Secrets Manager

Operation Guide

Product Documentation

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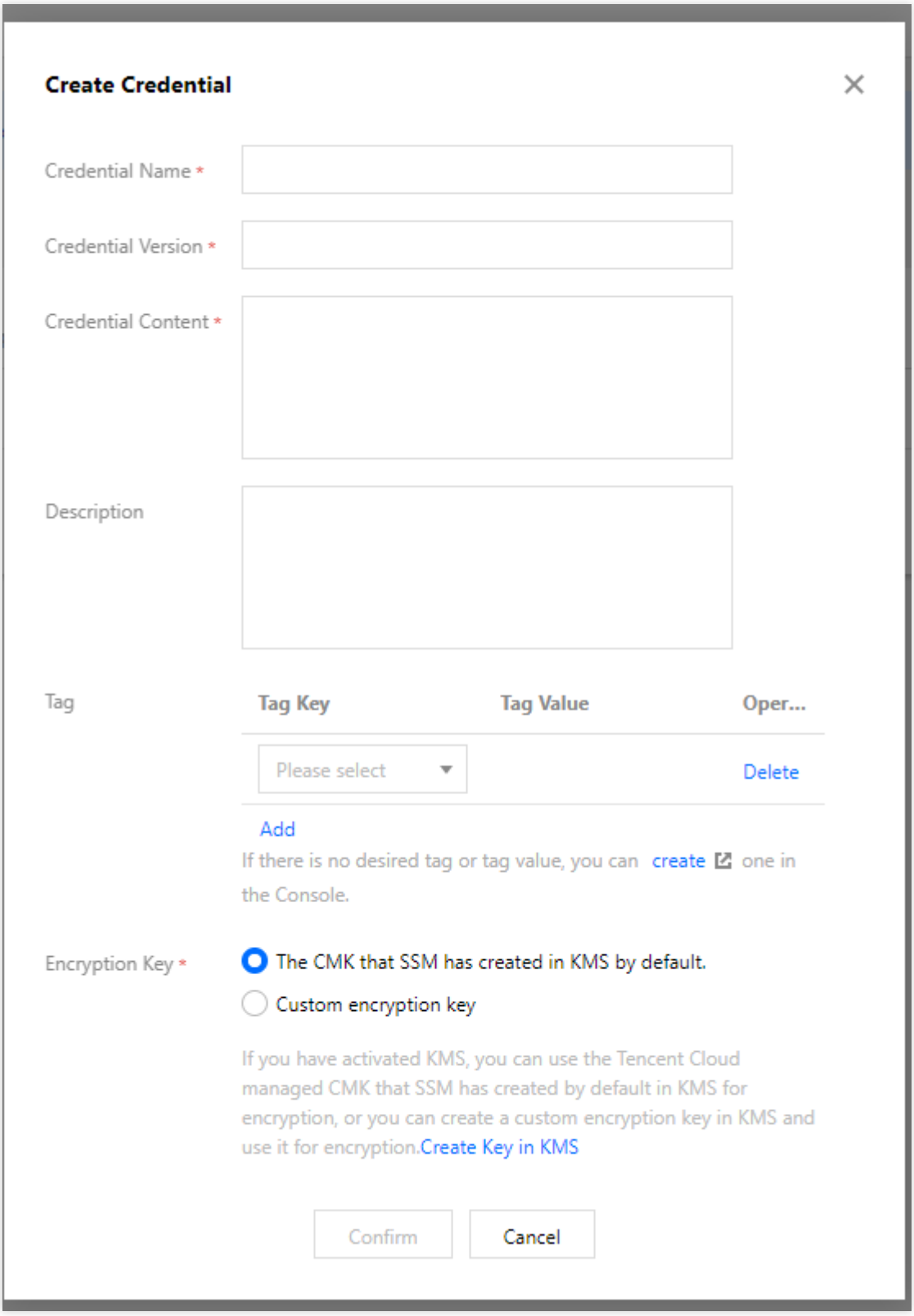
Scenarios

You can create a secret in the SSM console. After creation, you can manage the secret by enabling, disabling, editing, and scheduling deletion.

Directions

1. Log in to the SSM Console and click **Custom Secret** on the left sidebar.
2. In the upper left corner, choose a region and click **Create** to create a secret.
3. Enter the configuration in the pop-up **Create Credential** window and then click **Confirm** to return to the **Credential List**. The newly created secret will be at the top of the credential list.



Field description:

Credential Name: its length can be 1-128 bytes, containing letters, digits, hyphens (-), and underscores (_). It must start with a letter or digit.

Credential Version: required.

Credential Content: required.

Description: optional.

Tag: optional.

Encryption Key:

Use the default CMK that SSM has created in KMS.

Use a custom encryption key.

Note:

If you are using SSM, you have activated KMS. You can create an encryption key in either of the following ways:

Use the default Tencent Cloud managed CMK created in the KMS console as the encryption key, and use the envelope encryption method for encrypted storage.

Use a custom key created in the KMS console as the encryption key for encrypted storage.

Editing a Secret

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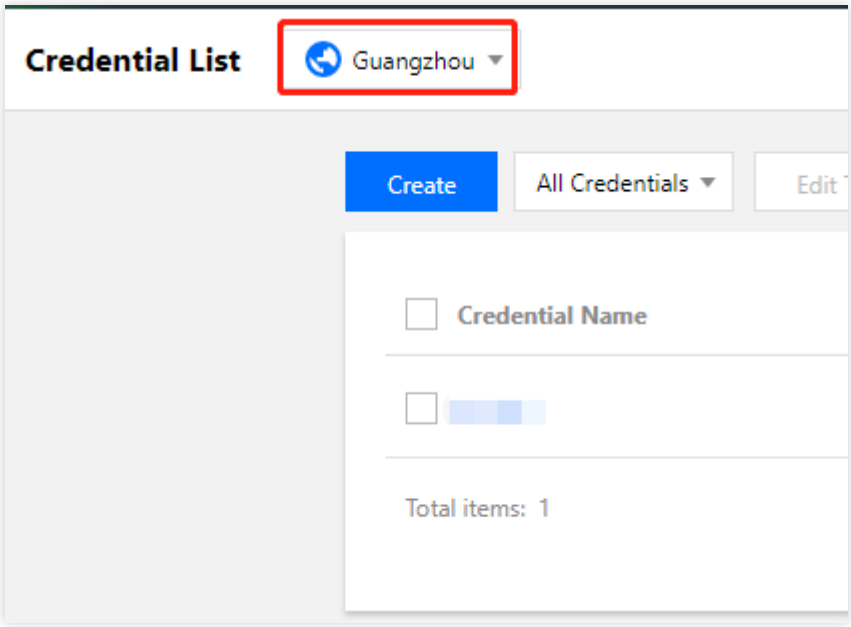
Overview

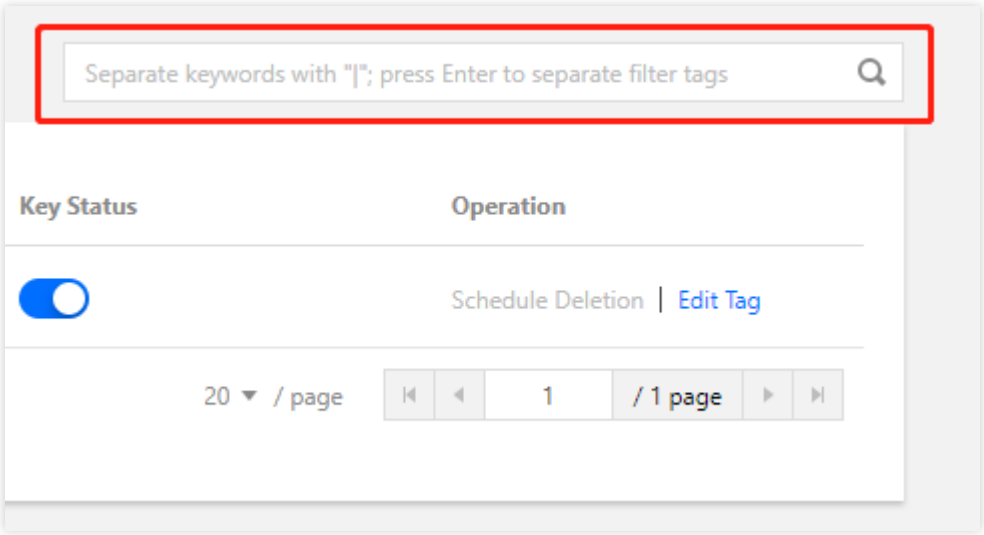
You can log in to the Tencent Cloud SSM console to view and edit the secret information list, secret name, status, region, and other information.

Editing a Secret

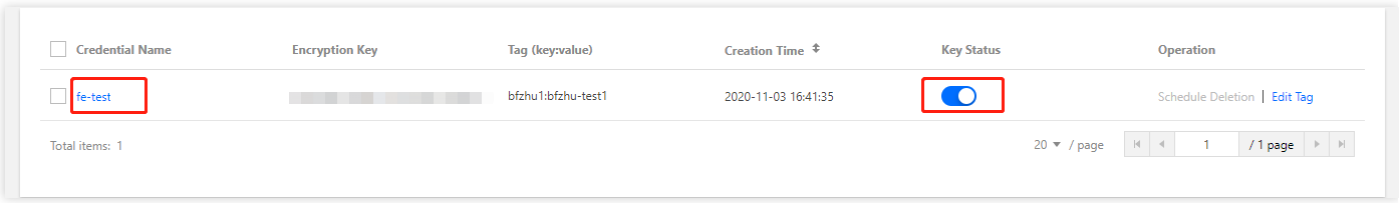
1. Log in to the SSM console and click **Credential List** in the left sidebar. You can switch between regions on the upper left corner of the page to view and edit secrets in other regions.



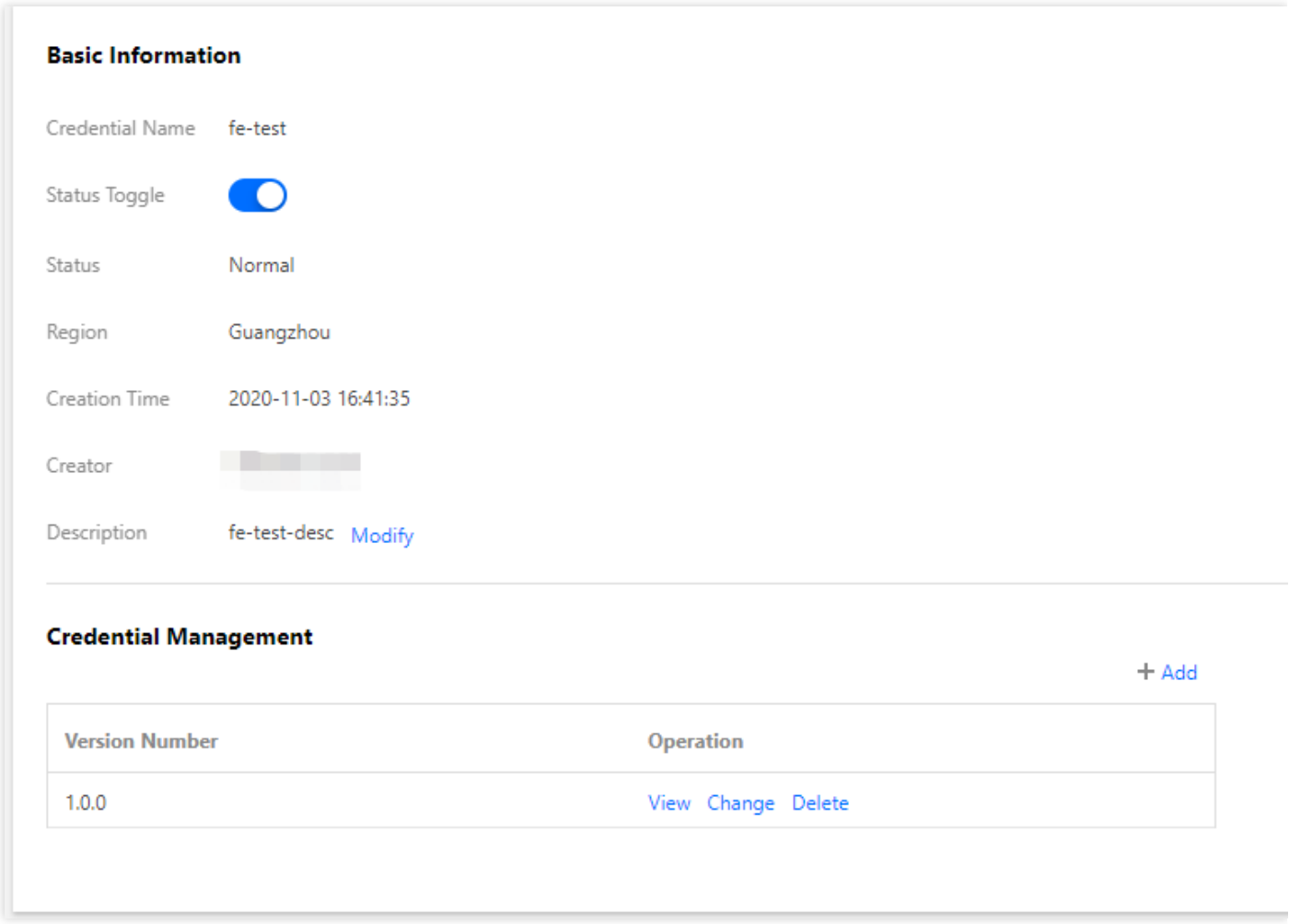
2. In the search box on the right, enter the full or partial name of the secret to search for the target secret.



3. Click the name of the secret to view the detailed information about the secret. You can enable or disable the key of the secret.



4. Go to the secret details page to view information about the secret, such as the credential name, status, description, and version. You can also update, delete, and manage secret versions, and perform other operations.



Managing Multiple Secret Versions

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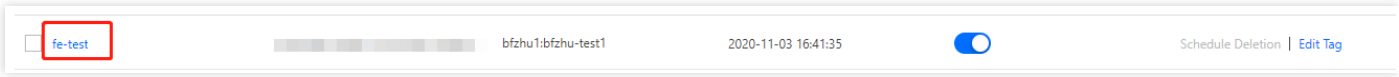
Overview

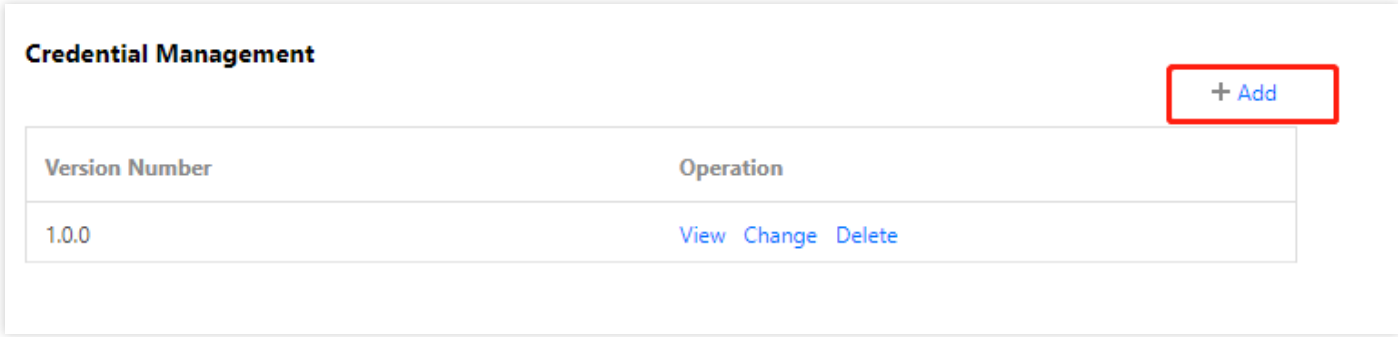
SSM allows you to manage multiple versions of secrets. You can leverage this feature to rotate secrets at the application layer in beta tests.

Directions

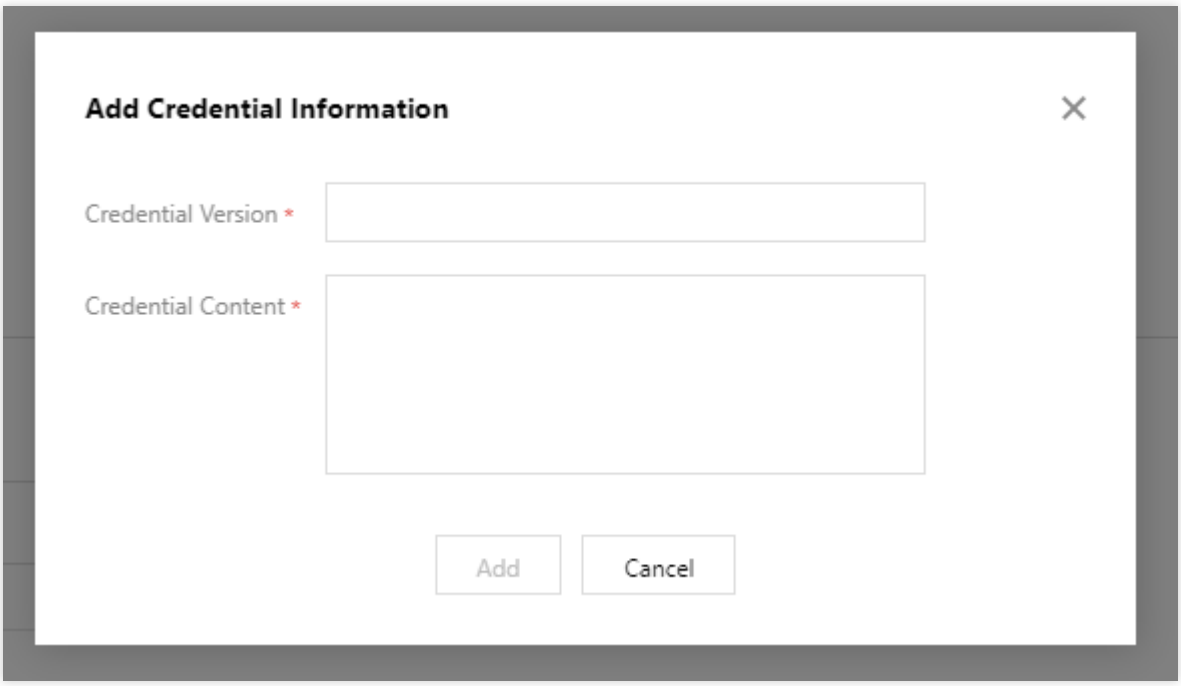
1. Log in to the SSM console and click **Credential List** in the left sidebar. You can switch between regions on the upper left corner of the page to find the secret to which you want to add a version. You can click the name of the secret to go to the **Basic Information** page.



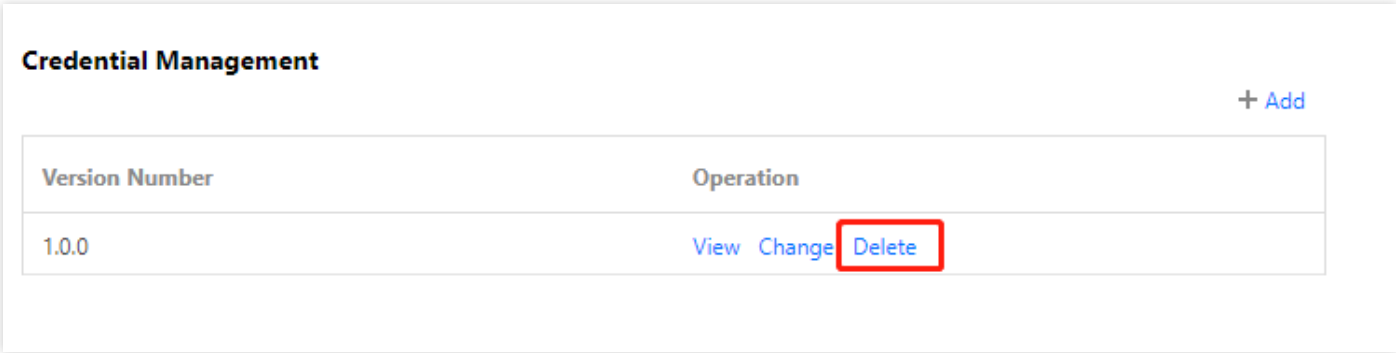
2. In the **Credential Management** module, click **Add** to go to the **Add Credential Information** page.



3. On the **Add Credential Information** page, enter the credential version and credential content, and then click **Add**.



4. If you want to delete an added secret, you can click **Delete** in the **Operation** column to the right of the unwanted version, and then click **Delete** to confirm the deletion.



Note：
Each secret can have a maximum of 10 versions at the same time.

Deleting a Secret

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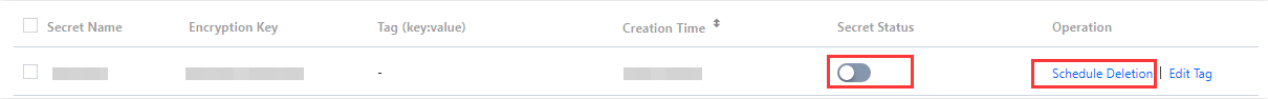
Note

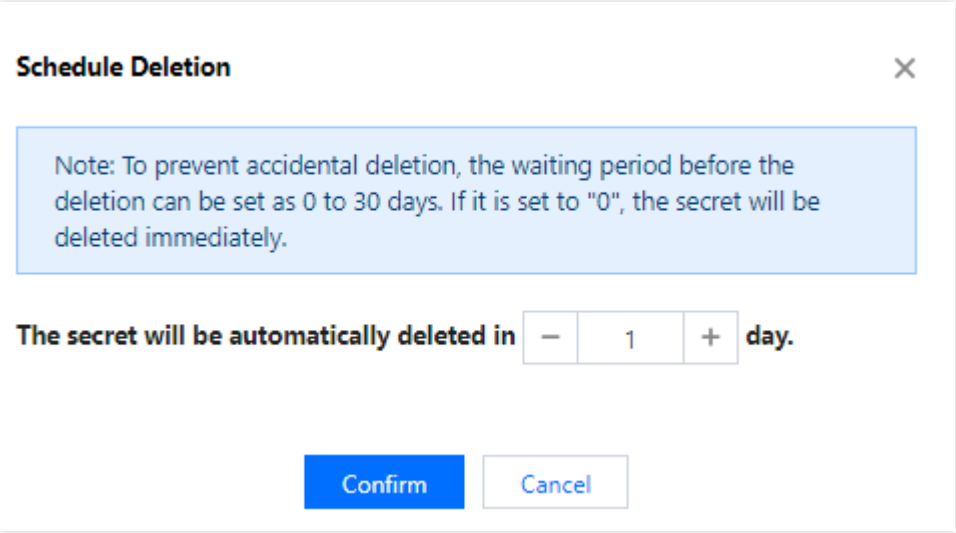
SSM provides the schedule deletion feature against accidental secret deletions. Each deletion has **a mandatory waiting period of 0-30 days**, that is, there will be 0-30 days to wait before the deletion becomes permanent. Once deleted, a secret **cannot be restored**, and all of its content **cannot be called**.

Directions

1. Log in to the SSM Console and click **Secret List** on the left sidebar. You can switch between regions in the upper left corner of the page to view secrets in other regions as needed.
2. Select the secret to be deleted on schedule in the **Secret List**. If the secret is enabled, you need to disable it first and then click **Schedule Deletion** in the **Operation** column.



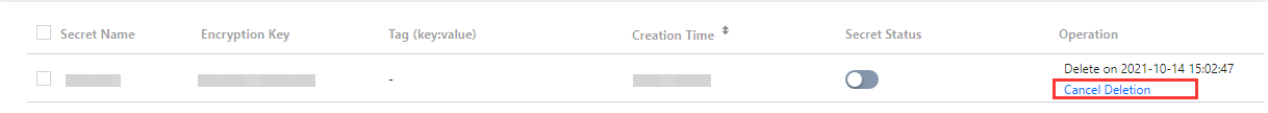
3. Set the number of schedule deletion days and then click **Confirm**. The secret will be deleted after the set number of days.



Note:

If the waiting period is set to "0", the secret will be deleted immediately.

4. The deletion of a secret can be canceled within the waiting period (1-30 days). You can click **Cancel Deletion** in the **Operation** column on the right. After the deletion is canceled, the secret key will be restored to the "enabled" status. You can disable, edit, delete, or perform other operations on the secret.



Database Credential Overview

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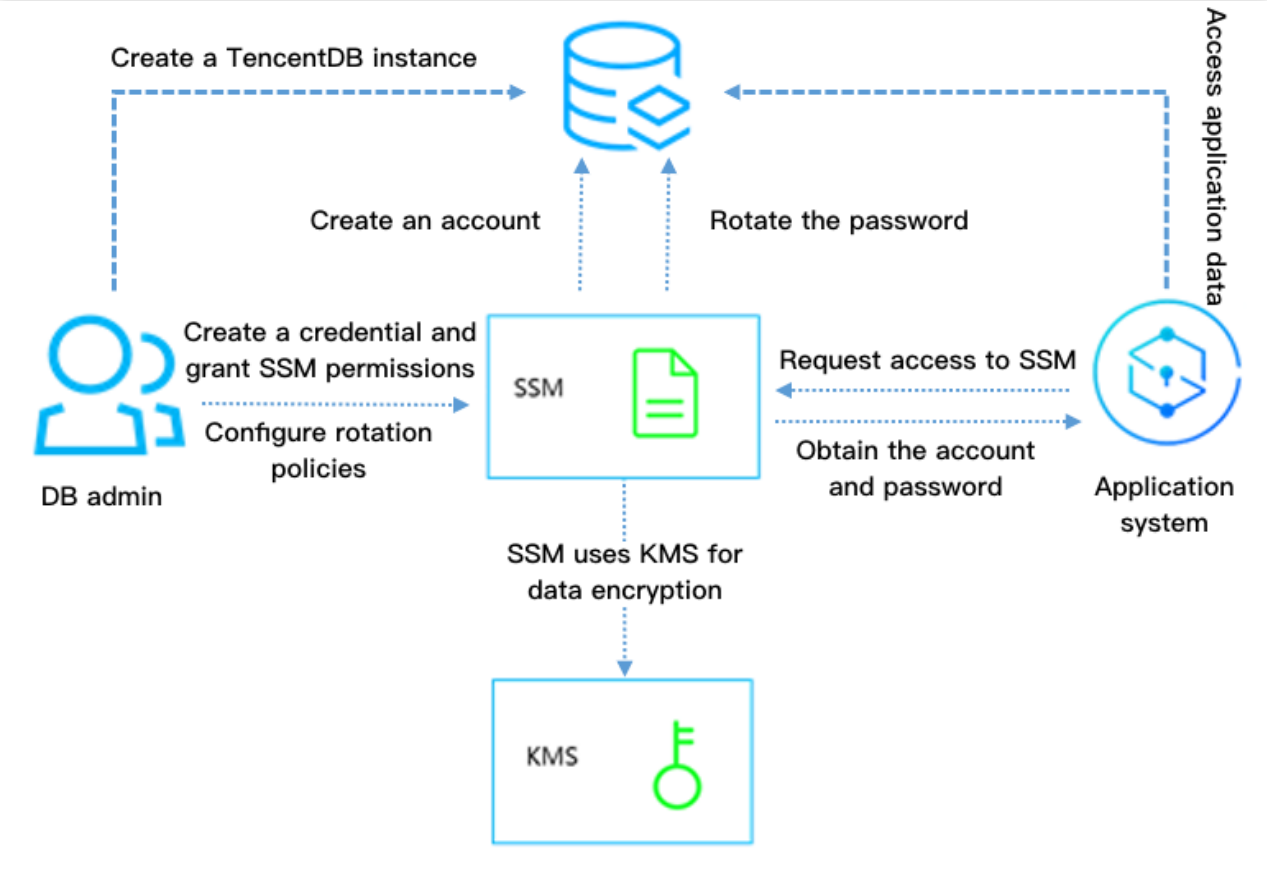
There are security challenges your account may face, such as improper use of management permission, your password unchanged for a long time, and key information in plaintext, leading to a loss of digital assets. Given these risks, **database credentials** will be periodically rotated to create strong passwords and manage sensitive configuration information, securing your data while reducing security risks and threats to your account.

Key Features

SSM allows the application and distribution of database accounts on the console.
Combing with Tencent Cloud KMS, SSM can secure your sensitive information by encryption.
SSM can automatically create a strong password for periodic rotation.
SSM enables you to set a period of time that automatic rotation repeats.

Product Architecture



Process Description

1. Create a database instance and set its account and password as an admin.
2. Create a database credential object on SSM as an admin.
Grant SSM permissions to access MySQL management services.
Set the database credential's username prefix.
Configure the automatic rotation policy.
3. When the application system needs to access the database, it can request access to the credential via the GetSecretValue API. For details, see GetSecretValue.
4. The application system parses the plaintext credential based on the content returned by the API, and obtains its account and password, thereby accessing the target database.

Usage Limits

Automatic rotation is only available on **TencentDB for MySQL** and **TDSQL for MySQL**.

Usage Guide

Instructions

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Prerequisites

You have created a database credential. If haven't, see Creating a Database Credential.
You have enabled rotation for the credential. If haven't, see Enabling a Database Credential.

Rotation Effect

SSM rotates accounts and passwords stored in the credential upon a periodical rotation preset by the user, so that the client can obtain the newest account and password by calling GetSecretValue.
The rotation does not affect the credential's access to the corresponding database using the newest account and password, as SSM synchronizes the account and password information to the database.

Integrating Application with SSM

Only by calling GetSecretValue, the application can obtain the newest account and password for database access.

Risk Notice

Risk

The database credential's account password has been updated after the periodical rotation. If you access the database with the expired password, an access failure occurs.

Solution

To prevent access failure, do not enable the client to save passwords automatically. Also, use Tencent Cloud's SSM SDK (Go and Python) recommended in **Best Practices** instead of a third-party SDK that implements database connection pooling.

Creating a Database Credential

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Scenarios

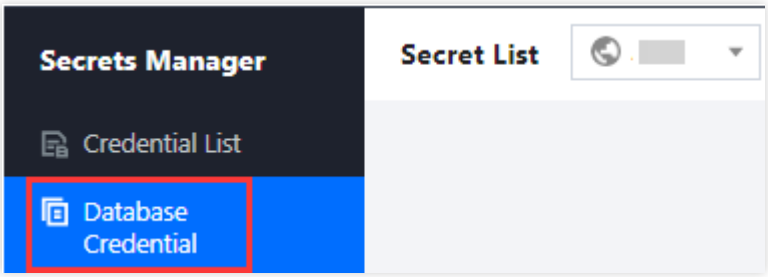
You want to enable rotation and encryption for database credential created in the SSM console, securing your data while reducing disclosure risks and security threats to your account.

Prerequisites

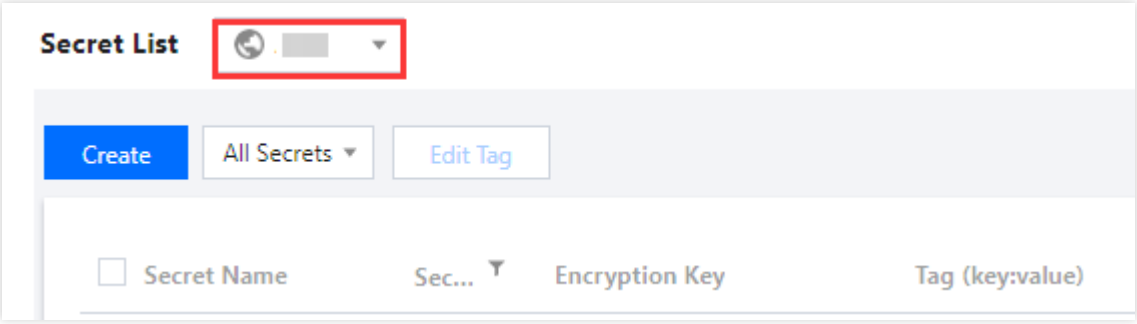
Before using database credentials, please note the following prerequisites:
You have enabled KMS services, as SSM encrypts data based on keys managed in KMS.
You have created a TencentDB for MySQL instance or TDSQL for MySQL instance. For details, see Creating MySQL Instance, and Creating TDSQL Instance.

Directions

1. Log in to the SSM Console and click **Database Credential** on the left sidebar.

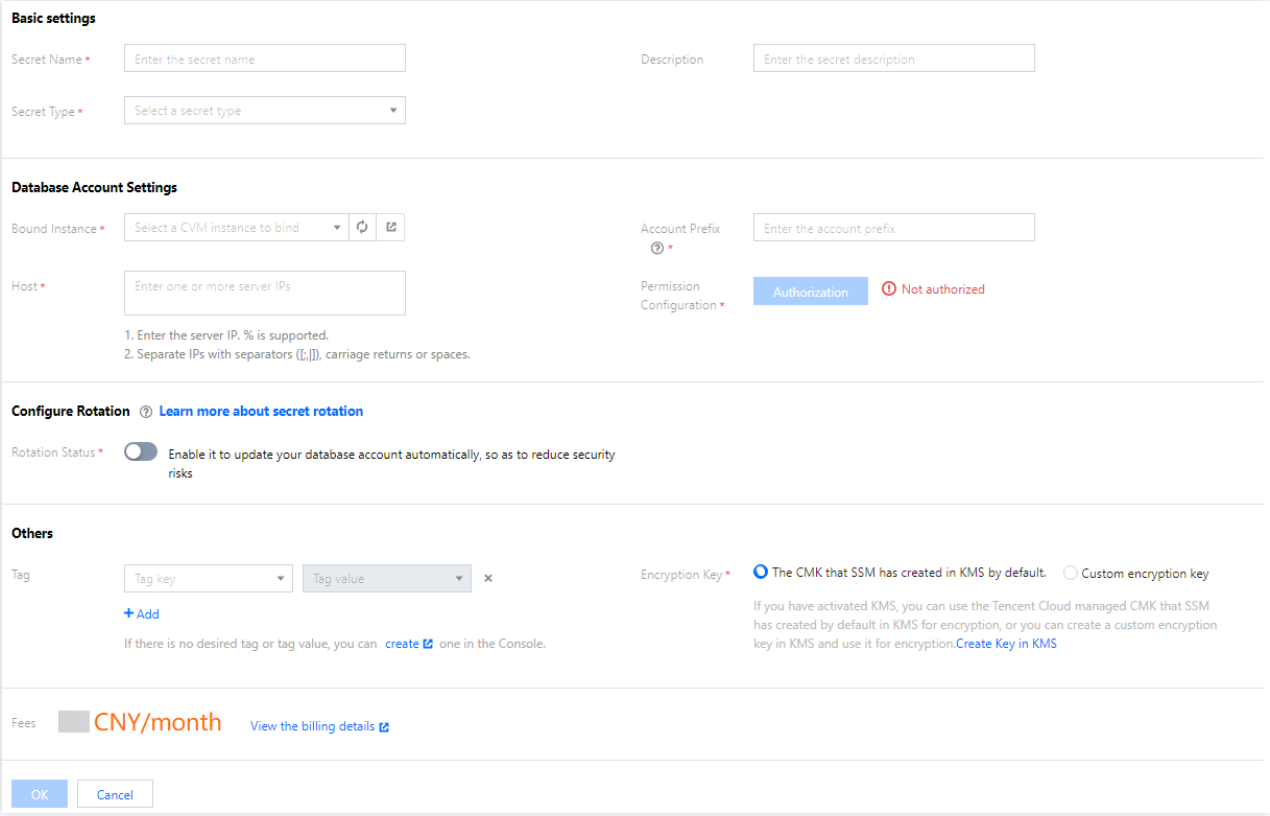


2. Click the drop-down button in the top left corner of the credential list to modify the region.



3. Click **Create** in the top left corner of the credential list.

4. Enter the information required to create a credential and click **OK**. The credential will be displayed at the top of the credential list.



Fields

Basic settings

Secret Name: supports 1–128 bytes of letters, digits, hyphens (-), and underscores (_). **It must start with a letter or digit**.

Description: contains information of a credential using up to 2048 bytes (optional).

Database account settings

Bound Instance: a MySQL instance or TDSQL instance of your choice.

Account Prefix: It contains 1-8 characters, including letters, digits and underscores (_). It must start with an upper- or lower-case letter.

Note:

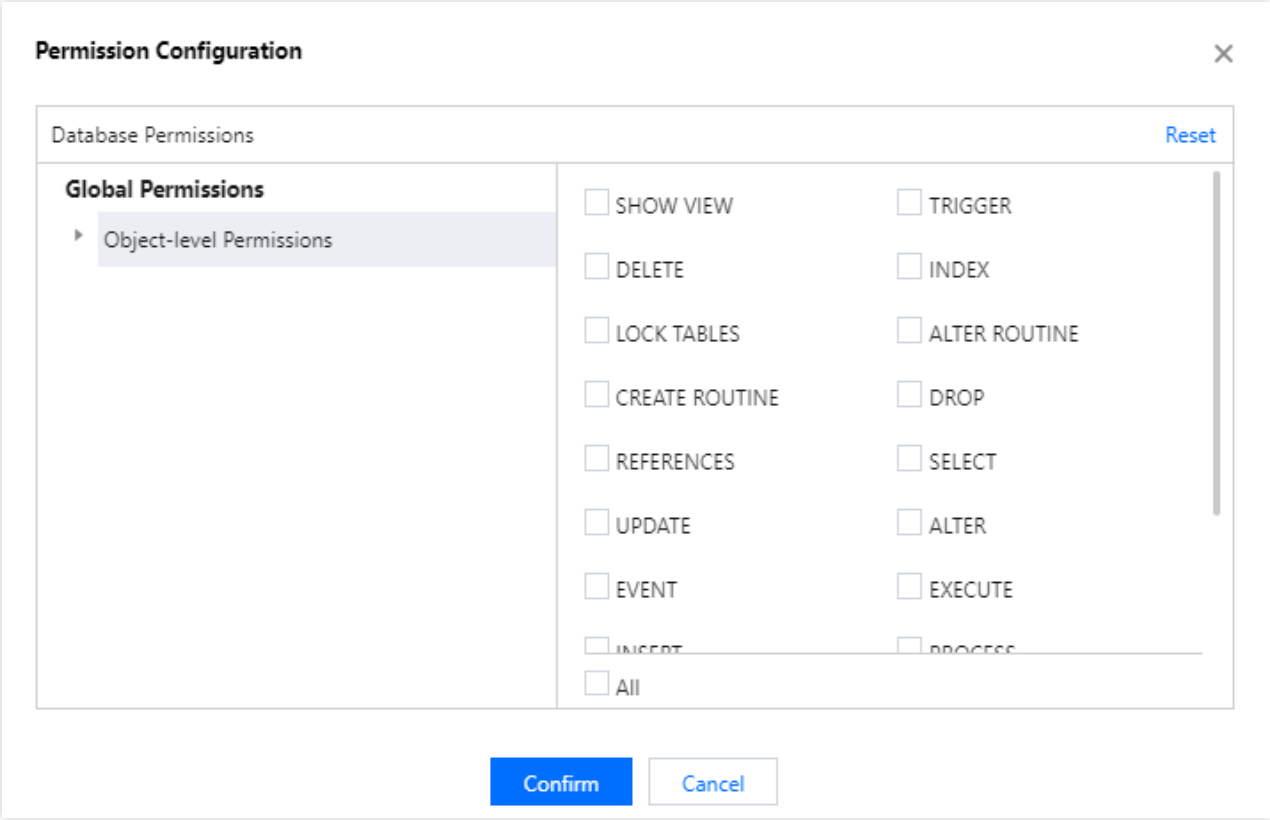
Two account names will be generated in the format of [prefix]*SSM*[three random digits]. These two account names will be shifted for rotation.

Server:

Must be in IP format. % is supported.

Multiple servers should be separated with a carriage return or space.

Authorization: enables you to set permissions on the database.



Rotation settings

Rotation Status: **with rotation enabled, SSM will update the database credential password periodically. It is recommended to enable rotation for safety**.

Rotation Cycle: ranges from 30 days to 365 days.

Next Rotation Start: **enables you to set the start time (in seconds) for next rotation as needed**.

Others

Tag: optional item.

Encryption Key:

Use the default CMK that SSM has created in KMS.

Use a custom encryption key.

Note:

If you are using SSM, you have activated KMS. You can create an encryption key in either of the following ways:

Use the default Tencent Cloud managed CMK created in the KMS console as encryption key, and use the envelope encryption method for encrypted storage.

Use a custom key created in the KMS console as encryption key for encrypted storage.

Editing a Database Credential

Last updated：2024-01-02 15:07:13

Overview

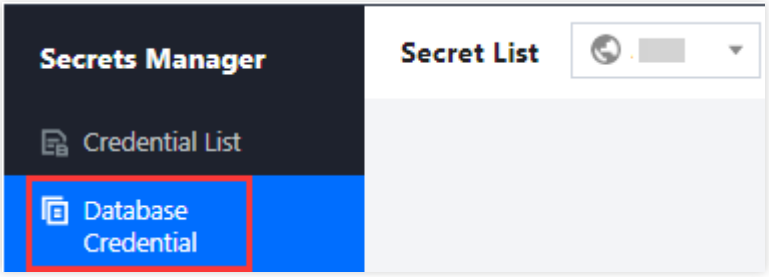
You can log in to the Tencent Cloud SSM console to view and edit information list, name, status, region and other details of the credential.

Prerequisites

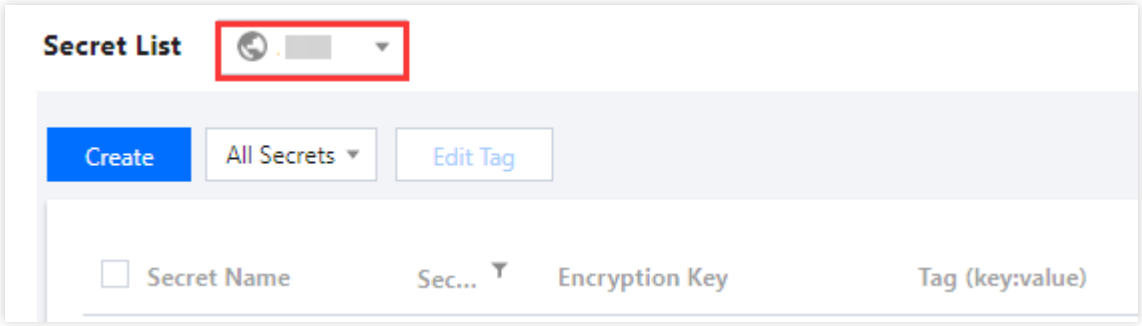
You have created your account and password in the SSM console.
You have created a database credential. If haven't, see Creating a Database Credential.

Directions

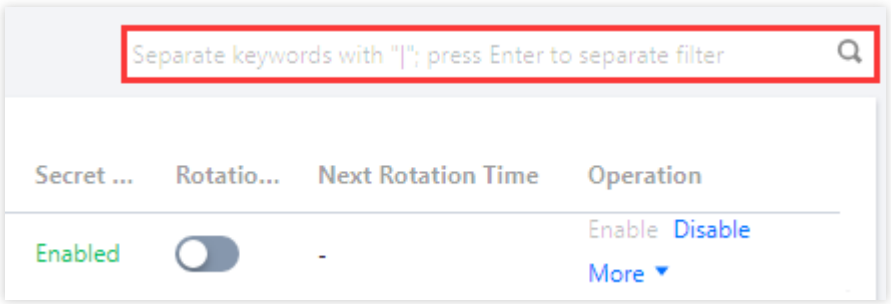
1. Log in to the SSM Console and click **Database Credential** on the left sidebar.



2. Click the drop-down button in the top left corner of the credential list to modify the region.



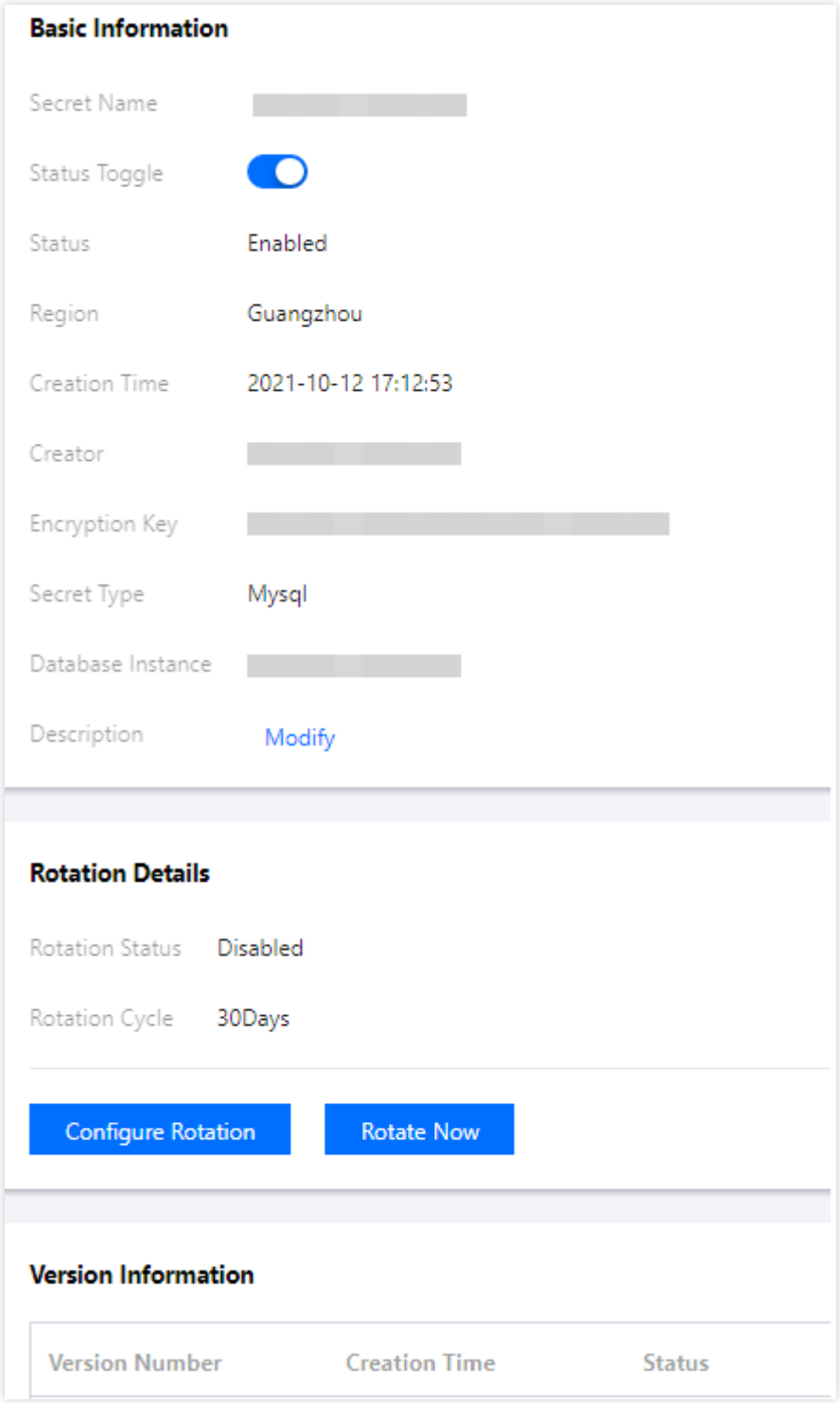
3. Search for a credential by entering keywords relevant to tags and credential names in the search box.



4. Click **Secret Name** to check the details of the credential.

Note:

You can enable or disable rotation by clicking **Rotation Status**. For details, see Modifying rotation information.



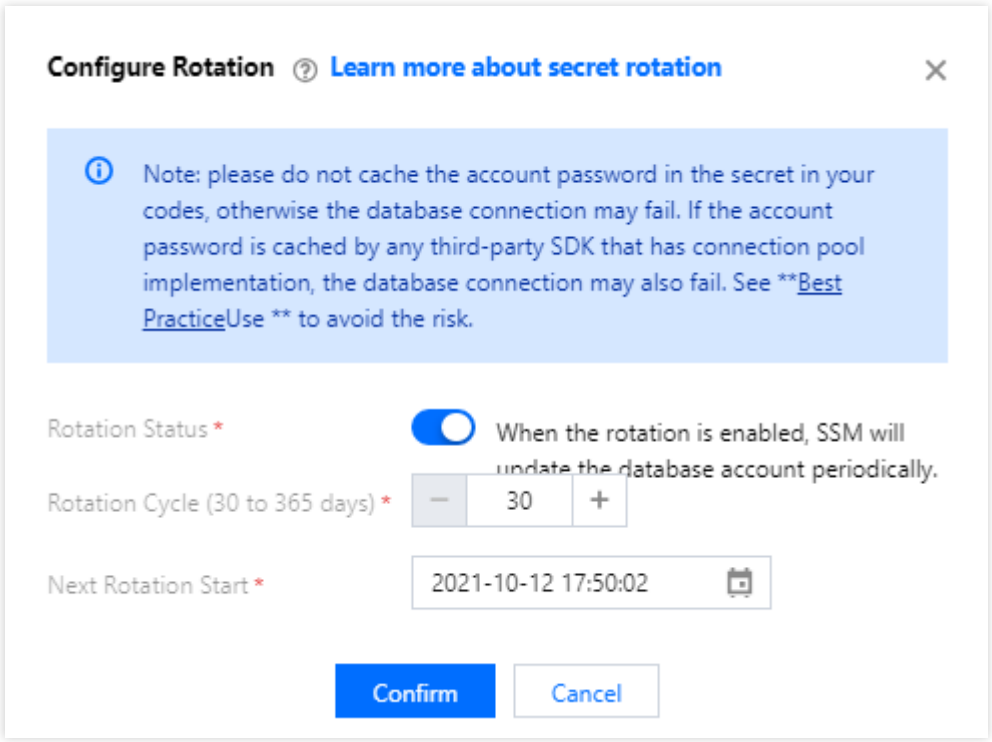
5. On the credential details page, you can modify the credential description and version information, enable/disable the credential, and set rotation.

Modifying basic information

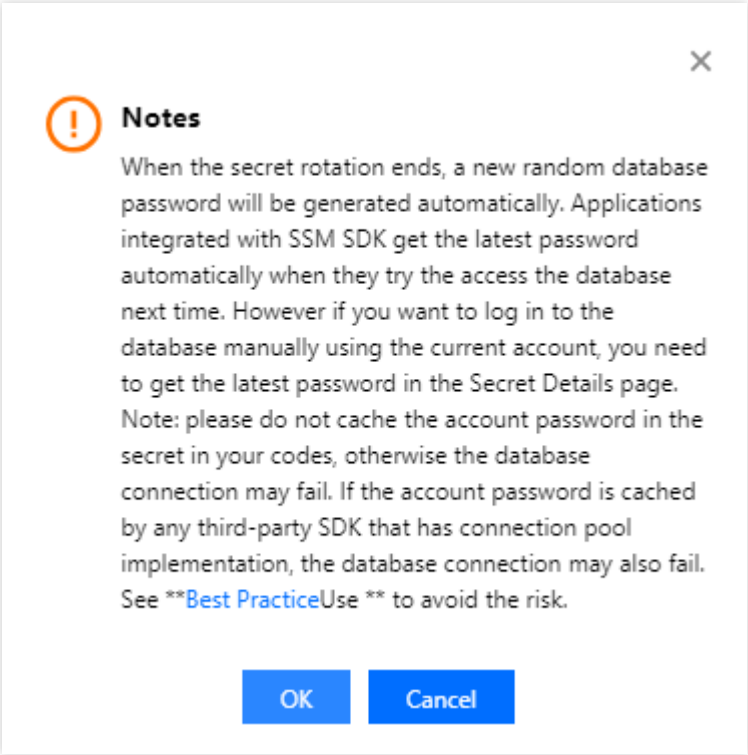
Secret Status can be changed by enabling the status toggle. If the toggle displays grayed out, the credential is disabled.
Description describes what the credential is used for. Maximum length: 2048 bytes. This is an optional field.

Modifying rotation information

The "Rotation Information" section displays the rotation status, rotation cycle, end time of last rotation and start time of next rotation (this information is available only when rotation is enabled).
Configure Rotation: Click this button to enter the rotation information including rotation cycle (from 30 to 365 days) and start time of next rotation (from current time plus 24 hours to current time plus 365 days) in the pop-up window.



Rotate Now: Click this button to read through a pop-up notice and then click **OK** to start rotation.
Note:
To start rotation, the rotation status must be enabled.

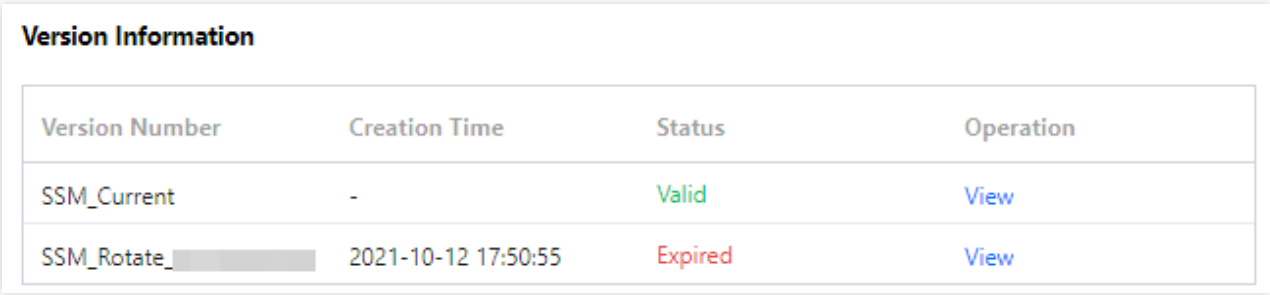


Version Information

The version number of a credential will be shown in the "Version Information" section. To check the credential's account name and password, you can click **View**.

Note:

The plaintext of the password is automatically obtained and updated by the SSM API. For security considerations, it is not recommended that you check the values of the managed credentials on the console.



Enabling a Database Credential

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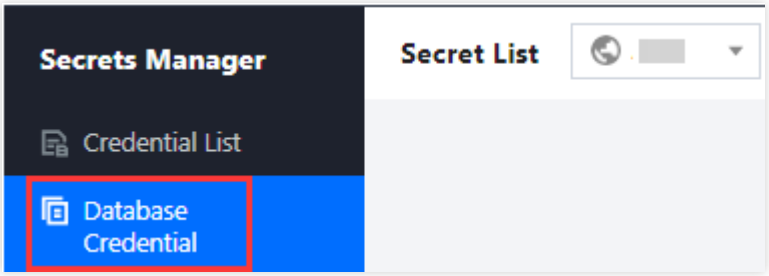
Prerequisites

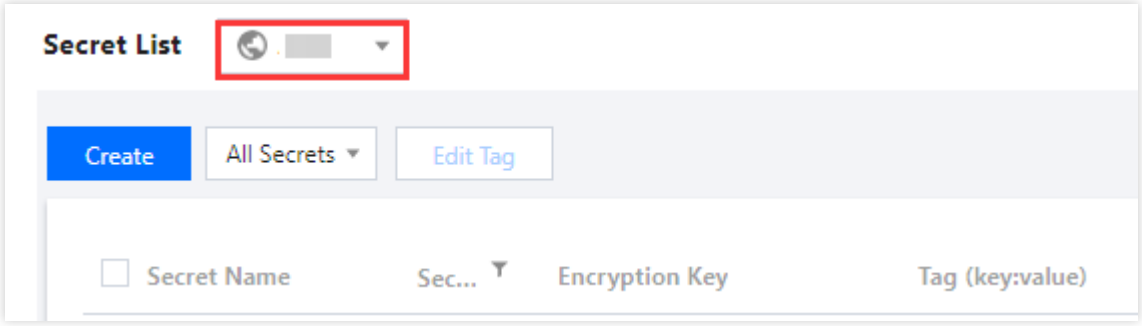
You have created your account and password in the SSM console.
You have created a database credential. If haven't, see Creating a Database Credential.

Directions

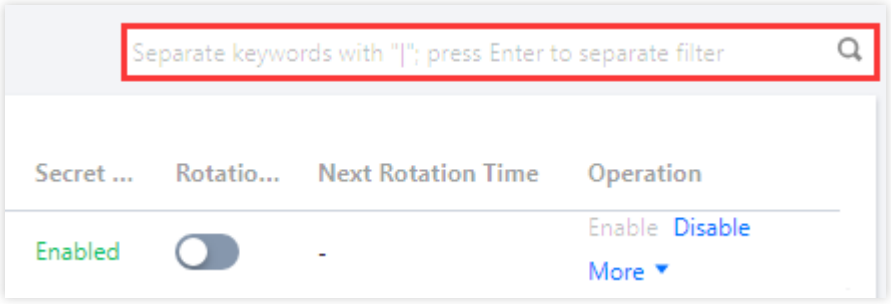
1. Log in to the SSM Console and click **Database Credential** on the left sidebar.



2. Click the drop-down button in the top left corner of the credential list to modify the region.



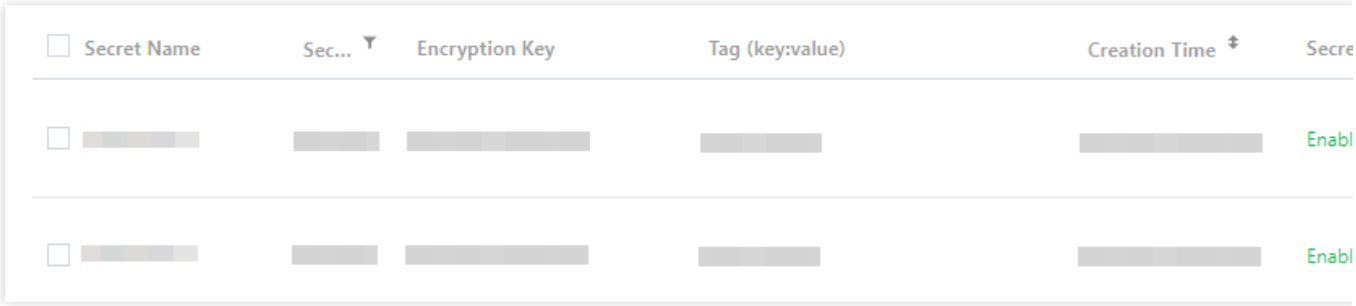
3. Search for a credential by entering keywords relevant to tags and credential names in the search box.



4. On the right of the credential of your choice, click **Enable**/**Disable** to enable/disable it.

Note:

By clicking the credential name, you can change its status on the credential details page. For details, see Editing a Database Credential.



Deleting a Database Credential

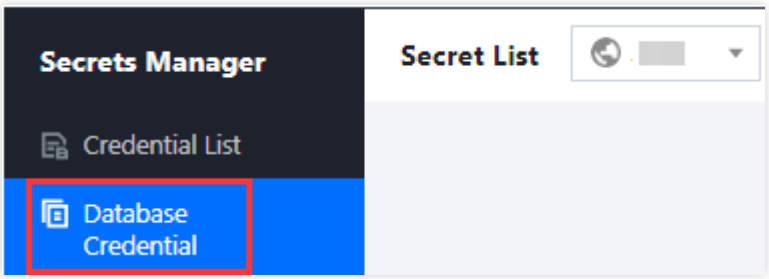
Last updated：2024-01-02 15:07:13

Note

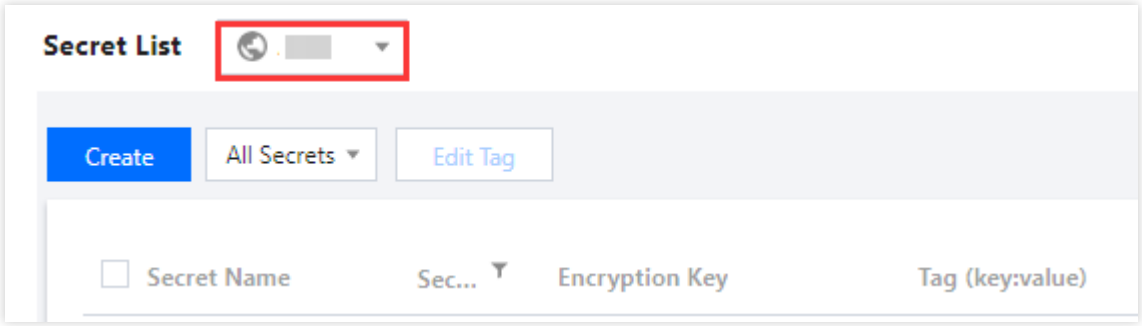
SSM provides the schedule deletion feature against accidental secret deletions. Each deletion has **a mandatory waiting period of 0-30 days**, that is, there will be 0-30 days to wait before the deletion becomes permanent. Once deleted, a secret **cannot be restored**, and all of its content **cannot be called**.

Directions

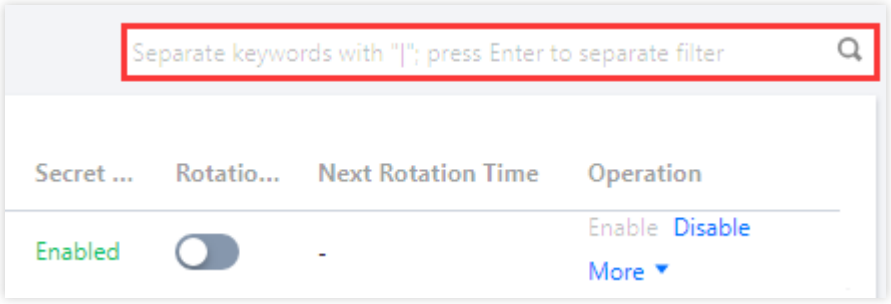
1. Log in to the SSM Console and click **Database Credential** on the left sidebar.



2. Click the drop-down button in the top left corner of the credential list to modify the region.



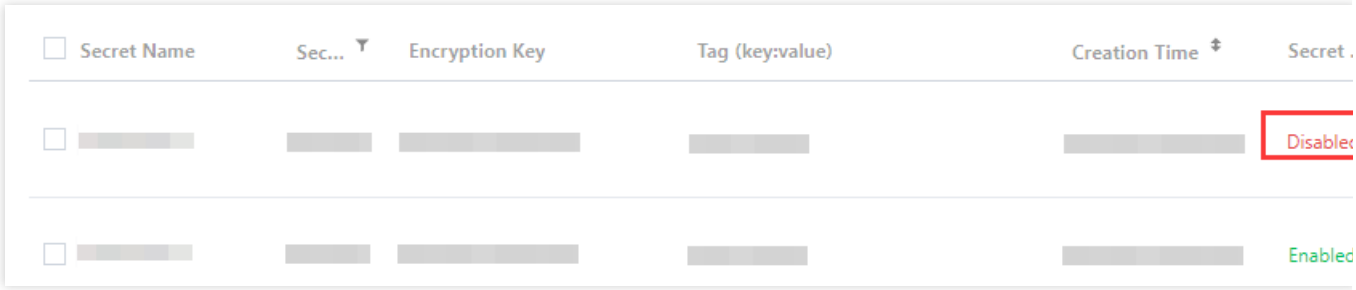
3. In the search box on the right, enter the full or partial name of the credential you want to search.



4. Select a credential you schedule to delete and then click **Schedule Deletion** in the **Operation** column.

Note:

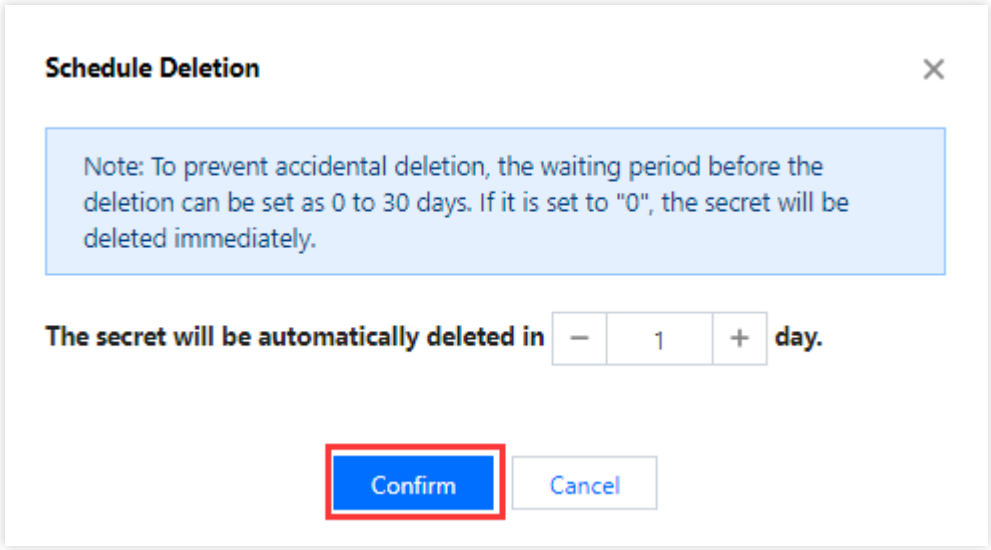
If the credential is enabled, you need to disable it first by clicking **Disable**.



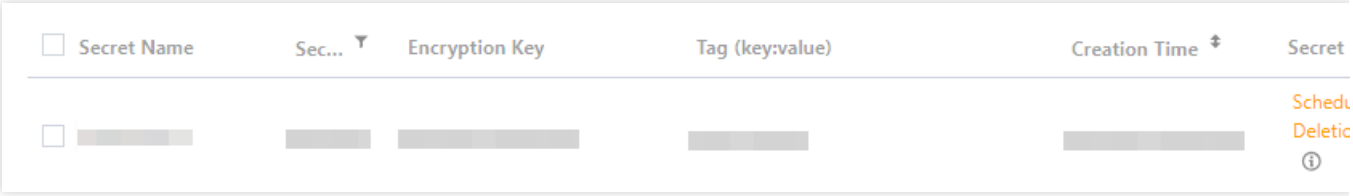
5. Set the number of schedule deletion days and then click **Confirm**. The credential will be deleted after the set number of days.

Note:

If the waiting period is set to "0", the credential will be deleted immediately.



6. Within the 1-30 waiting period, you can cancel the schedule deletion. To cancel it, click **Cancel Deletion**.



7. Enable the credential you just disabled for cancelling the deletion. Now you can disable, edit and delete the credential again.

Tag
Editing a Tag

Last updated：2024-01-02 15:07:13

Overview

This document describes how to edit the tags of resources.

Use Limits

There are some limits on the usage of tags (tag key and tag value). For more information, please see Use Limits.

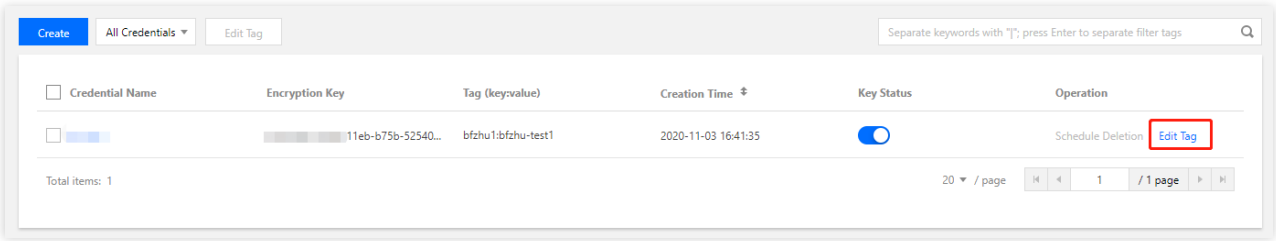
Prerequisites

1. You have logged in to the SSM console.
2. You have selected the region where the secret to be edited is located.

Directions

Editing the tags of a secret

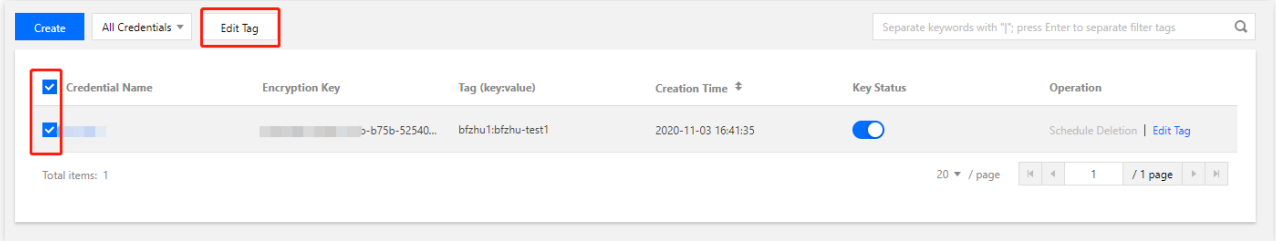
1. Find the secret whose tags need to be edited and click **Edit Tag** in the **Operation** column on the right.



2. In the "1 resource selected" section of the pop-up window, **Add** or **Delete** tags as needed.

Editing the tags of multiple secrets

1. Select the secrets whose tags need to be edited and click **Edit Tag** at the top of the page.



2. In the "n resources selected" section of the pop-up window, **Add** or **Delete** tags as needed.

For information about how to use tags, please see Examples of Management via Tags.

Examples of Management via Tags

Last updated：2024-01-02 15:07:13

Overview

Tags are used to manage resource classification and permissions from different dimensions.

For SSM, tags are used for **User Credentials**.

By adding tags to a secret, you can classify, track, and manage secrets more easily. Also, you can summarize the usage of secrets according to their tags.

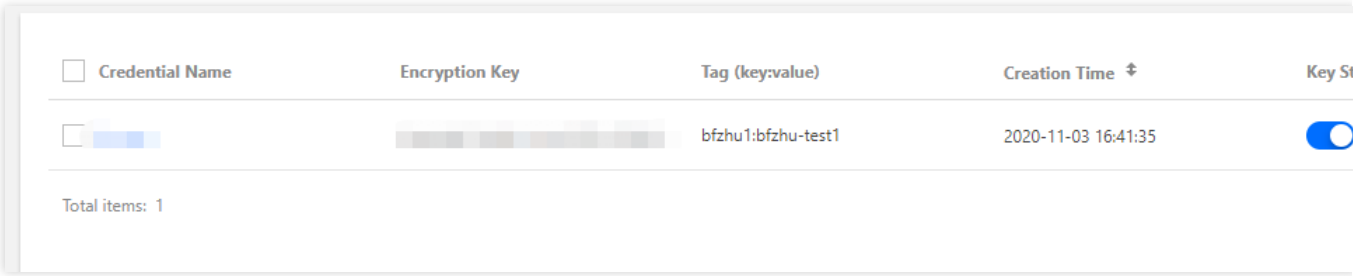
Use Limits

There are some limits on the usage of tags (tag key and tag value). For more information, please see Use Limits.

Directions

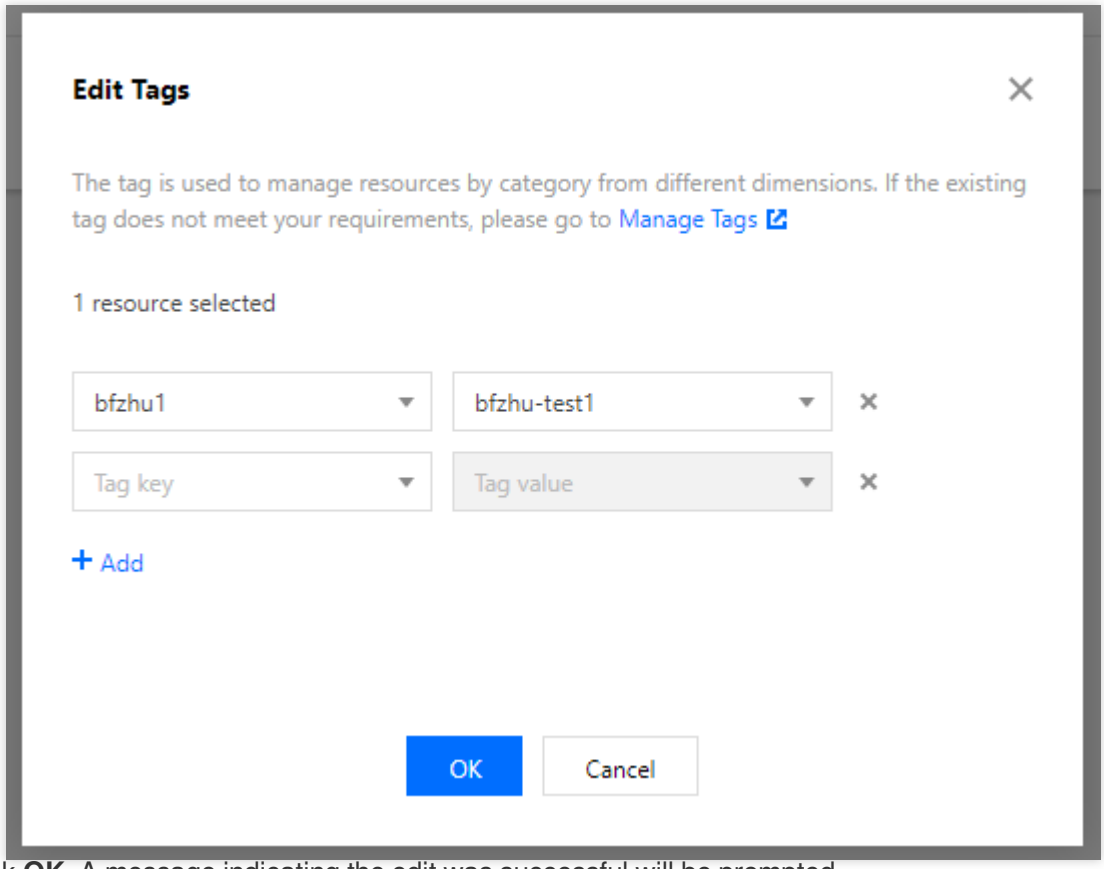
Setting tags in the SSM console

1. Log in to the SSM console.
2. Select the region where the secret to be edited is located.
3. Find the secret whose tags need to be edited and click **Edit Tag** on the right.



4. Set the tags in the "1 resource selected" section of the pop-up window.

The following figure shows you how to add two sets of tags.

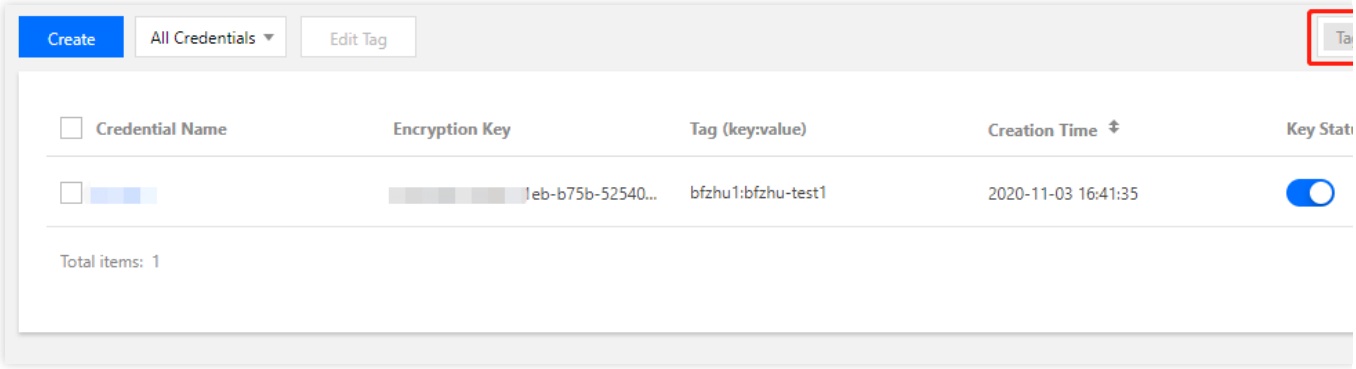


5. Click **OK**. A message indicating the edit was successful will be prompted.

Filtering keys with tags

1. Log in to the SSM console.
2. Select the region where the secret to be edited is located.
3. In the **Credential List** of the selected region, use **tags** as the filter criteria, enter the filter content, and press the Enter key, as shown in the following figure.

For example, if you want to filter keys whose owner is alex, you can enter the "owner:alex" tag.



CVM SSH Key Secret
Creating an SSH Key Secret

Last updated：2024-01-02 15:07:13

Scenarios

This document describes how to create an SSH key pair and encrypt the SSH private key on the SSM console.

Note:

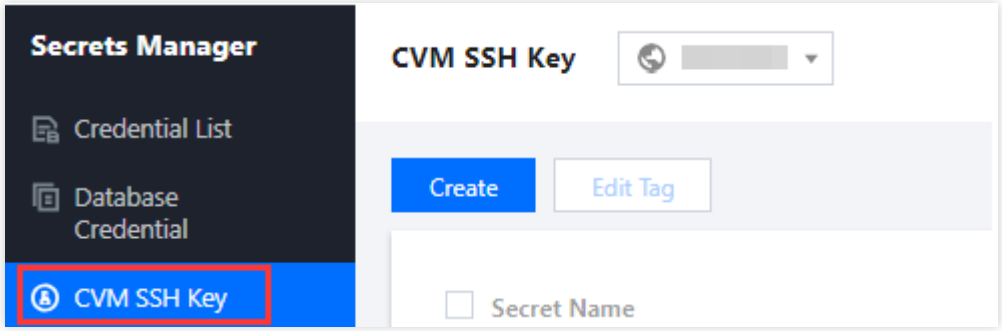
You should meet the following requirements to use **CVM SSH Key**.

You have enabled KMS services, as SSM encrypts data based on keys managed in KMS.

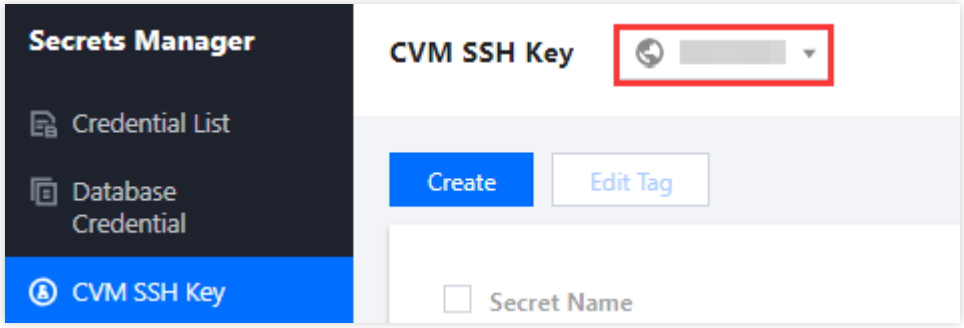
You have created a CVM instance. For details, see Guidelines for Creating Instances.

Directions

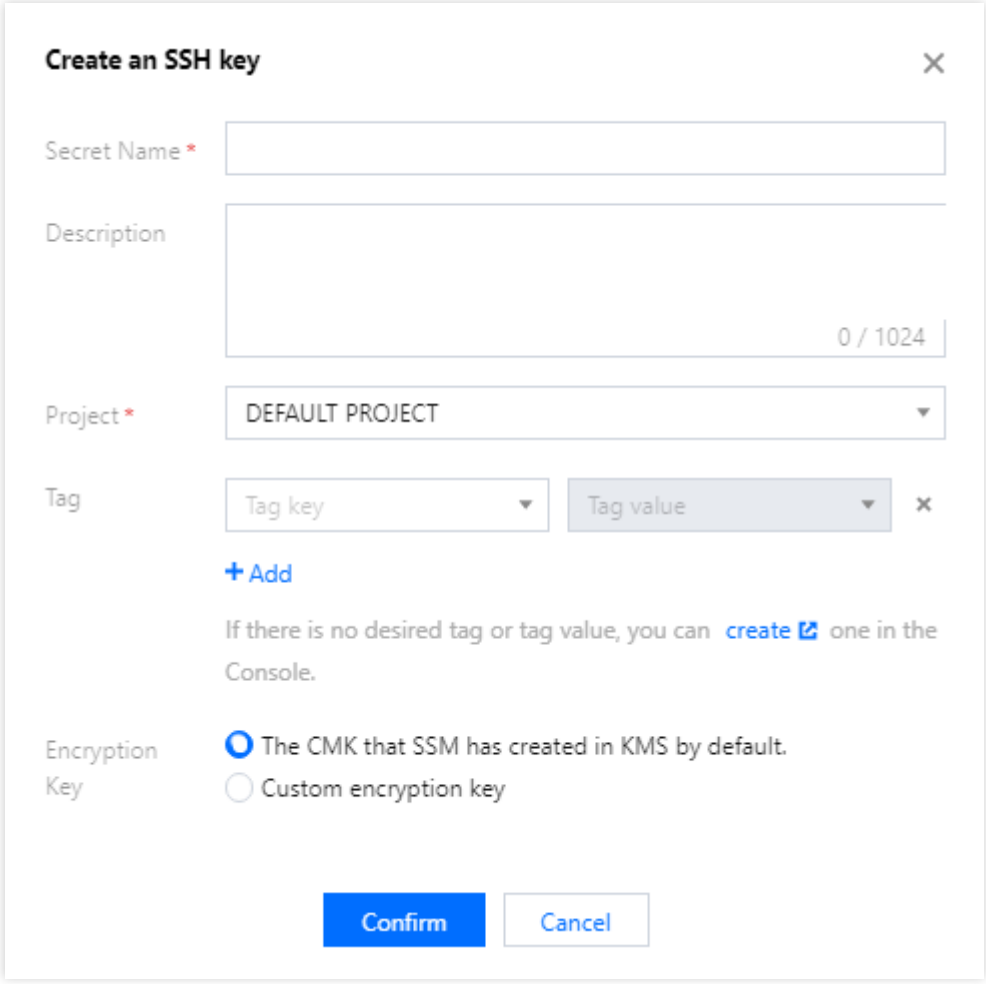
1. Log in to the SSM Console and click **CVM SSH Key** on the left sidebar.



2. On the **CVM SSH Key** page, click the drop-down list in the top left corner to select a region.



3. Click **Create** in the top left corner of this page to create an SSH key secret.
4. Enter the information and then click **OK**. You will see the new secret at the top of the list on the management page.



Field description

Secret Name: must be unique in the same region. It supports up to 128 bytes of letters, digits, hyphens and underscores and must begin with a letter or digit.

Description: description, such as what it is used for. It contains up to 1,024 bytes.

Project ID: ID of the project to which the created key pair belongs.

Tag: optional item.

Encryption Key:

Use the default CMK that SSM has created in KMS.

Use a custom encryption key.

Note:

If you are using SSM, you have activated KMS. You can create an encryption key in either of the following ways:

Use the default Tencent Cloud managed CMK created on the KMS console as encryption key, and use the envelope encryption method for encrypted storage.
Use a custom key created on the KMS console as encryption key for encrypted storage.

Deleting an SSH Key Secret

Last updated：2024-01-02 15:07:14

This document describes how to delete a CVM SSH key pair on the SSM console.

Prerequisite

You have created a CVM SSH key secret.

Before deleting a secret, you need to disable it first.

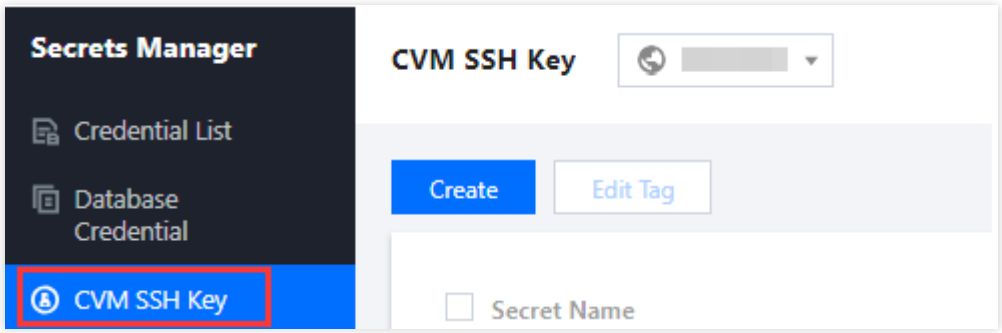
The secret that is to be deleted does not bound to an instance.

Note:

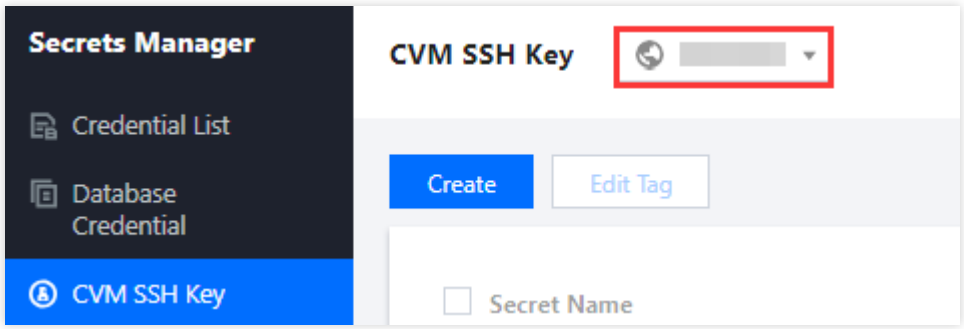
If the secret you want to delete is bound to a CVM instance, unbind them first.

Directions

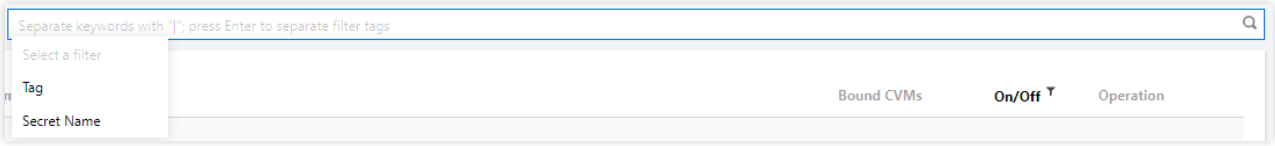
1. Log in to the SSM Console and click **CVM SSH Key** on the left sidebar.



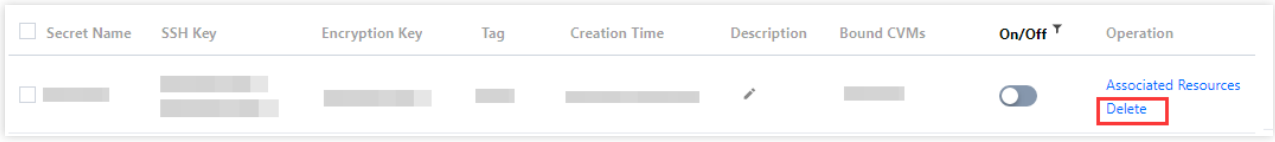
2. On the **CVM SSH Key** page, click the drop-down list in the top left corner to select a region.



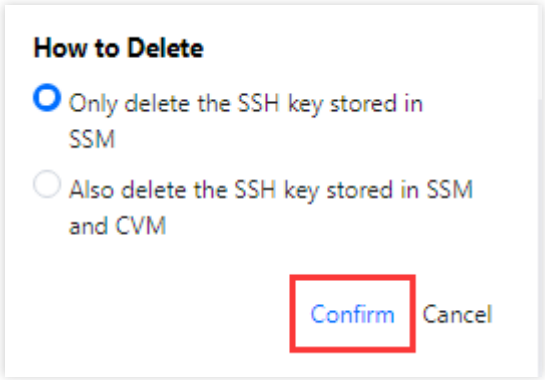
3. Click the search box, select a filter (**Tag** or **Secret Name**) from the list, and enter keywords to get results.



4. Locate the secret you want to remove, and click **Delete** on the right of the secret.



5. On the deletion page, choose an option as needed, and then click **OK**.



Download Private Key

Last updated：2024-01-02 15:07:14

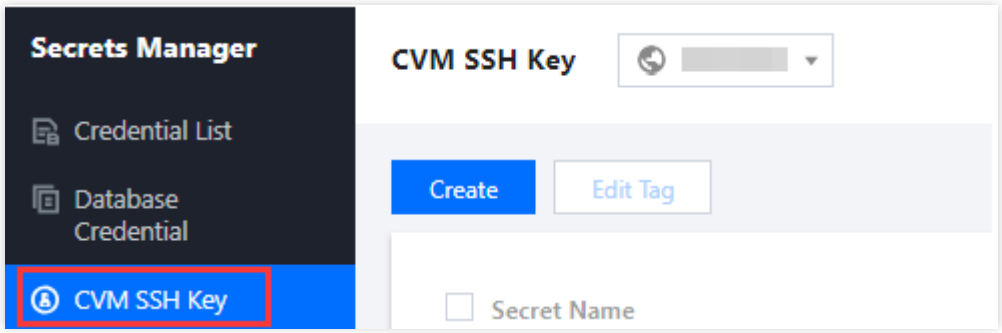
This document describes how to download your private key on the SSM console.

Prerequisite

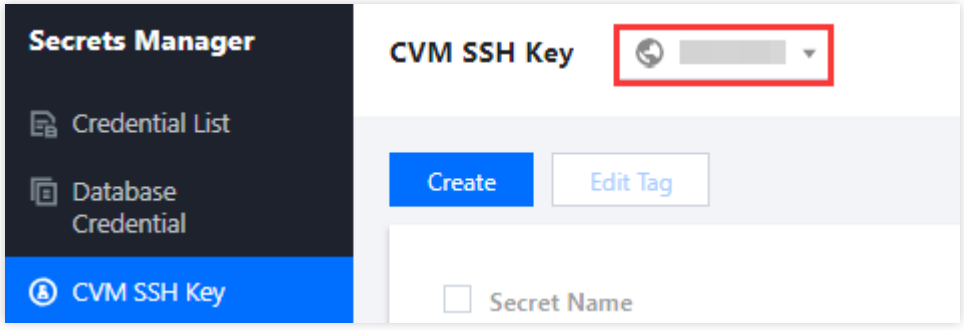
You have created an SSH key secret.

Directions

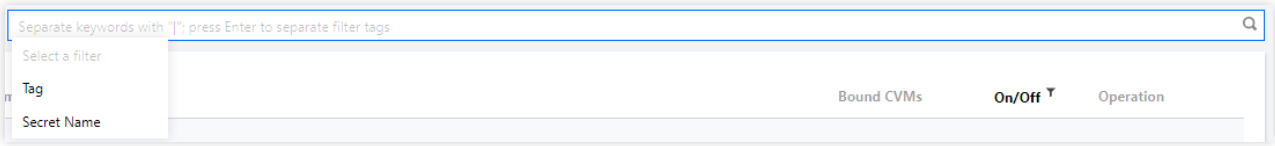
1. Log in to the SSM Console and click **CVM SSH Key** on the left sidebar.



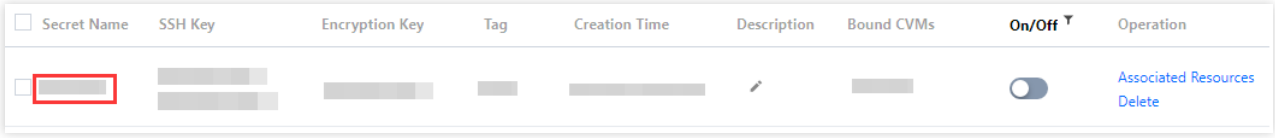
2. On the **CVM SSH Key** page, click the drop-down list in the top left corner to select a region.



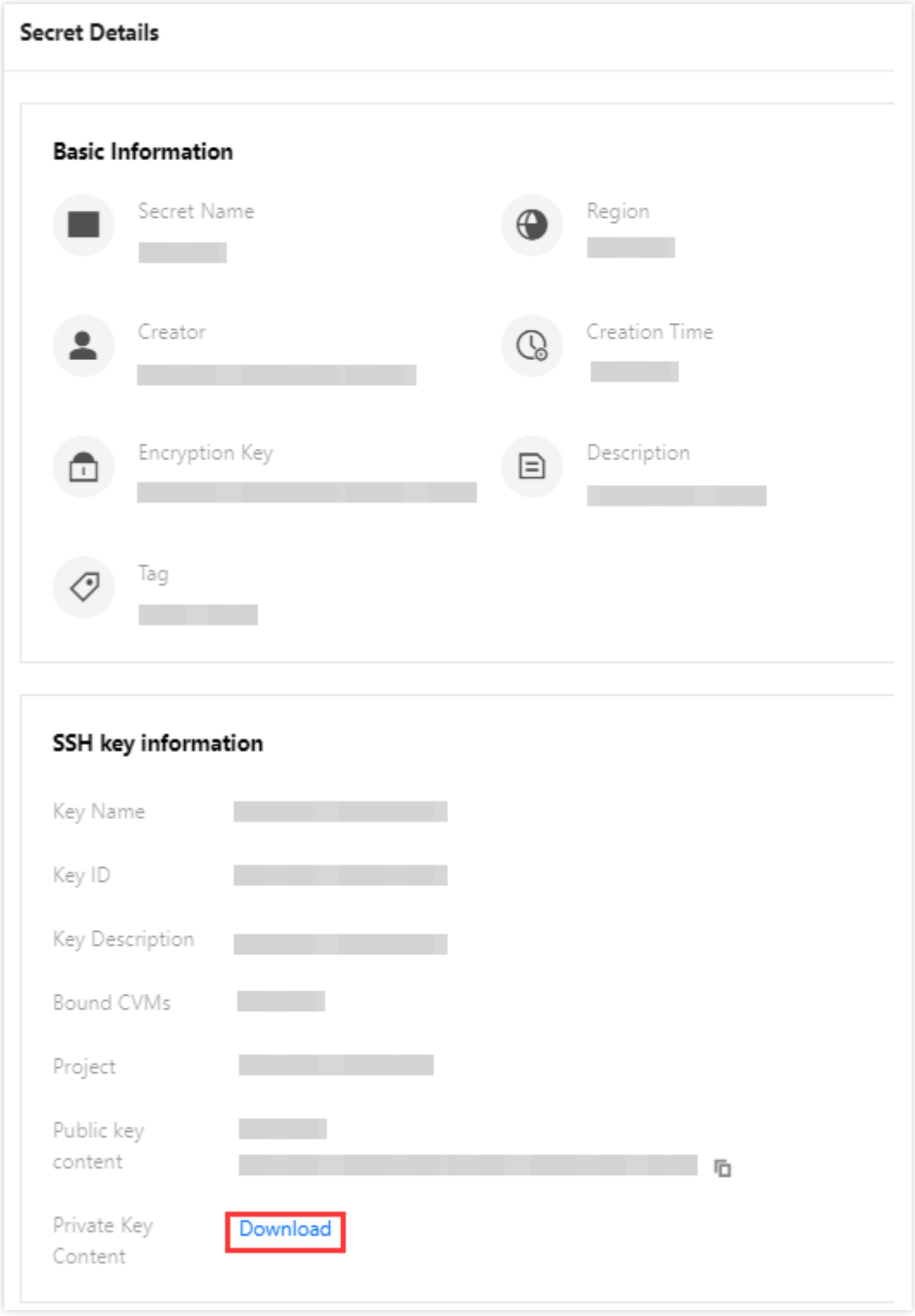
3. Click the search box, select a filter (**Tag** or **Secret Name**) from the list, and enter keywords to get results.



4. Locate the secret you want to check, and click the secret itself to enter the secret details page.



5. This page displays the SSH key information, including the name and ID of the private key and the public key content. On the right of the private key content, click **Download**.



Binding Management

Last updated：2024-01-02 15:07:13

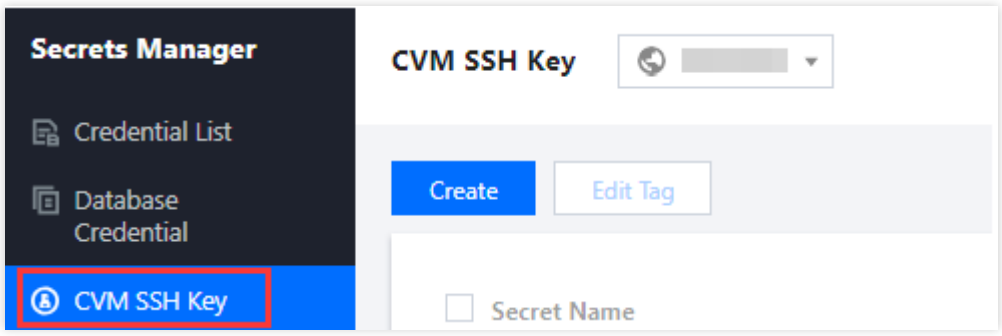
This document describes how to associate SSH keys with CVM instances on the SSM console.

Prerequisite

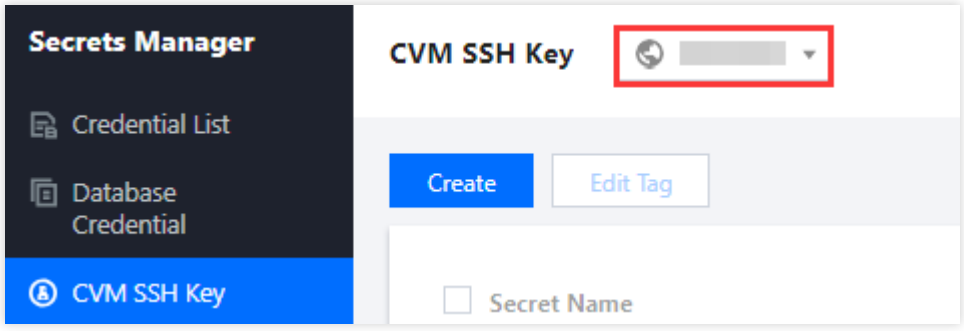
You have created a CVM SSH key secret.
You have created a CVM instance. For details, see Guidelines for Creating Instances.

Directions

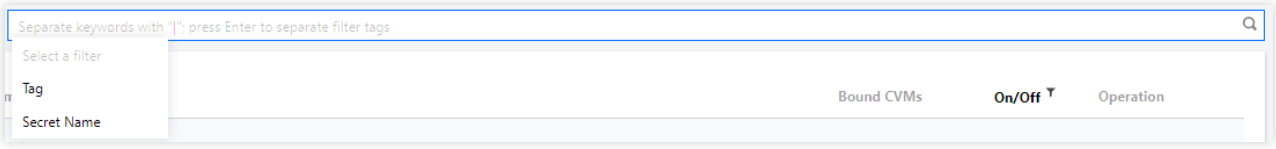
1. Log in to the SSM Console and click **CVM SSH Key** on the left sidebar.



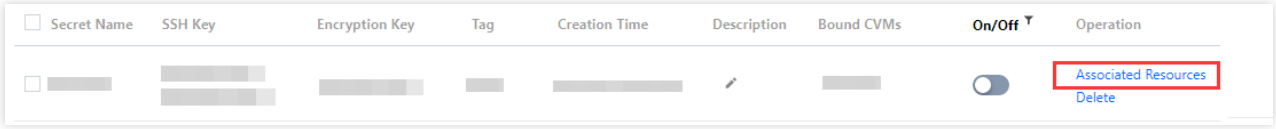
2. On the **CVM SSH Key** page, click the drop-down list in the top left corner to select a region.



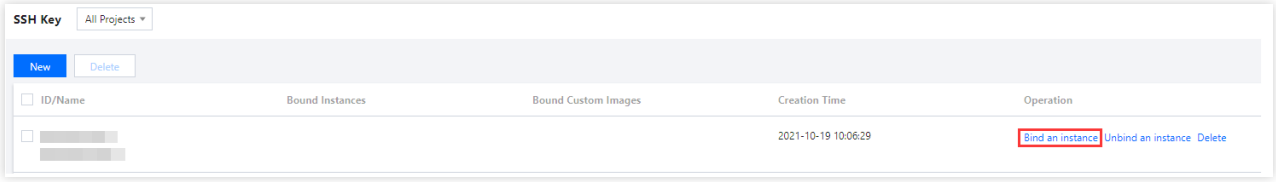
3. Click the search box, select a filter (**Tag** or **Secret Name**) from the list, and enter keywords to get results.



4. Select the secret you want to associate with a CVM instance, and click **Associated Resources** on the right.



5. On the **SSH Key** page of the CVM console, click **Bind Instance** on the right of the CVM instance you selected.



Log Audit

Last updated：2024-01-02 15:07:13

Overview

SSM combines with CloudAudit to perform supervision, compliance checks, operational reviews, and risk reviews on your Tencent Cloud accounts. All management operations and usage of the secrets can be recorded.

Directions

1. Log in to the CloudAudit console and click **Event History** in the left sidebar. You can view the operation records of the Tencent Cloud account for up to the last 30 days.
2. Click the **Expand** icon on the left of the target event to view the event details.
You can view the following content:
Operation record list: includes the event time, username, event name, resource type, and resource name.
Operation record details: includes the access key, region, error code, event ID, event name, event source, event time, request ID, resource IP address, and username.

Access Control Overview

Last updated：2024-01-02 15:07:13

If you do not need to manage the access permissions to SSM resources for sub-accounts, you can skip this chapter. Doing so will not affect your understanding and use of other documentation.
If you use multiple services such as SSM, VPC, CVM, and databases, and these services are managed by different users with a shared cloud account key, there would be a high risk of leakage. Besides, since the access permissions of other users cannot be limited, security risks caused by misoperations may occur.
CAM is used to manage the resource access permissions of a Tencent Cloud account. You can manage the resource operation permissions for sub-accounts using CAM identity management and policy management. For example, if your root account has a secret that you want it to be used only by sub-account A and not by sub-account B, you can configure a policy in CAM to manage the sub-account permissions.

Basic CAM Concepts

The root account can associate policies to sub-accounts to implement permissions. The policies support multiple dimensions, such as API, resource, user, user group, allowing, forbidding, and condition.
Account
Root account: the owner of Tencent Cloud resources and the fundamental entity for resource usage, usage calculation, and billing. It can be used to log in to Tencent Cloud services.
Sub-account: an account created by the root account. It has a specific ID and identity credential that can be used to log in to the Tencent Cloud console. A root account can create multiple sub-accounts (users). By default, a sub-account does not own any resources and must be authorized by its root account.
Identity credential: includes login credentials and access certificates. Login credential refers to a user's login name and password. Access certificate refers to Cloud API keys (SecretId and SecretKey).
Resource and permission
Resource: an object that is operated in Tencent Cloud Services, such as an SSM secret, a CVM instance, a COS bucket, or a VPC instance.
Permission: an authorization that allows or forbids users to perform certain operations. By default, the root account has full access to all resources under the account, while a sub-account does not have access to any resources under its root account.
Policy: syntax rule that defines and describes one or more permissions. The root account performs authorization by associating policies with users/user groups.
For more information, please see Tencent Cloud CAM.

Managing Sub-Accounts

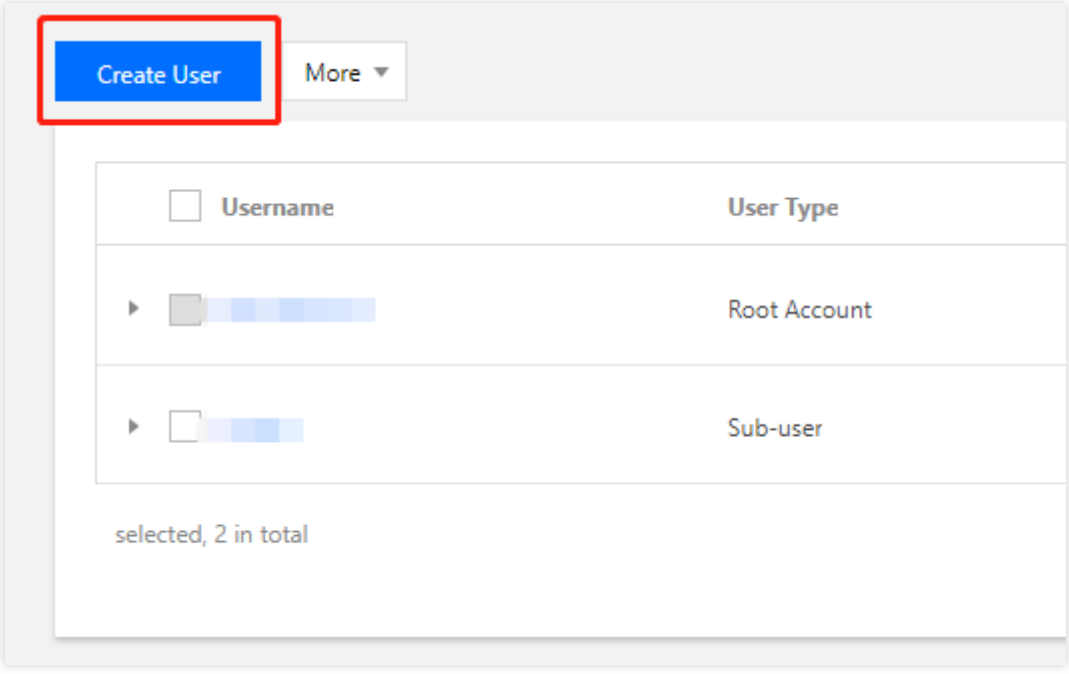
Last updated：2024-01-02 15:07:13

Overview

This document shows you how to create a sub-account and grant permissions to it to manage SSM.

Directions

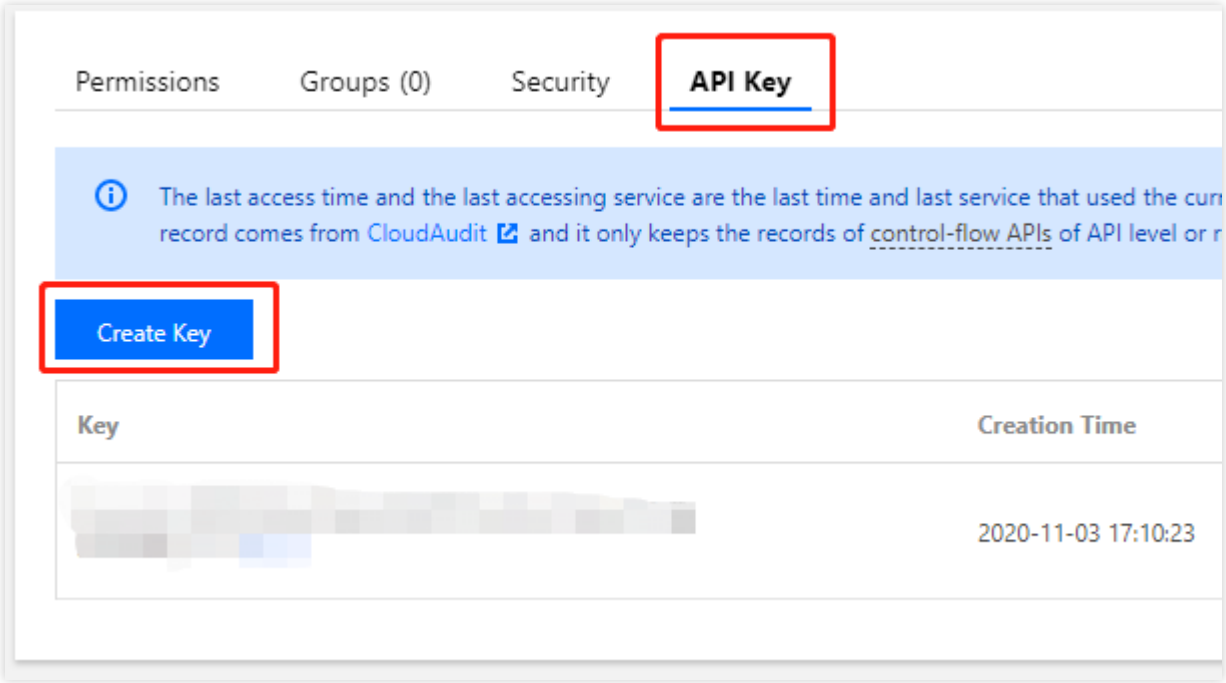
1. Create a sub-account. Log in to the Tencent Cloud CAM console using the root account. In the left sidebar, click **Users** -> **User List**. On the **User List** page, click **Create User** to create a sub-account.



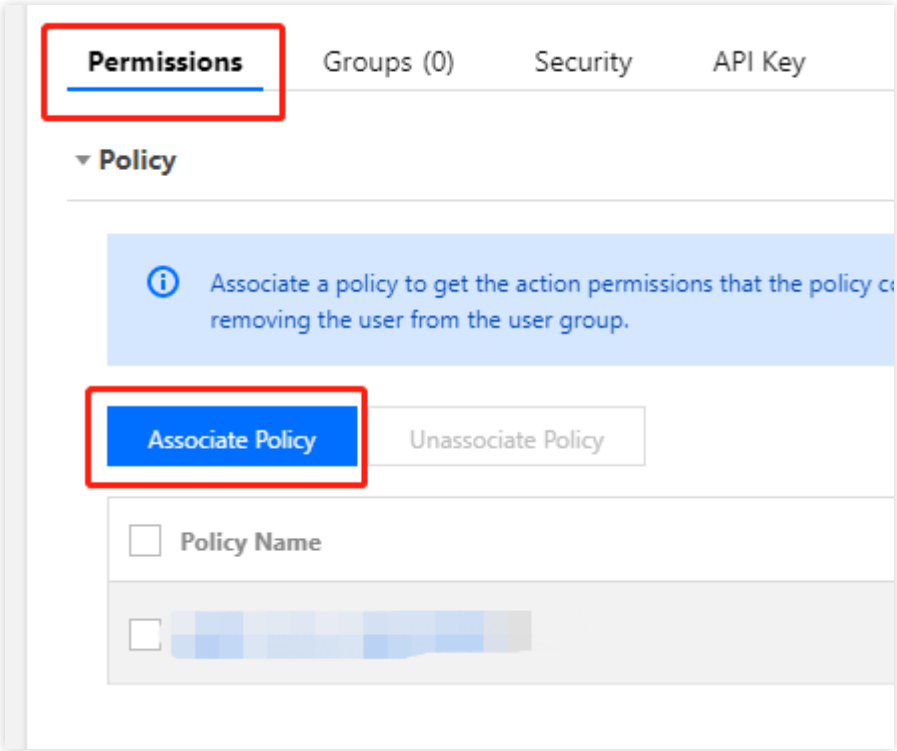
2. Create an API key. You can click the name of the sub-account to go to its **User Details** page. Click **API Key** -> **Create Key** to create SecretId and SecretKey. You can use this API key to access SSM.

Note:

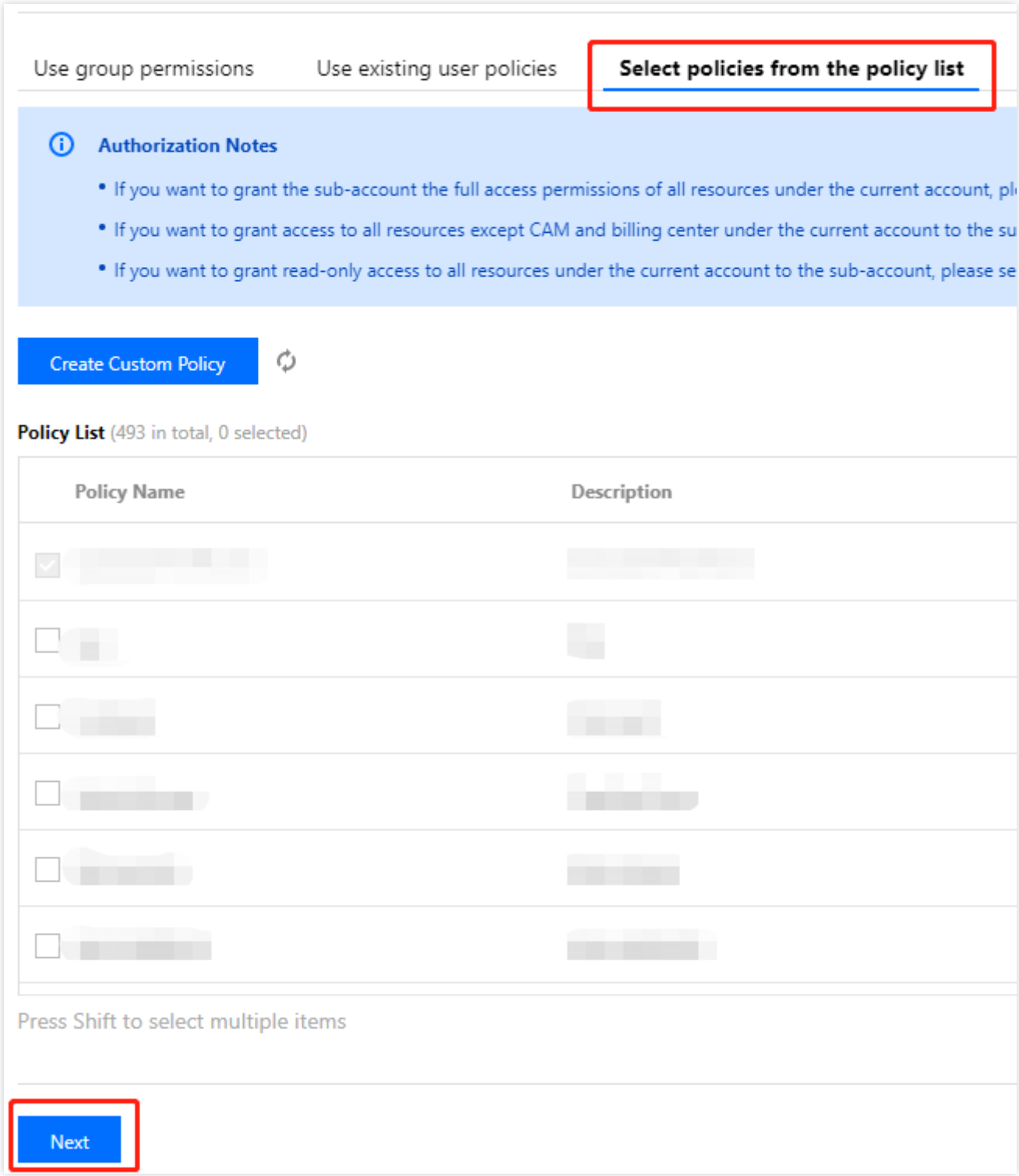
If you do not need to manage SSM through APIs, you can authorize the sub-account directly.



3. Authorize the sub-account. You can add the SSM policy to the newly created sub-account so that it can access SSM. On the **User Details** page of the sub-account, click **Permissions** > **Associate Policy** to go to the **Add Policy** page.



4. Add a policy. On the **Add Policy** page, click **Select policies from the policy list**, choose the appropriate SSM policy, and click **Next** > **Confirm**. In this way, you can grant permissions to the sub-account to access SSM.

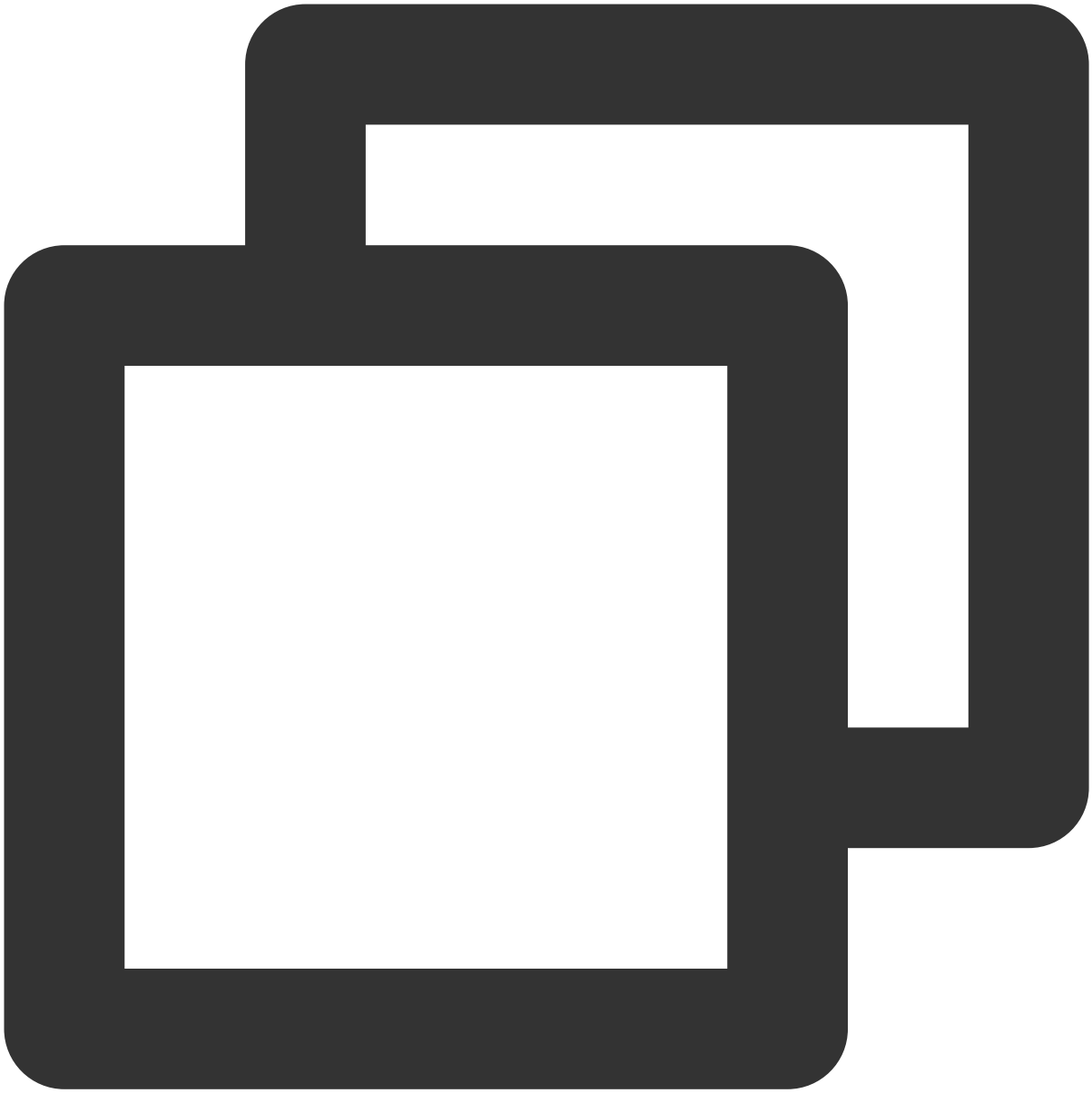


Creating an Access Control Policy

Last updated：2024-01-02 15:07:13

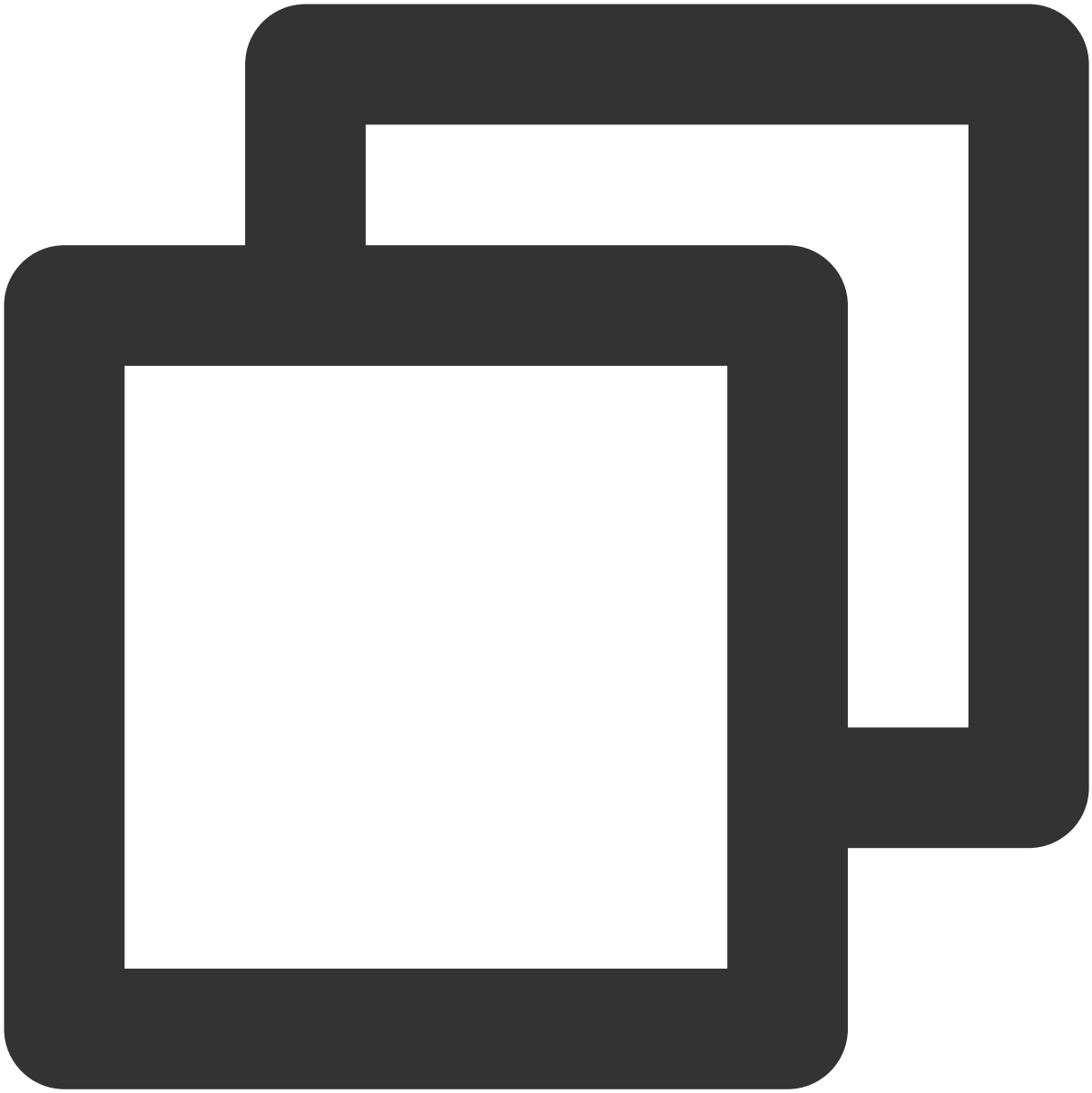
Authorizable Resource Types

Resource-level permission refers to the capability to specify resources that an account can perform operations on. Some SSM APIs support operations on secrets using resource-level permissions. This can control when a user can perform operations and whether the user can use specific resources.
For example, if you allow a user to have access to secrets in the Guangzhou region, the authorizable resource type in CAM is as follows:



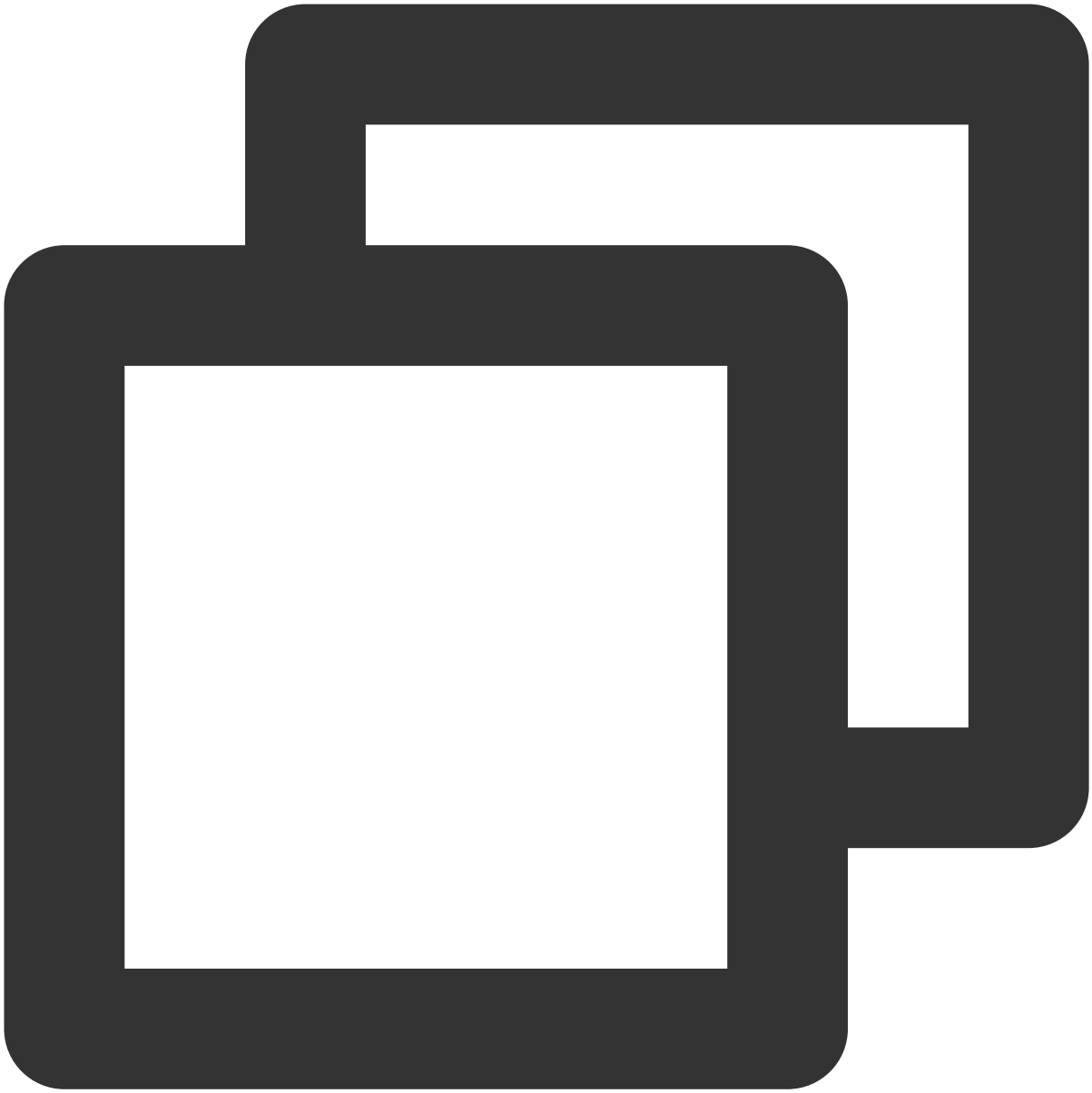
```
qcs::ssm:ap-guangzhou:uin/${uin}:*
qcs::ssm:ap-guangzhou::*
```

If you authorize an API to access all secrets created by a certain UIN, the resource type is as follows:



```
qcs::ssm:$region:uin/$uin:secret/creatorUin/*
```

If you authorize an API to access a certain secret, the resource type is as follows:



```
qcs::ssm:$region:uin/$uin:secret/creatorUin/$creatorUin/$secretName
```

Where,

`$region` : region

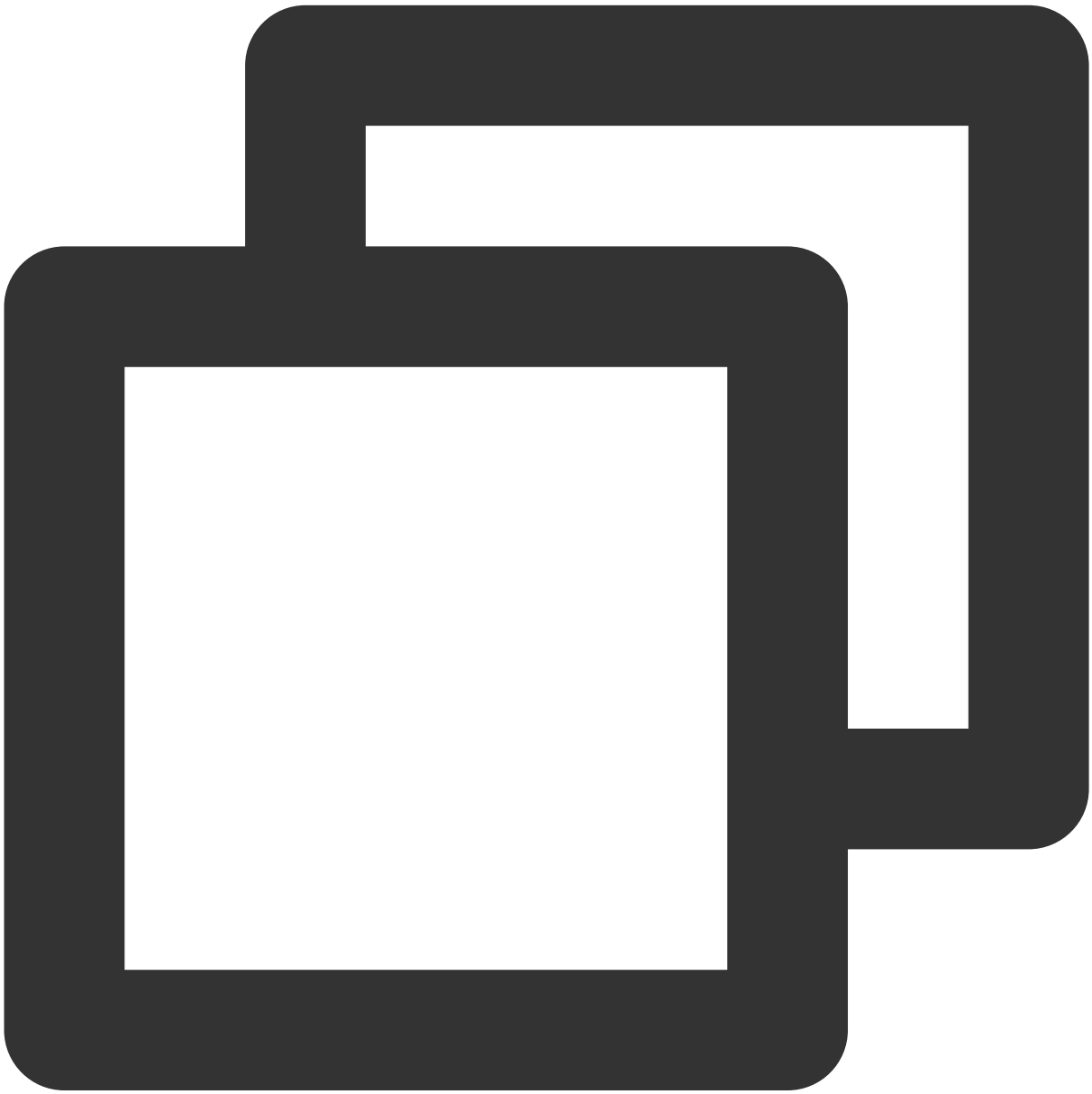
`$uin` : root account ID

`$creatorUin` : account ID of the creator of the resource

`$secretName` : name of the secret that requires configuration

Resource-level Authorization APIs

The resource paths of the `DeleteSecretVersion`, `UpdateDescription`, `RestoreSecret`, `EnableSecret`, `PutSecretValue`, `DescribeSecret`, `UpdateSecret`, `DeleteSecret`, `GetSecretValue`, `DisableSecret`, and `ListSecretVersionIds` APIs are as follows:



```
qcs::ssm:$region:uin/$uin:secret/*
qcs::ssm:$region:uin/$uin:secret/creatorUin/*
qcs::ssm:$region:uin/$uin:secret/creatorUin/$creatorUin/$secretName
```

API-level Authorization List

API	Description
CreateSecret	Creates a secret
GetRegions	Obtains the list of available regions to be displayed on the console
GetServiceStatus	Obtains the service status, which can be used to determine whether the service is activated
ListSecrets	Obtains the information list of all secrets