

# Alibaba Cloud Application Configuration Management

User Guide

Issue: 20190909

## Legal disclaimer

---

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.
2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company, or individual in any form or by any means without the prior written consent of Alibaba Cloud.
3. The content of this document may be changed due to product version upgrades, adjustments, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and the updated versions of this document will be occasionally released through Alibaba Cloud-authorized channels. You shall pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.
4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides the document in the context that Alibaba Cloud products and services are provided on an "as is", "with all faults" and "as available" basis. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not bear any liability for any errors or financial losses incurred by any organizations, companies, or individuals arising from their download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, bear responsibility for any indirect, consequential, exemplary, incidental, special, or punitive damages, including lost profits arising from the use

or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.

5. By law, all the content of the Alibaba Cloud website, including but not limited to works, products, images, archives, information, materials, website architecture, website graphic layout, and webpage design, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of the Alibaba Cloud website, product programs, or content shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates).
6. Please contact Alibaba Cloud directly if you discover any errors in this document.



## Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 <b>Notice:</b> Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
<b>Bold</b>	It is used for buttons, menus, page names, and other UI elements.	Click OK.
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[ ] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<b><code>{}</code> or <code>{a b}</code></b>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand   slave}</code>



# Contents

---

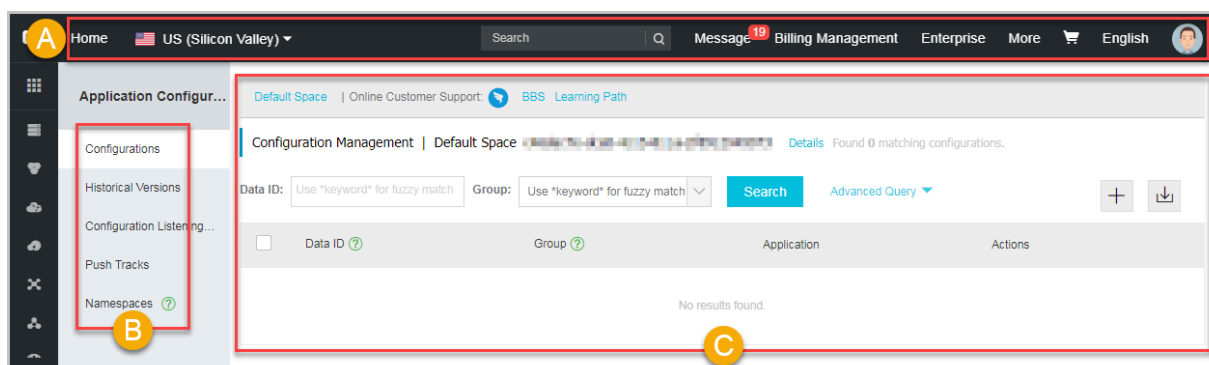
Legal disclaimer.....	I
Generic conventions.....	I
1 ACM console introduction.....	1
2 Select a region.....	2
3 Create configuration.....	3
4 Managing configurations.....	6
5 Query and rollback versions.....	10
6 View push status.....	12
7 Push track query.....	14
8 Create a namespace.....	16
9 Create and use encrypted configuration.....	17

# 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:

Figure 1-1: 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.

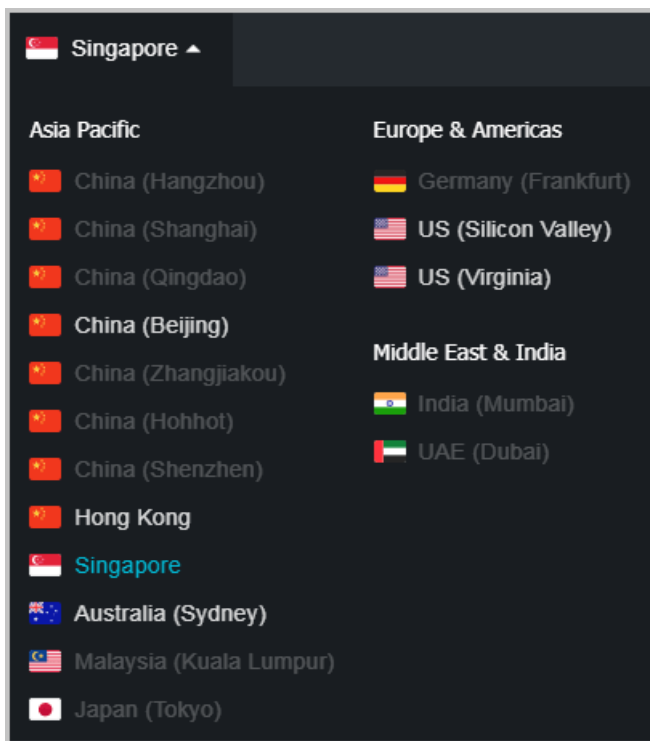
## 2 Select a region

---

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.

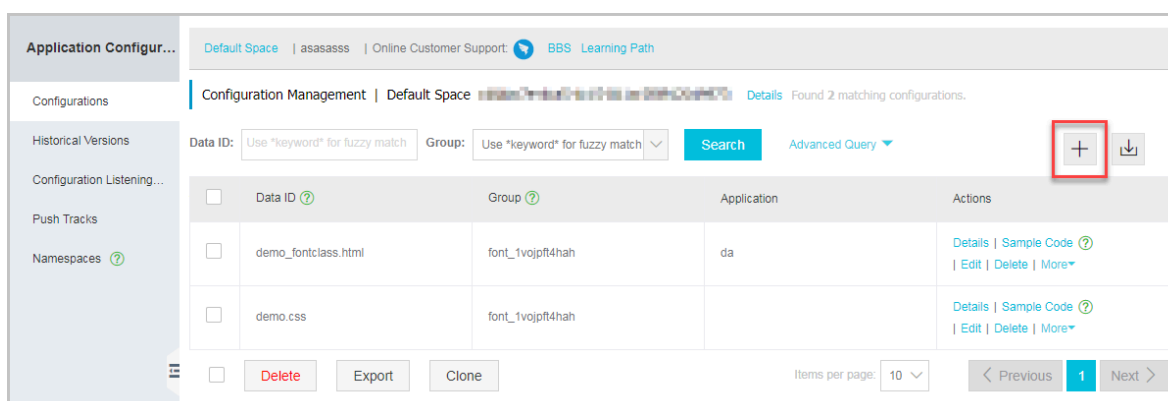


## 3 Create configuration

Some variables and parameters can be extracted from code to be managed in a configuration file. The configuration can be retrieved from the configuration file when the code is executed. By doing so, you can change parameters quickly and reduce the code maintenance costs. This topic explains how to create a configuration.

### 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, select Configurations, and then click the + icon on the right.



The Create Configuration page is displayed.

3. Enter the configuration information on the page according to the following table, and click Publish.

**Note:**

In ACM, the data model for a configuration is `< Namespace + DataId + Group , Content >`. You don't need to apply for the `DataId` or `Group`, as long as they're unique in a [namespace](#).

Table 3-1: Fields of the Create Configuration page

Field	Description
Data ID	Configuration ID. Use a naming rule like <i>package.class</i> (for example, <i>com.taobao.tc.refund.log.level</i> ) to ensure global uniqueness. It is recommended to indicate business meaning of the configuration in the “class” section. All characters must be in lower case. Only English characters and four special characters (".", ":", "-", and "_") are allowed. It must not exceed 256 bytes.
Group	Configuration group (namespace). We recommend that you use product name (for example ACM) or module name to guarantee the uniqueness. You can perform authentication by group. Only English characters and four special characters (".", ":", "-", and "_") are allowed. It must not exceed 128 bytes.
Tags	You can use tags to manage configurations according to your own dimensions. Up to 5 tags are allowed, and the maximum length of each tag is 32 characters.
Description	Configure description information to help others understand the meaning of the configuration. Up to 128 characters are allowed.

Field	Description
Application	Name of the application associated with the configuration. Only English characters and four special characters (".", ":", "-", "_") are allowed.
Target Region	Most users publish the configuration to the current region only. To publish the configuration to multiple regions, select all target regions.
Data Encryption	If the configuration contains sensitive data, we recommend that you use encrypted storage function to minimize the risk of data leakage. You must activate Key Management Service (KMS), and authorize ACM to encrypt and decrypt with your KMS before you can use this function, because ACM data encryption function uses KMS to encrypt configurations. Note that the Data ID of an encrypted configuration always begins with <code>cipher -</code> . For more information, see <a href="#">#unique_7</a> .
Format	Select a format to have ACM validate the syntax and format for you.
Configuration Body	The body of the configuration. A size of less than 10 KB is preferred, and do not exceed 100 KB at the maximum.

#### Related documents

[Namespaces](#)

[#unique\\_7](#)

## 4 Managing configurations

---

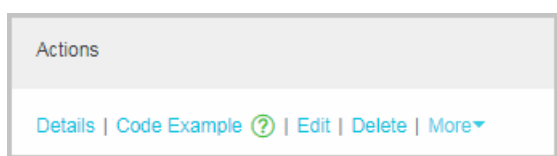
After you create a configuration item, you can use the configuration in the code. You may need to change configurations, so the ACM console is frequently used. You can search for, view, edit, and delete configurations in the ACM console.

### 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.

### Configuration Details

• Data ID:

com.acm.myapp.app.cfg

[Show Advanced Options](#)

Description:

• Region:

us-west-1

• MD5:

Data Encryption:

☐ Off

• Configuration

Body:

threadPoolSize=5  
logLevel=WARN

Back

## Edit configurations

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

## Edit Configuration

\* Data

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 Format field before editing the configuration content.
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 Publish to open the content comparison dialog box.
Beta Publish	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 Beta Publish 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.

## 5 Query and rollback versions

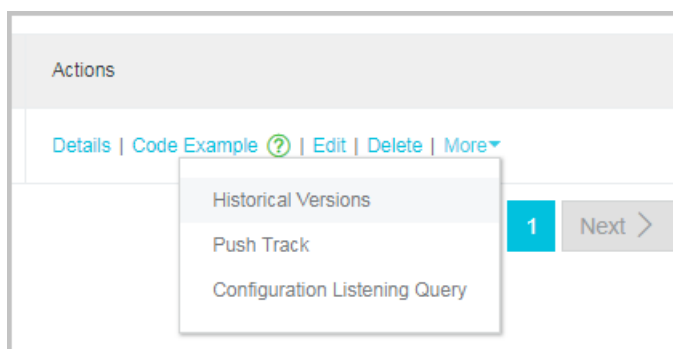
If you made a mistake when changing a configuration item, you need to roll back immediately. ACM supports querying configuration change history and rolling back configurations.

### Procedure

1. Log on to the [ACM console](#), and select a region as needed in the upper-left corner.
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:**

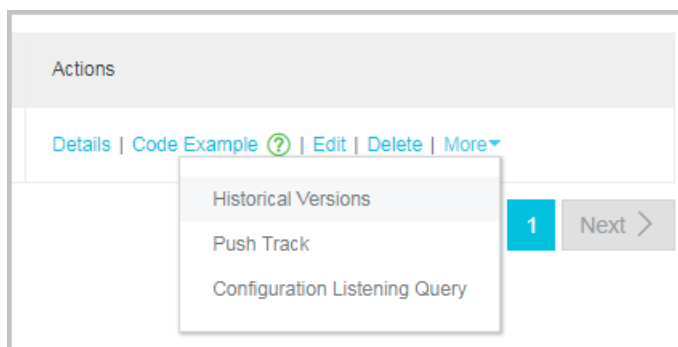
ACM currently saves change histories of up to 30 days.

## 6 View push status

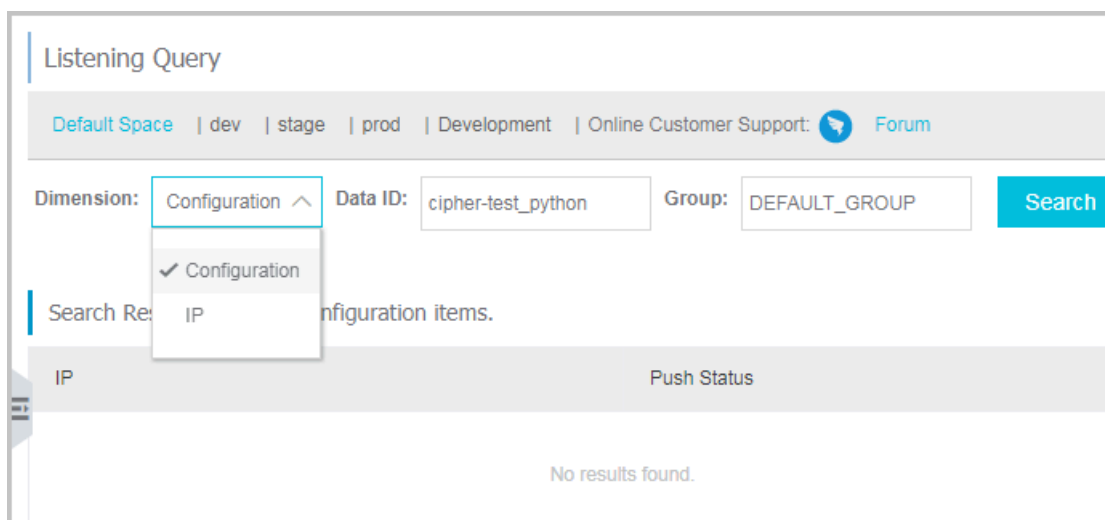
After changing a configuration, you might want to check whether the changed configuration has been pushed to the machine which is listening for this configuration. This query is only effective for clients that use the configuration listening API to listen for configurations.

### Procedure

1. 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, 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:**

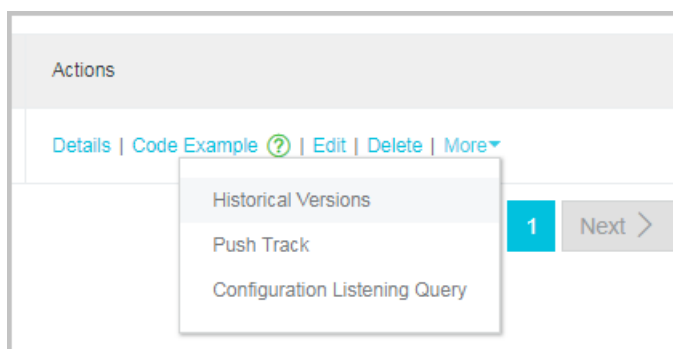
- If the dimension is set to Configuration: search the machines to which this configuration is pushed and the push status.
- If the dimension is set to IP: search the list of configurations that this machine listens for.

## 7 Push track query

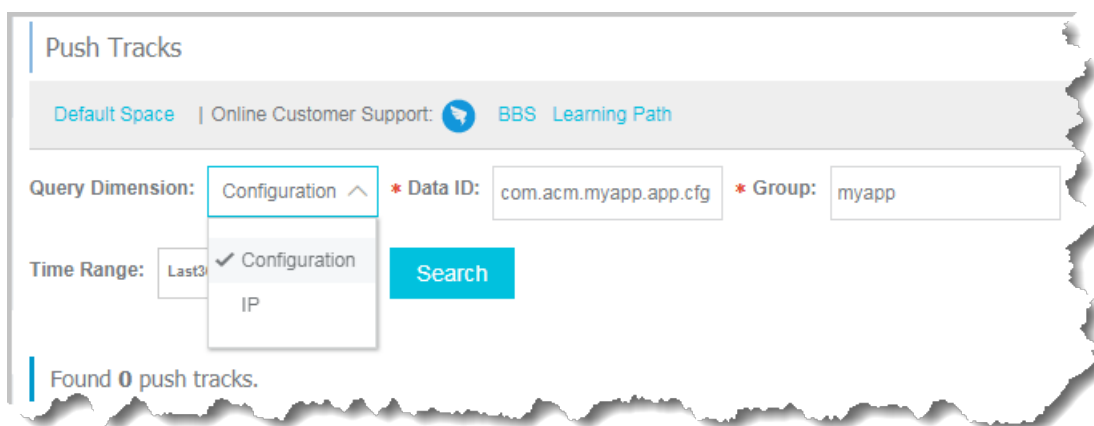
After changing a configuration, you can check whether the configuration has been successfully pushed according to the push track. If you find that the changed configuration does not take effect on a machine, you can follow the push track to check whether the configuration has been pushed to the machine.

### Procedure

1. 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.  
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.

## 8 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.

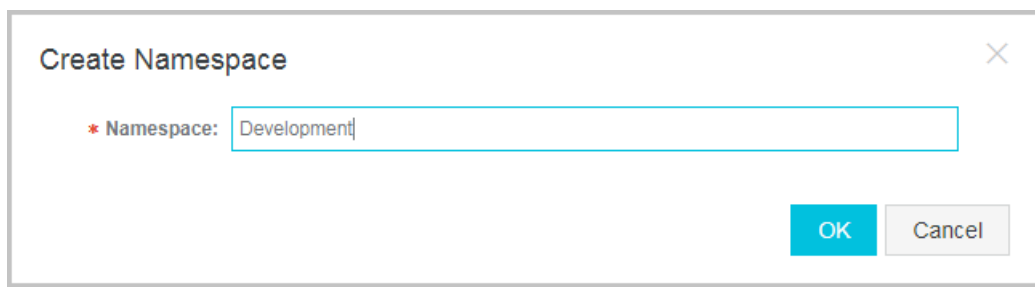
### Procedure

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.

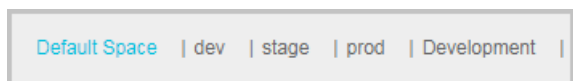


#### Note:

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.

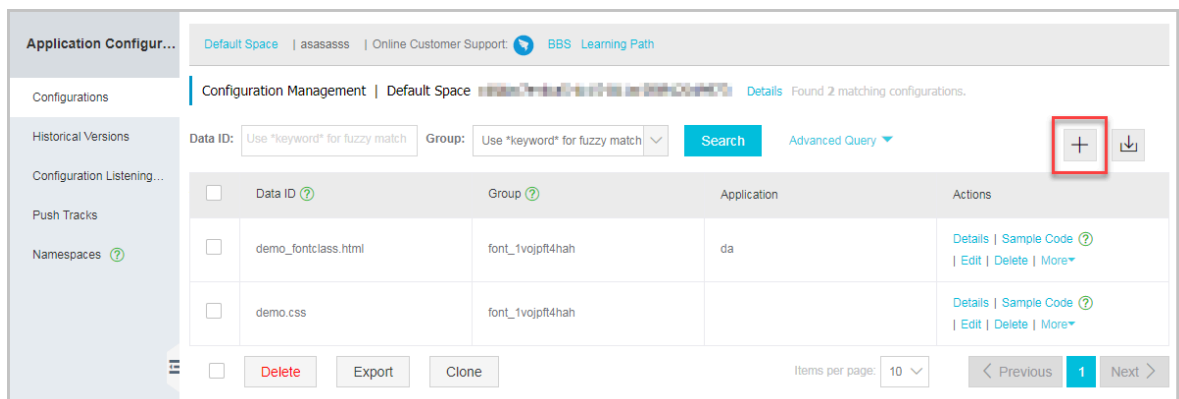
A screenshot of a horizontal bar used for selecting a namespace. It contains several items separated by vertical bars: 'Default Space', 'dev', 'stage', 'prod', and 'Development'. The 'Development' item is highlighted with a blue background.

## 9 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.



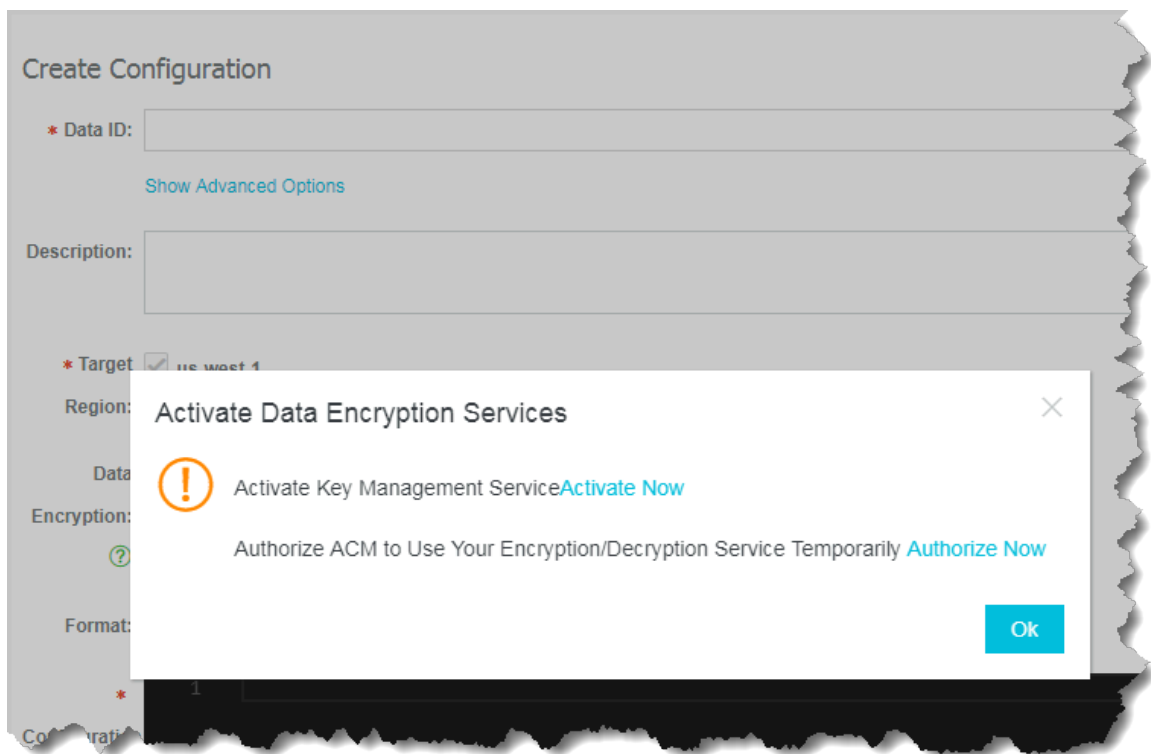
3. On the Create Configuration page, switch on Data Encryption.



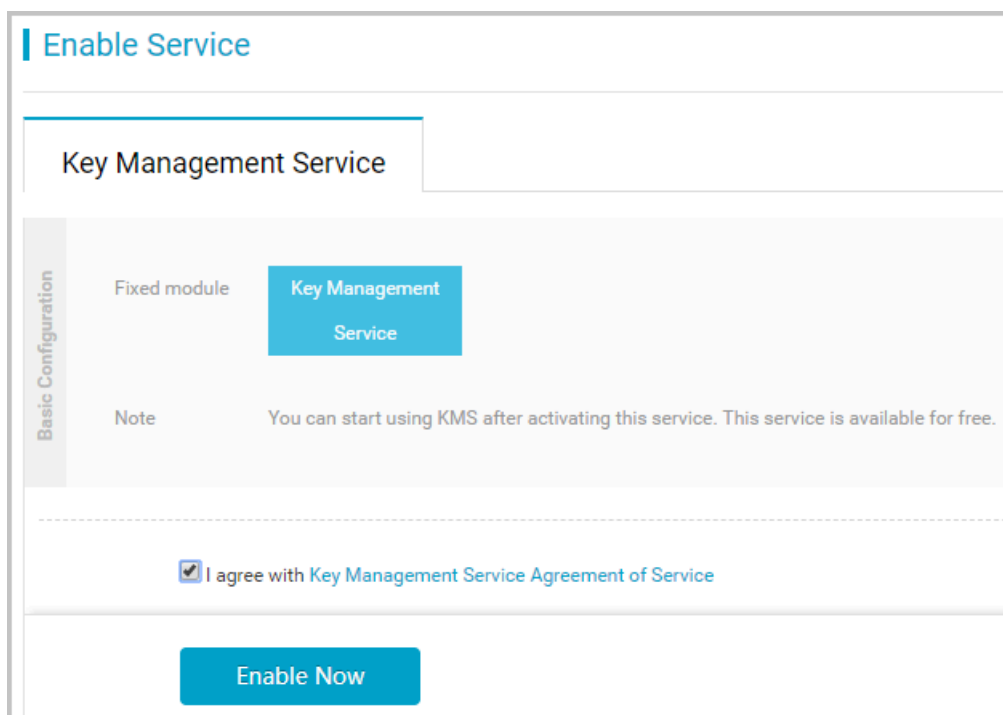
#### Note:

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.

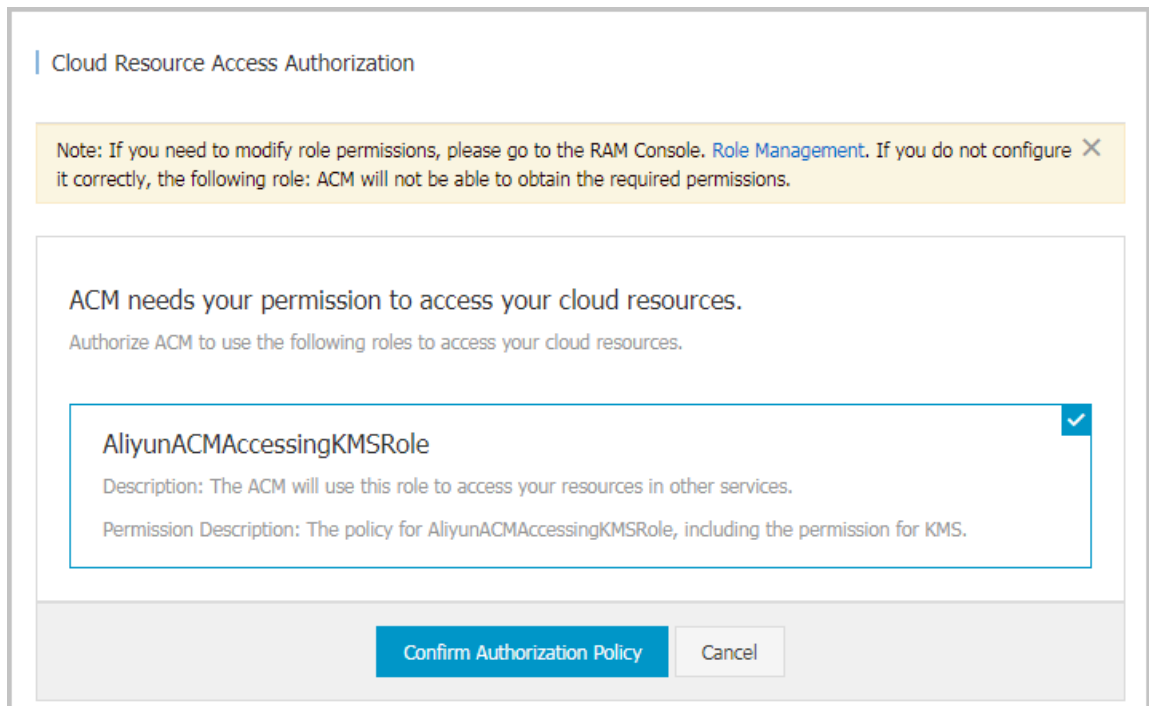
4. In the Activate Data Encryption Services dialog box, perform the following steps.



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



- b. 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 [#unique\\_14](#).