to delete this icon?" is displayed. Click **OK**.

## ACM-SDK testing

1. Bind acm.aliyun.com domain name.

Since ACM-SDK uses a maid domain name to connect the ACM, ACM-SDK Ability to access the local, need to modify the host file, bind the local domain name to the local IP 127.0.0.1.

```
vim /etc/hosts Add 127.0.0.1 acm.aliyun.com
```

2. Prepare ACM-SDK testing cases.

Fill in the dataID and group of the created configuration in ACM-SDK. Successful retrieval of configuration indicates that the ACM local testing environment has been deployed successfully. The local test environment was deployed successfully.

```
public class ACMTest { public static void main(String[] args) throws ConfigException, InterruptedException { // Initialize the configuration service, and the console automatically obtains the following parameters via the sample code. The input parameters are respectively endpoint, namespace, accessKey, secretKey (private key of ACM, rather than that of Alibaba Cloud) ConfigService.init("acm.aliyun.com", "", "", ""); String content = ConfigService.getConfig("acm.test", "DEFAULT_GROUP", 6000); System.out.println(content); // Add listeners to the configuration during initialization, which calls back a notification. ConfigService.addListener("acm.test", "DEFAULT_GROUP", new ConfigChangeListener() { public void receiveConfigInfo(String configInfo) { When the configuration is updated, use this callback function to output the newest value to the user. // Remember not to make blocking operations by callback function, which otherwise would cause the notification thread to block. System.out.println(configInfo); } }); // sleep does not give way to the main thread Thread.sleep(100000); } }
```