Cloud Virtual Machine
Operation Guide
Product Documentation
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When using the CVM, you may perform various operations, such as logging in, reinstalling operating system, adjusting configuration and resetting password, etc. This document provides an overview of CVM instance and describes how to work with CVM-related products for your reference.

Instance

CVM Instance is also known as Cloud Virtual Machine instance. Tencent Cloud CVM instance supports customizing all resources, including CPU, memory, disk, network, security, etc. It also allows easy adjustment of the resources in case of any change in visits, load and other demands. Common features supported by CVM instance are provided as follows:

Common operations

- Create Instance
- Log in to an instance
- Log in to Linux Instance
- Log into Windows Instances
- Search for Instance
- Restart Instance
- Shut Down Instance
- Terminate Instance
- Reclaim Instance

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- Reset Password

- Adjust configurations

  - Adjust Instance Configuration

  - Adjust Network Configuration

  - Adjust Project Configuration

- Modify Instance Name

- Modify IP

- Modify Private IP

- Modify Public IP

- Change Subnet of Instance

- Change Security Group

- Reinstall Operating System

Image

An Image provides all information required to launch a CVM instance. In another word, an image is the installation disk of a CVM. Tencent Cloud provides four types of images: public image, service marketplace image, custom image and shared image. Common operations supported by image are described as follows.

**Common operations**

- Create Custom Image

- Delete Custom Image

- Import Image
Security Group

Security Group is an important means of network security isolation provided by Tencent Cloud. It is a stateful virtual firewall for filtering packets and is used to set the network access controls for a single or multiple CVMs. The following describes common operations supported by security group and how to set the security group in typical scenarios to meet your business needs. Overview of common ports is provided at the end of this section for your reference.

Common operations

- Creating a security group
- Deleting a security group
- Cloning a security group
- Adding rules to security group
- Configuring a security group to associate with CVM instances
- Importing/exporting security group rules

Configuration in typical scenarios

- Remotely Log in to Linux Instance via SSH
- Logging in to a Windows Instance via MSTSC
- Ping Public IP of Instance
- Use Instance as Web Server
- Use Instance as FTP Server
- Overview of Common Ports

EIP

Elastic IP Address (EIP) is also known as elastic IP. It is a static IP designed for dynamic cloud computing, and a fixed public IP in a certain region. With EIPs, you can quickly remap an address to another instance in your account (or NAT gateway instance) to block instance failures. Common operations supported by EIP are provided as follows.

**Common operations**

- Applying for EIPs
- Releasing EIPs
- Binding instances
- Unbinding instances
- Adjusting bandwidth
- Converting public IPs to EIPs

SSH Key

**Common operations**

- Creating SSH keys
- Deleting SSH keys
- Binding/unbinding instances
• Modifying name/description

• Logging in to a Linux instance using a key
Use Limits Overview

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Account Limits on CVM Instance Purchases

- You need a Tencent Cloud account. For more information about signing up for an account, refer to Sign up for Tencent Cloud.
- You need to verify your identity. For more information, refer to the Identity Verification Guide.
- When you create a pay-as-you-go CVM instance, the system will put an hour’s worth of fees on hold to make sure your account has a sufficient balance to pay for the order.

CVM Instances Use Limits

- Virtualization and hypervisor software (such as VMWare and Hyper-V) are not supported.
- Sound cards and directly attached external hardware devices (such as ISO files, USB disks, external disks, and U-keys) are not supported.
- Public network gateways only support Linux.

CVM Instance Purchase Limits

- Each user can purchase up to 30 pay-as-you-go CVM instances in each availability zone.
- For more information, refer to CVM Instance Purchase Limits.

Image Limits

- Public Images: none.
- Custom images: each region supports a maximum of 10 custom images.
- Shared images: each custom image can be shared with a maximum of 50 Tencent Cloud users and only with accounts in the same region as the source account.
- For more information, refer to Image Types Overview.

Elastic IP (EIP) Limits
**Quota Limits**

<table>
<thead>
<tr>
<th>Resources</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIPs for each region of a Tencent Cloud account</td>
<td>20</td>
</tr>
<tr>
<td>Purchase applications for each region of a Tencent Cloud account per day</td>
<td>* 2</td>
</tr>
<tr>
<td>Free public IP reassignments when an EIP is disassociated per account per day</td>
<td>10</td>
</tr>
</tbody>
</table>

**CVM Public IP Assignment Limits**

Starting from Sep. 18, 2019, the number of public IP addresses allowed for each CVM instance will vary according to the instance’s CPU configuration.

CVM instances purchased prior to Sep. 18, 2019 will not be affected.

<table>
<thead>
<tr>
<th>Number of CPUs</th>
<th>Number of public IP addresses allowed (Public IPs and EIPs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU: 1 - 5</td>
<td>2</td>
</tr>
<tr>
<td>CPU: 6 - 11</td>
<td>3</td>
</tr>
<tr>
<td>CPU: 8 - 12</td>
<td>4</td>
</tr>
<tr>
<td>CPU: 18 - 23</td>
<td>5</td>
</tr>
<tr>
<td>CPU: 24 - 29</td>
<td>6</td>
</tr>
<tr>
<td>CPU: 30 - 35</td>
<td>7</td>
</tr>
<tr>
<td>CPU: 36 - 41</td>
<td>8</td>
</tr>
<tr>
<td>CPU: 42 - 47</td>
<td>9</td>
</tr>
<tr>
<td>CPU: ≥ 48</td>
<td>10</td>
</tr>
</tbody>
</table>

**ENI Limits**

The number of ENIs allowed for each CVM instance and the number of private IP addresses allowed for each ENI vary according to different CPU and memory configurations. The following table provides detailed:
The number of IP addresses allowed for a single ENI does not mean your account has this EIP quota. For more information on how EIP quotas work, refer to Elastic Public IP (EIP).

<table>
<thead>
<tr>
<th>CVM instance configuration</th>
<th>ENIs</th>
<th>IPs per ENI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU: 1 core</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Memory: 1 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU: 1 core</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Memory: &gt; 1 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU: 2 cores</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>CPU: 4 cores</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Memory: &lt; 16 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU: 4 cores</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Memory: &gt; 16 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU: 8 - 12 cores</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>CPU: &gt; 12 cores</td>
<td>8</td>
<td>30</td>
</tr>
</tbody>
</table>

**Bandwidth Limits**

- **Outbound Bandwidth (Downstream)**

<table>
<thead>
<tr>
<th>Network billing method</th>
<th>Instance billing method</th>
<th>Instance configuration</th>
<th>Bandwidth range (Mbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill-by-traffic</td>
<td>Pay-as-you-go instance</td>
<td>ALL</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Bill-by-bandwidth</td>
<td>Pay-as-you-go instance</td>
<td>ALL</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Shared bandwidth</td>
<td>ALL</td>
<td>ALL</td>
<td>0 - 200 or unlimited</td>
</tr>
</tbody>
</table>

- **Inbound Bandwidth (Upstream)**
- If you have purchased more than 10 Mbps of bandwidth, Tencent Cloud will match it when assigning your inbound bandwidth.
- If you have purchased less than 10 Mbps of bandwidth, your inbound bandwidth is 10 Mbps.

## Disk Limits

<table>
<thead>
<tr>
<th>Type</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elastic Cloud Disks</td>
<td>Starting from May 2018, all data disks purchased with CVM instances are Elastic Cloud Disks, which can be mounted and unmounted from instances. This is available in all availability zones.</td>
</tr>
</tbody>
</table>

Cloud disk performance limits | Read performance is the same as write performance  
For example, a 1 TB SSD with a maximum random IOPS of 26,000 means that its IOPS for both reads and writes can reach this value. Meanwhile, because of multiple performance limits, if the I/O block size is 4 KB/8 KB in this example, I/O can reach the maximum IOPS. If its block size is 16 KB, I/O cannot reach the maximum IOPS (throughput has already reached the limit of 260 MB/s). |

| Maximum Elastic Cloud Disk quota per instance | 20 |
| Snapshot quota per region | 64 + number of cloud disks in the region x 64 |
| Cloud disk mounting limit | The cloud disk and the CVM instance to which it is mounted must be in the same availability zone. |
| Snapshot rollback limit | A snapshot can only be used to roll back the cloud disk from which it was generated. |
| Cloud disk type limits for snapshots | Only data disk snapshots can be used to create new Elastic Cloud Disks. |
Cloud disk size limits for snapshots

Elastic Cloud Disks created from snapshots must be larger in size than the source cloud disk.

Security Group Limits

- Security groups are located in regions. A CVM instance can be bound only to security groups in the same region.
- Security groups are applicable to CVM instances in any network environment.
- Each user can set a maximum of 50 security groups for each project in each region.
  
  A security group can contain a maximum of 100 inbound and 100 outbound access policies.
- A CVM instance can join multiple security groups, and one security group can be associated with multiple CVM instances.
- Security groups associated with CVM instances on the basic network cannot filter packets to or from Tencent Cloud relational databases and elastic caches (Redis and Memcached). If necessary, you can use iptables to filter these packets.
- The quota limits are as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security group</td>
<td>50 per region</td>
</tr>
<tr>
<td>Access policy</td>
<td>Inbound: 100, outbound: 100</td>
</tr>
<tr>
<td>Number of CVM instances associated with a single security group</td>
<td>100</td>
</tr>
<tr>
<td>Number of security groups a CVM instance can be associated with</td>
<td>5</td>
</tr>
<tr>
<td>Number of security group IDs a security group can reference</td>
<td>10</td>
</tr>
</tbody>
</table>

VPC Limits

<table>
<thead>
<tr>
<th>Resource</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of VPCs per region for each account</td>
<td>5</td>
</tr>
<tr>
<td>Resource</td>
<td>Limit</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Number of subnets per VPC</td>
<td>10</td>
</tr>
<tr>
<td>Number of basic network CVMs associated with a single VPC</td>
<td>100</td>
</tr>
<tr>
<td>Number of route tables per VPC</td>
<td>10</td>
</tr>
<tr>
<td>Number of routing tables a subnet can be associated with</td>
<td>1</td>
</tr>
<tr>
<td>Number of routing policies per route table</td>
<td>100</td>
</tr>
<tr>
<td>Default HAVIP quota per VPC</td>
<td>10</td>
</tr>
</tbody>
</table>
Instances
Creating Instances

Scenario

This document describes how to create a Tencent Cloud Virtual Machine (CVM) instance. The custom configuration mode is used as an example.

Prerequisites

Before creating a CVM instance, complete the following steps:

- You need to sign up for Tencent Cloud, and complete identity verification.
- To create a CVM instance whose network type is virtual private cloud (VPC), you need to create a VPC in the target region, and create a subnet in the target availability zone under the VPC.
- If you do not use the default project created automatically by the system, you need to create a project.
- If you do not use the default security group, you need to create a security group in the target region and add a security group rule that meets your business requirements.
- To bind an SSH key pair when creating a Linux instance, you need to create SSH keys for the target project.
- To create a CVM instance with a custom image, you need to create custom images or import an image.

Directions

1. Log in to Tencent Cloud Official Website. Choose Products > Compute > Cloud Virtual Machine. Click Get Started and Create to enter the CVM purchase page.
   - **Quick Configuration**: This is applicable to general scenarios, helping users quickly purchase a CVM instance that meets general requirements.
   - **Custom Configuration**: This is applicable to specific scenarios, allowing users to purchase a CVM instance that meets specific requirements.

2. Configure the following information as prompted by the page:
<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
</table>
| Billing Method            | Required          | Select based on actual needs:  
  - **Pay-As-You-Go**: a flexible billing method suitable for scenarios such as e-commerce flash sales where the demand fluctuates sharply and suddenly.  
  - **Spot Instance**: a new instance operation mode suitable for scenarios such as big data computing, online businesses with load balancing, and website services. The general price range is 10%-20% of pay-as-you-go instance.  
  For more information on billing methods, please see [Billing Method Description](#). |
| Region/Availability Zone  | Required          | - **Region**: we recommend you select the region closest to your customers to reduce access latency and increase access speed.  
  - **Availability Zone**: select based on actual needs.  
    If you want to purchase multiple CVMs, we recommend you select different availability zones to implement disaster recovery.  
    For more information on regions and availability zones, see [Regions and Availability Zones](#). |
| Network                   | Required          | Logically isolated space built on Tencent Cloud. A virtual private cloud (VPC) includes at least one subnet. The system provides a default VPC and subnet for each region.  
    If the existing VPC or subnet does not meet your requirements, you can create a VPC or subnet in the VPC console.  
    **Note:**  
    - resources in the same VPC can be shared within the private network.  
    - When purchasing the CVM, ensure that the CVM and the subnet where the CVM is created have the same availability zones. |
| Instance                  | Required          | Tencent Cloud provides different instance types based on the underlying hardware. To optimize performance, we recommend you use instance types of the latest generation. |
For more information on instances, see Instance Specifications.

<table>
<thead>
<tr>
<th><strong>Image</strong></th>
<th><strong>Required</strong></th>
<th>Tencent Cloud provides public images, custom images, and shared images. For more information on images, see Image Types.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Disk</strong></td>
<td><strong>Required</strong></td>
<td>Used to install the operating system. The capacity is 50 GB by default. Available Cloud Block Storage (CBS) types vary by regions. Select as instructed by the page. For more information on CBS, see CBS Types.</td>
</tr>
<tr>
<td><strong>Data Disk</strong></td>
<td><strong>Optional</strong></td>
<td>Used to scale up CVM storage capacity to ensure high efficiency and reliability. CBS data disks are not added by default. For more information on CBS, see CBS Types.</td>
</tr>
</tbody>
</table>
| **Public Network Bandwidth** | **Required** | A free independent public IP address is allocated by default. Tencent Cloud provides two network billing modes. Configure a value greater than 0 Mbit/s as needed.  
- **Bill-By-Bandwidth**: select a fixed bandwidth. Packet loss occurs when the bandwidth exceeds this value. This is applicable to scenarios where network connection fluctuates slightly.  
- **Bill-By-Traffic**: billing is based on traffic that is actually used. You can specify a peak bandwidth to prevent charges incurred by unexpected traffic. Packet loss occurs when the instantaneous bandwidth exceeds this value. This is applicable to scenarios where network connection fluctuates significantly.  
**Note**: the allocated free independent public IP cannot be unbound from the instance. To unbind this IP address, first convert the public IP to an elastic IP. For more information on elastic IP, see Elastic Public IP. |
| **Public Gateway** | **Optional** | Applicable only to Linux images. As a network interface between the VPC and the public network, the public gateway can forward requests of CVMs that are within different subnets of the VPC and have no public IP addresses.  
**Notes**: Tencent Cloud no longer support configuring public gateway on the CVM purchase. |
3. Click **Next: Complete Configuration** to enter the CVM configuration page.

4. Configure the following information as prompted by the page:

<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Required</td>
<td>Default project is selected by default. You can select an existing project to manage different CVMs as needed.</td>
</tr>
</tbody>
</table>
| Security Groups | Required          |   - If no security group is available, you can **create a security group**.  
                              - If there are available security groups, you can choose **existing security groups**.  
                              For more information on security groups, see **Security Groups**. |
| Instance Name   | Optional          | You can customize the name of the CVM to be created.  
                              - If no custom instance name is specified, **unnamed** will be used by default.  
                              - An instance name can contain up to 60 characters. **Batch sequential naming or pattern string-based naming** is supported.  
                              **Note:** this name is displayed only in the console. It is not the hostname of the CVM. |
| Login Method    | Required          | Configure the method to log in to the CVM as needed.  
                              - **Custom Password**: configure a custom password to log in to the instance.  
                              - **SSH Key Pair (Only for Linux instances)**: associate the instance with an SSH key to ensure secure login to the CVM.  
                                If no key is available or existing keys are not applicable, click **Create Now** to create a key.  
                                For more information on SSH key, see **SSH Key**.  
                              - **Random Password**: an automatically generated password will be sent through **Internal Messages**. |
<p>| Security Service| Optional          | By default, DDoS protection and host security services are enabled for free to help you build a CVM |</p>
<table>
<thead>
<tr>
<th>Cloud Monitoring</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>By default, cloud monitoring is enabled for free. You can install components to obtain CVM monitoring metrics and display them in visual charts. You can also specify custom alarm thresholds. In addition, you can configure three-dimensional CVM data monitoring, intelligent data analysis, real-time fault alarms, and custom data reports to precisely monitor Tencent Cloud services and CVM health conditions.</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Settings</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configure additional settings for the instance as needed.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hostname</strong>: you can customize the name of the computer in the CVM operating system. After a CVM is created, you can log in to the CVM to view the hostname.</td>
<td></td>
</tr>
<tr>
<td><strong>Placement Group</strong>: you can add an instance to a placement group as needed to improve service availability. For more information, see Placement Group.</td>
<td></td>
</tr>
<tr>
<td><strong>Tag</strong>: the tag can be specified to manage CVM resources by categories. For more information, see Tag.</td>
<td></td>
</tr>
<tr>
<td><strong>Custom Data</strong>: you can configure an instance by specifying custom data. That is, the running configuration script when an instance is started. If multiple CVMs are purchased at a time, the custom data will run on all CVMs. The Linux operating system supports the Shell format, and the Windows operating system supports the PowerShell format. A maximum of 16 KB raw data is supported. For more information, see Custom Data. <strong>Note</strong>: custom data configuration only supports certain common images with the Cloudinit service. For more information, see Cloud-Init.</td>
<td></td>
</tr>
</tbody>
</table>

5. Click **Next: Confirm Configuration** to enter the configuration confirmation page.
6. Confirm the information of the CVM to be purchased and the cost of each configuration item.
7. Click **Purchase** and complete the payment. You can then check your CVM by logging in to the **CVM Console**.
   Information such as CVM instance name, public IP address, private IP address, username, and login password will be sent to your account through **Internal Messages**. You can use this
information to log in to and manage your instances. To ensure security, change your CVM login password as soon as possible.
Batch Sequential Naming or Pattern String-Based Naming

Scenario

To allow you to name batch created CVM instances according to a rule during creation, the features of automatically ascending suffixed numbers and specifying pattern strings are provided.

- When you need to purchase \( n \) instances and generate instance names in specific forms, such as “CVM+Sequence number” (for example, CVM 1, CVM 2, and CVM 3), you can use the feature of **Automatically Ascending Suffixed Numbers**.
- When you need to create \( n \) instances and name specific instances with ascending numbers starting from \( x \), you can use the feature of **Specifying a Single Pattern String**.
- When you need to create \( n \) instances with multiple prefixes in their names, each of which contains a specified serial number, you can use the feature of **Specifying Multiple Pattern Strings**.

Steps

**Automatically Ascending Suffixed Numbers**

This feature allows you to name batch purchased instances with the same prefix and automatically ascending suffixed numbers.

Created instances are suffixed with numbers starting from 1 by default. The starting suffix number is fixed.

The following example assumes that you have purchased three instances and want to name these instances in the form of “CVM+Sequence number” (for example, CVM 1, CVM 2, and CVM 3).

**Operations on the Purchase Page**

1. Purchase three instances by referring to Create an Instance. On the 2. Security Group and CVM tab page, enter the instance name in the form of **Prefix+Sequence number**. In this case, enter
CVM as the instance name.

2. Follow the prompts on the page and complete payment.
3. Return to the CVM Console to view the newly purchased instances. You can see that these batch purchased instances are named with the same prefix and ascending suffixed numbers.

API Operations
In the RunInstances API, set the InstanceName field to CVM.

Specifying Pattern Strings
This feature allows you to name batch purchased instances in a complex form with specified serial numbers. You can use one or more pattern strings in instance names as required.
The instance name with a specified pattern string is in the form of \( R:x \), where \( x \) indicates the starting number in generated instance names.

**Specifying a Single Pattern String**

The following example assumes that you want to create three instances and name them with ascending numbers starting from 3.

**Operations on the Purchase Page**

1. Purchase three instances by referring to **Create an Instance**. On the **Set the CVM** tab page, enter the instance name in the form of **Prefix+Specified pattern string \( R:x \)**. In this case, enter \( \text{CVM}(R:3) \) as the instance name.

2. Follow the prompts on the page and complete payment.

3. Return to the **CVM Console** to view the newly purchased instances. You can see that these batch purchased instances are named with the same prefix and ascending suffixed numbers starting
API Operations

In the RunInstances API, set the InstanceName field to \texttt{CVM{R:3}}.

Specifying Multiple Pattern Strings

The following example assumes that you want to create three instances and name them with the \texttt{cvm}, \texttt{Big}, and \texttt{test} prefixes, where \texttt{cvm} and \texttt{Big} are followed by ascending numbers starting from 13 and 2, respectively. For example, their names are cvm13-Big2-test, cvm14-Big3-test, and cvm15-Big4-test, respectively.

Operations on the Purchase Page

1. Purchase three instances by referring to Create an Instance. On the 2. Set the CVM tab page, enter the instance name in the form of \texttt{Prefix+Specified pattern string \{R:x\}-Prefix+Specified pattern string \{R:x\}-Prefix}. In this case, enter \texttt{cvm(R:13)-Big(R:2)-test} as
2. Follow the prompts on the page and complete payment.
3. Return to the CVM Console to view the newly purchased instances. You can see that these batch purchased instances are named with prefixes followed by ascending numbers starting from the specified numbers.

API Operations
In the RunInstances API, set the InstanceName field to \texttt{cvm(R:13)-Big(R:2)-test}.
Resource Adjustment
Change Instance Configuration

Last updated: 2020-02-05 14:54:26

Scenario

The Tencent Cloud instances' hardware devices can be adjusted easily with great flexibility. This document describes how to upgrade, degrade, or adjust instance configuration.

Prerequisites

Instance status

You can adjust an instance's configuration when the instance has been either started up or shut down, and the change takes effect after the instance is forced to shut down and restarted.

Note:

- When the instance has been shut down, you can make changes in the console directly.

- When the instance has been started up, you can make changes online, and confirm forced shutdown after changes are made. The changes to configuration take effect after the instance is restarted.

- You can adjust configuration in batch online for multiple instances. If there is a server that has been started up in the batch of instances, you need to confirm the forced shutdown individually, and the changes take effect after the servers are restarted.

Limit of configuration adjustment

- Upgrading configuration
  No limit is imposed on the number of times configuration upgrade can be performed. The upgrade takes effect immediately.

- Degrading configuration
  - Postpaid instances can be degraded at any time and for unlimited times.

Hardware
The instances whose system disk and data disk are both cloud disks support adjusting configuration.

**Change of private IP**

For few instances, their private IPs will change after the configuration adjustment and there will be a note on the adjustment page.

**Directions**

You can upgrade the configuration of CVMs to adapt to you growing business. For all CVM types, the upgraded configuration takes effect immediately. That is, after you upgrade the configuration and pay the additional fees, the CVM will run with the new configuration immediately.

**Adjusting via console**

1. Log in to the CVM console

2. For the instance to adjust, click More -> Resource Adjustment -> Adjust Configuration.

3. In the popup box, select the configuration you want to adjust, and then click Next.

4. Confirm the billing details. Click Next.

5. In Shutdown CVM, read the information and check Agree to a forced shutdown. Click Adjust Now.

**Adjusting via API**

You can upgrade instance configuration using the APIs ResizeInstance and ResizeInstanceHour. For more information, please see APIs for adjusting instance configuration.
Adjust Network Configuration

Last updated: 2020-02-05 15:09:37

Change Billing Method

Tencent Cloud provides a variety of billing methods. You can switch between Bill-by-bandwidth and Bill-by-traffic in the console, but for each CVM, switching between the two methods can only be performed twice at most.

Billing description: Overview of Billing Methods for Public Network

Adjustment for Public Network

Tencent Cloud provides two types of network configurations: exclusive public network and shared public network. The shared public network service is billed by bandwidth. You need to submit a ticket to apply for activating it. For more information about the billing methods, please see Billing of Shared Public Network. This document mainly describes the adjustment between exclusive public networks. For more information about the billing methods, please see Billing of Exclusive Public Network.

Bill-by-bandwidth for postpaid CVMs

This billing method supports adjusting (upgrading or degrading) bandwidth at any time. If the bandwidth is changed several times during an hour, the billing is based on the highest bandwidth tier.

Bill-by-traffic

This billing method supports adjusting (upgrading or degrading) the bandwidth cap at any time and the change takes effect in real time.

This billing method can be used for both prepaid and postpaid CVMs.

Bandwidth cap

The options vary with different payment methods and CVM configurations. For more information, please see Bandwidth Cap of Public Network.
Procedure

1. Log in to the CVM Console, select the instance for which you want to change the network configuration, and then click More -> Resource Adjustment -> Adjust Network.

2. In the Adjust Network popup page, you can change the billing method and bandwidth cap.

3. Click OK.
Adjust Project Configuration

Last updated : 2020-02-25 10:48:49

Scenario

The project function is used to manage cloud resources by project, and cloud resources can be managed by project. When creating a Cloud Virtual Machine instance, you must add the instance Assign to the project. Tencent Cloud supports users to re-transfer the instance Assign to the new project after creating the Cloud Virtual Machine instance.

If you want to transfer the example Assign to the new project, please start with the Create project.

Directions

1. Log in to the CVM Console.
2. In the instance list, select Cloud Virtual Machine who needs to be re-Assign to the new project, and click more-> instance Settings-> Assign to Project on the right. as shown below:

   If there are multiple servers that need to reconnect Assign to Cloud Virtual Machine of the new project, check Cloud Virtual Machine, and click more Operations-> instance Settings-> Assign to Project at the top.

3. In the pop-up "Assign to Project" window, select a new project name and click "submit" to complete the operation of Assign to the project.
Scenario

Tencent Cloud provides the following three options for you to view the information of a CVM instance:

- View the total number of CVM instances under your account and their status, as well as the quantity and quota of resources in each region in the Overview page in Console.
- View the information of all CVM instances in a region on the Instances page in Console.
- View the details of a CVM instance on the instance details page.

Prerequisite

Log in to CVM Console.

Directions

**Viewing Instance Overview**

- CVM status: total number of CVMs, the number of instances that expire within the next 7 days, the number of instances in Recycle Bin, and the number of normal CVMs.
- List of CVMs to be renewed (you can renew them on this page).
- Resource quantity and quota. You can view the postpaid CVMs, custom images and snapshot quota information for each region, and apply for quotas on this page.
- Perform cross-region search for cloud resources.

**Viewing Information of Instances**

The information available in the Instances page includes CVM IDs and names, monitoring information/status, availability zones, CVM type, configuration, primary IP address, CVM billing method, network billing method and the projects to which the CVMs belong.
Click the gear button in the upper right corner to select the list details you want to display.

Viewing Instance Details

Go to the instance details page to view the details of an instance by following the steps below:

1. Log in to the CVM Console.
2. Select a region.
3. Locate the instance for which you want to view the details, and click the instance ID to go to the instance details page.
4. In the instance details page, the following instance information is displayed, including CVM information, CVM configuration, system image, SSH key, ENI, public IP, monitoring, health check,
security group, etc.
Query Instance Monitoring Info


Scenario

Tencent Cloud provides two options for viewing the monitoring information of a CVM instance:

- Cloud Monitor console
- **Instance Details** page in the CVM console

To view monitoring information for public network traffic, go to Traffic Monitor.

Directions

**Viewing instance monitoring information in the Cloud Monitor console**

1. Log in to the Cloud Monitor console of the **CVM**.
2. Select the region where the instance whose monitoring information is to be viewed is located, as shown in the following figure.

![Instance List](https://example.com)

3. Click the instance ID to go to the **Monitoring** page. On this page, you can view the CPU, memory, private network bandwidth, public network bandwidth, and disk utilization metrics of the CVM, as
shown in the following figure.

Viewing instance monitoring information in the CVM console

1. Log in to the CVM console.
2. Select the region where the instance whose monitoring information is to be viewed is located.
3. Click the instance ID to go to the Instance Details page.
4. Click the Monitoring tab to open the Monitoring page. On this page, you can view the CPU, memory, private network bandwidth, public network bandwidth, and disk utilization metrics of the
CVM, as shown in the following figure.
Instance Metadata

Last updated: 2020-02-25 10:33:38

Instance metadata represents the relevant data of the instance and can be used to configure or manage running instances.

Note: Although instance metadata can only be accessed internally from the instance, the data has not been protected through encryption. Anyone who accesses the instance can view its metadata. Therefore, you should take proper precautions to protect sensitive data. For example, using permanent encryption key.

Overview of Instance Metadata

Tencent Cloud provides the following meta-data:

<table>
<thead>
<tr>
<th>Data</th>
<th>DESCRIPTION</th>
<th>Version Where It Was Introduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance-id</td>
<td>Instance ID</td>
<td>1.0</td>
</tr>
<tr>
<td>Instance-name</td>
<td>Instance name</td>
<td>1.0</td>
</tr>
<tr>
<td>Uuid</td>
<td>Instance ID</td>
<td>1.0</td>
</tr>
<tr>
<td>Local-ipv4</td>
<td>Instance private IP</td>
<td>1.0</td>
</tr>
<tr>
<td>Public-ipv4</td>
<td>Instance public IP</td>
<td>1.0</td>
</tr>
<tr>
<td>Mac</td>
<td>MAC address of instance's eth0 device</td>
<td>1.0</td>
</tr>
<tr>
<td>Placement/region</td>
<td>Information of the region in which the instance resides</td>
<td>1.1</td>
</tr>
<tr>
<td>Placement/zone</td>
<td>Information of the availability zone in which the instance resides</td>
<td>1.1</td>
</tr>
<tr>
<td>Network/interfaces/macs/ $ / mac</td>
<td>Device address of instance network interface</td>
<td>1.0</td>
</tr>
<tr>
<td>Data</td>
<td>DESCRIPTION</td>
<td>Version Where It Was Introduced</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> /</td>
<td>The primary private IP for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>primary-local-ipv4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / public-</td>
<td>The public IP for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/interfaces/macs/ $ / vpc-id</td>
<td>Example network interface VPC network ID</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>Network/interfaces/macs/ $ / subnet-id</td>
<td>Instance Network Interface Subnet ID</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / local-</td>
<td>The gateway address for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s/ <strong>Local-ipv4</strong> / gateway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / local-</td>
<td>The private IP for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s/ <strong>Local-ipv4</strong> / local-ipv4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / local-</td>
<td>The public IP for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s/ <strong>Local-ipv4</strong> / public-ipv4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / local-</td>
<td>The public network mode for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s/ <strong>Local-ipv4</strong> / public-ipv4-mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network/network/macs/ <strong>Mac</strong> / local-</td>
<td>The subnet mask for the network interface of the instance</td>
<td>1.2</td>
</tr>
<tr>
<td>ipv4s/ <strong>Local-ipv4</strong> / subnet-mask</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment/charge-type</td>
<td>Instance billing mode</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>Payment/create-time</td>
<td>Instance creation time</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>Payment/termination-time</td>
<td>Example Terminate time</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>App-id</td>
<td>AppId of the user to which the instance belongs</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
</tbody>
</table>
### Data

<table>
<thead>
<tr>
<th>Data</th>
<th>DESCRIPTION</th>
<th>Version Where It Was Introduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>As-group-id</td>
<td>Elastic Scaling group ID where the instance resides</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>Spot/termination-time</td>
<td>Spot instance Terminate time</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>/ meta-data/instance/instance-type</td>
<td>Instance specifications</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>/ instance/image-id</td>
<td>Example Image ID</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
<tr>
<td>/ instance/security-group</td>
<td>Instance binds security group information</td>
<td>Update of 2017 MULT09MULTHUE 19</td>
</tr>
</tbody>
</table>

Fields mac and local-ipv4 in red in the above table indicate the device address and private IP of the network interface specified for the instance, respectively.

The destination URL address of the request is case sensitive. You must construct the destination URL address of a new request according to the returned result of the request.

In the current version, the returned data of placement has been changed. To use the data in the previous version, specify the previous version path or leave the version path empty to access the data of version 1.0. For more information about the returned data of placement, please see [Region and Availability Zone](#).

### Querying Instance Metadata

You can access the instance metadata such as instance's local IP and public IP from within an instance to manage connections with external applications.

To view all the instance metadata from within a running instance, use the following URI:
To obtain information about the repossessing status of a spot instance, you can access the metadata by using the `cURL` tool or an HTTP GET request.

For resources that do not exist, HTTP error code "404-Not Found" is returned.

Operations on instance metadata can only be performed from the **Inside the instance**. Please log in to the instance first. For more information about logging in to the instance, please refer to the [Log in to the Windows instance](#) and [Log in to the Linux instance](#).

### Example of querying metadata

The following example shows how to obtain the metadata version information.

Note: When the Tencent Cloud modifies the metadata access path or returned data, a new metadata version is released. If your application or script depends on the structure or returned data of previous version, you can access metadata using the specified previous version.

```
[qcloud-user]# curl http://metadata.tencentyun.com/
1.0
* February 19, 2019
latest
<meta-data
```

The following example shows how to view the metadata root Directory. In which `/` The ending word means Directory, not with `/` The word at the end represents Access's data. For the specific meaning of Access's data, please refer to the previous article. **Instance metadata classification**.

```
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/
instance-id
instance-name
local-ipv4s/
Mac
[NETWORK]
  --Placement'
  public-ipv4
  uuid
```

The following example shows how to get the physical location information of an instance. For the relationship between the returned data and the physical location, please refer to [Regions and AZs](#).
The following example shows how to get the instance Private IP. If there are multiple ENI in the instance, return the network address of eth0 Device.

```bash
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/placement/region
ap-guangzhou
```

The following example shows how to obtain the public IP of an instance.

```bash
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/public-ipv4
139.199.11.29
```

The following example shows how to get the instance ID. The instance ID is the unique identity of the instance.

```bash
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/instance-id
ins-3g445roi
```

The following example shows how to get the instance uuid. Instance uuid can be used as the unique identity of an instance. It is recommended to use instance ID to distinguish between instances.

```bash
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/uuid
cfac763a-7094-446b-a8a9-b995e638471a
```

The following example shows how to obtain the MAC address of an instance's eth0 device.

```bash
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/mac
52:54:00:BF:B3:51
```

The following example shows how to get the information of instance ENI. Multiple pieces of ENI will return multiple rows of data, each of which is a piece of ENI's data Directory.

```bash
52:54:00:BF:B3:51/
```

The following example shows how to obtain the information of specified ENI.
The following example shows how to get VPC information to which a specified ENI belongs.

```
vpc-ja82n9op
```

The following example shows how to get the address list of the specified ENI binding Private IP. If ENI binds multiple Private IP, it returns multiple rows of data.

```
```

The following example shows how to obtain the information of private IP.

```
10.15.1.1
```

The following example shows how to get a Private IP gateway. Only VPC Model can query this data. VPC Model, please refer to Virtual Private Cloud.
The following example shows how to obtain the public network mode of Private IP and Access. Only VPC Model can query this data. Basic network Model through Public gateway Access public network.

```
NAT
```

The following example shows how to obtain the public IP bound to a private IP.

```
139.199.11.29
```

The following example shows how to obtain the subnet mask of a private IP.

```
255.255.192.0
```

The following example shows how to get the instance billing type. 

```
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/payment/charge-type
Default: POSTPAID_BY_HOUR.
```

The following example shows how to get the instance creation time.

```
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/payment/create-time
2018-09-18 11:27:33
```

The following example shows how to get the time of instance Terminate. (Prepaid mode only)

```
curl metadata.tencentyun.com/latest/meta-data/spot/termination-time
2018-10-18 11:27:33
```

The following example shows how spot instance obtains the Terminate time of the instance.

```
curl metadata.tencentyun.com/latest/meta-data/spot/termination-time
2018-08-18 12:05:33
```

The following example shows how to get the account AppId to which CVM belongs.

```
[qcloud-user]# curl http://metadata.tencentyun.com/latest/meta-data/app-id
123456789
```
Query instance user data

You can specify the instance user data when you create the instance. After setting the cloud-init, CVM can access the data by Access.

**Retrieve user data**

Users can Access user data in the following ways within CVM.

```
[qcloud-user]# curl http://metadata.tencentyun.com/latest/user-data
179, client, shanghai
```
Renaming Instances

Last updated: 2020-04-01 11:11:53

Scenario

To help users manage CVM instances on the console and locate CVMs quickly by name, Tencent Cloud allows users to rename an instance at any time and the new name takes effect instantly.

Directions

**Modifying the name of an instance**

1. Log in to the CVM Console.
2. In the instance list, select the CVM whose name needs to be modified and click More>Instance Settings> Rename on the right.
3. In the “Rename” window that pops up, enter a new instance name, and then click OK.

**Modifying the names of multiple instances**

1. Log in to the CVM Console.
2. In the instance list, select multiples CVM instances whose names need to be modified and click More actions>Instance Settings> Rename on the top.
3. In the “Rename” window that pops up, enter a new instance name, and then click OK.

CVMs modified using this method will have the same instance name.
If you forget your password, you can reset the login password of the instance on the console. This document introduces how to change the login password of the instance on the CVM console.

**Note:**

1. Password resetting is only allowed for instances that have been shut down.

2. For a running instance whose password has been modified on the console, the CVM is shut down in the process of password reset. Schedule the time in advance to avoid data loss. You are recommended to perform the operation at the lows of business to minimize the impact.

**Resetting Password of Single Instance**

- Log in to the [CVM console](#), and select a CVM whose password needs to be reset.
• Click **More -> Password/Key ->Reset Password** on the page.

• Go to the Reset Password page. If the instance has been shut down, directly select the account whose password needs to be reset, then enter and confirm the new password, and click **Reset**.
Go to the Reset Password page. If the instance is running, select the account whose password needs to be reset, then enter and confirm the new password, and click Next. Select Agree to
force shutdown, and click Change Now.

Resetting Password of Multiple Instances

- Log in to the CVM console, and select multiple CVMs whose password needs to be reset.
- Click Reset password on the page.
- Go to the Reset password page. If all of the instances have been shut down, directly select the account whose password needs to be reset, then enter and confirm the new password, and click Reset.
- Go to the Reset password page. If some instances are still running, select the account whose password needs to be reset, then enter and confirm the new password, and click Next. Select Agree to forced shutdown, and click Change Now.
Obtaining the private IP address of an instance

**Obtaining the Address on the Console**

1. Log in to the CVM Console.

2. The CVM list displays the instances under your account. Move the mouse cursor over the private IP of the CVM, and the "Copy" button will appear; click the button to copy the private IP.

<table>
<thead>
<tr>
<th>ID/Instance Name</th>
<th>Mon...</th>
<th>Status</th>
<th>Availabili...</th>
<th>Model</th>
<th>Configuration</th>
<th>Primary IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnamed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-core 1 GB 1 Mbps</td>
<td>.4 (Private)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>System disk:HDD Cloud Storage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Network: Default-VPC</td>
<td></td>
</tr>
</tbody>
</table>

**Obtaining the Address Using API**

For more information, please see DescribeInstances API.

**Obtaining the Address Using Instance Metadata**

1. Log in to the CVM instance. For more information, please see Log in to Linux Instance and Log in to Windows Instance.

2. Enter the command:

```
curl http://metadata.tencentyun.com/meta-data/local-ipv4
```
If the returned value is in the following structure, you can see the private IP address:

```
# curl http://metadata.tencentyun.com/meta-data/local-ipv4
10.XXX.XXX.2
```

For more information, please see Instance Metadata.

Private Network DNS Settings

When a network resolution error occurs, users can set the private network DNS manually. The private network DNS can be set as follows:

- **For Linux users.** CVM DNS can be modified by editing the `/etc/resolv.conf` file on the CVM. Run the command `vi /etc/resolv.conf`, and edit the DNS IP according to the above table.

```
root@V3-90-86-ubuntu:~# vi /etc/resolv.conf
nameserver 10.243.28.52
nameserver 10.225.30.178
options timeout:1 rotate
```

- **For Windows users.** On the CVM, open Control Panel -> Network and Sharing Center -> Change Adapter Settings, right-click the Property of the ENI, and double-click IPv4 to modify
the DNS server IP.
Modifying Private IP Addresses

Last updated: 2020-04-01 11:11:54

Scenario

You can modify the private IP of a CVM instance in VPC directly on the console or by changing the subnet of the CVM instance. This document describes how to modify the private IP of a CVM instance in the VPC console.

For details on changing the subnet, see Change Instance Subnet.

Limits

- Modifying the primary IP of a primary ENI may cause the CVM to restart.
- The primary IP of a secondary ENI cannot be modified.

Directions

1. Log in to the CVM Console.
2. Select the region of the instance whose private IP you want to modify, and click the instance ID/name to enter its details page.
3. On the instance details page, select the [ENI] tab and click Modify Primary IP to expand the primary ENI.
4. In the primary ENI operation list, click Modify Primary IP.
5. In the “Modify Primary IP” window that pops up, enter the new IP and then click OK. It takes effect after the instance is restarted.

You can only enter private IP in the current subnet CIDR.
Obtaining a Public IP Address of the Instance

Scenario

You can get public IP through console, API, or Instance Metadata.

Directions

**Obtaining the Address on the Console**

1. Log in to the CVM Console.
2. For each instance, there is a copy icon for an IP address. Click the button to copy this IP address.

**Note:**
The public IP address is mapped to the private IP address through NAT. Therefore, if you view the attributes of a network interface within the instance (for example, by using the commands such as `ifconfig` (Linux) or `ipconfig` (Windows)), the public IP address is not displayed. To obtain the public IP address of an instance from within the instance, please see Obtain the Public IP Address of an Instance Using Instance Metadata.

**Obtaining the Address Using API**

For more information, please see DescribeInstances API.

**Obtaining the Address Using Instance Metadata**

1. Log in to the CVM instance. For more information, please see Log in to Linux Instance and Log in to Windows Instance.
2. Enter the command:

   ```bash
curl http://metadata.tencentyun.com/meta-data/public-ipv4
   ```
If the returned value is in the following structure, you can see the public IP address:

For more information, please see Instance Metadata.
scenario

This document describes how to change a public IP address. There are two different ways:

- Replace public IP directly
- First convert to Elastic Public IP, and then unbind Elastic Public IP

Notes

If you choose to replace public IP directly, please note the following items:

- At most 3 times/day per account per region.
- One instance can only replace a public IP one time.
- The previous public IP will be released after replacement.

If you choose to convert to Elastic Public IP first, and then unbind Elastic Public IP, please note the following items:

- When an EIP is bound to a CVM instance, the current public IP address of the instance will be released.
- The Elastic Public IP quota per account per region is 20.
- In order to ensure the effective use of IP resources, EIPs that are not bound to CVMs will incur an idle fee, which is billed on hourly basis.
  For details on EIP billing rules, see Billing for Elastic Public IP.

Prerequisites

- Log in to CVM Console.

Directions

Method 1: Replace public IP directly
1. On the instance management page, select the CVM column of the IP you want replace and click **More > IP/ENI > Change Public IP**, as shown below:

![Image of instance management page](image)

2. In the pop-up “Change IP” box, click **Confirm** to complete the replacement of the IP.

**Method 2: First convert to Elastic Public IP, and then unbind Elastic Public IP**

**Converting to Elastic Public IP**

1. On the instance management page, select the CVM column of the IP you want to replace and click **More**`, as shown below:

![Image of instance management page](image)

2. In the pop-up “Convert to EIP” box, click **OK**.

**Unbinding EIPs**

1. After converting the EIP back to a public network IP, click **More > IP/ENI > Unbind Elastic IP** in the CVM column, as shown below.
2. In the pop-up “Unbind EIP” box, tick **A free public IP will be assigned after unbinding (note: the public IP is randomly assigned and cannot be unbound from the instance)**, and click **OK**.

3. In the pop-up box, click **OK** to complete the replacement.

**Releasing EIP (Optional)**

The unbound EIP is still kept under your account and incurs idle fees. To avoid such charges, we recommended you perform the following operations to release EIPs unbound from instances.

1. In the left sidebar, click **EIP** to open the EIP management page.
2. Select the unbound EIP on the EIP management page, and click **More > Release**.
3. In the pop-up box, tick **Release the above EIPs** and click **Release** to release the EIP.
Retrieve the public network IP address

Scenario

This document describes how to retrieve a public IP address that has been used before but not yet assigned to other users.

Notes

- The retrieved IP address is an EIP, and the total number of EIPs must not exceed the total quota.
- Each account can apply for a specific IP address up to three times per month in each region.

Directions

1. Log in to CVM Console.
2. In the left sidebar, click EIP to access the EIP management page.
3. Click Retrieve IP, as shown in the following figure:

![Retrieve IP](image)

4. In the Retrieve IP pop-up window, enter the public IP address and click Check to query whether the IP address can be retrieved, as shown in the following figure.
If yes, click **Apply Now**.

If no, the IP address that you applied for cannot be retrieved for reasons such as it has already been assigned. In this case, try to apply for another IP address or click **Cancel** to exit.
The subnet of the CVM instance in VPC can be directly replaced in the console.

Limits

- The associated CVM restarts automatically after its subnet is replaced.
- The subnet cannot be replaced for the secondary ENI.

Procedure

- Log in to the CVM Console.
- Select a region.
- Click the ID of the instance to go to its details page.
On the instance details page, click **ENI**, and then click the ID of primary ENI.
- Go to the primary ENI details page, and click **Replace Subnet**.

- Select the new subnet in the pop-up subnet replacement page, enter the new primary IP, and click **OK**. Then, the instance restarts to complete the replacement.
Note:

i. If you have not created a subnet in this availability zone, create a new subnet first.
ii. You can only enter the private IP of the current subnet CIDR.
Change Security Group

Last updated : 2020-02-02 17:31:26

Scenario

Security group is a stateful virtual firewall for filtering packets and is used to set the network access controls for a single or multiple CVMs. It is a logical grouping and an important means of network security isolation. When a CVM instance is created, you must configure the security group for it. Tencent Cloud supports configuring a new security group for the CVM instance after it is created.

**Note:**
To configure a new security group for the instance, create a security group first.

Steps

- Log in to CVM Console, and select the instance to be assigned to the new security group.
- Click More on the right, and then click Configure Security Group.
- Enter the security group configuration page, and select the name of the new security group (multiple names can be selected), and click Confirm.
- Another way is to select the instance and click More actions on the top > Add to security group to get into the configuration page.

**Note:**
You can only bind a security group in the same project and region as CVM.

- You can also enter the instance details page, click Security Groups tab > Bind to bind the security group.
- Enter the security group configuration page, and select the name of the new security group (multiple names can be selected), and click OK to replace the security group.
Search Instances

Last updated: 2020-04-27 14:46:34

Scenario

By default, the CVM console displays the instances for all projects in the current region. To help you quickly search instances in the current region, Tencent Cloud provides a CVM search feature. You can filter out instances by resource attributes such as project, instance billing method, instance type, availability zone, IP, instance ID, and instance name.

Directions

1. Log in to the CVM Console.
2. Enter the content you wish to search based on your needs, and click to search.
Enter the keyword in the search text box, and click \( \text{Search} \), as shown below:

Choose a specific dimension to search (such as project, project, instance billing method, instance type, etc..) and click \( \text{Search} \), as shown below:
3. To learn more about search syntaxe, click to view the relevant syntax of search instances. For more search instance syntax, please see the following figure.
<table>
<thead>
<tr>
<th>Enter Format</th>
<th>Example</th>
<th>Display in Search Box</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single keyword</td>
<td>[Keyword]</td>
<td>10.0.0.1</td>
<td>10.0.0.1 Use ↑ to split more than one keyword</td>
</tr>
<tr>
<td>Multiple keywords</td>
<td>[Keyword] [Enter key +] [Keyword]</td>
<td>10.0.0.1 <a href="http://www.123.com">www.123.com</a> 192.168.23.54</td>
<td>10.0.0.1 <a href="http://www.123.com">www.123.com</a> 192.168.23.54</td>
</tr>
<tr>
<td>Single resource type</td>
<td>[Resource type]: [Keyword]</td>
<td>IP: 10.0.0.1</td>
<td>IP: 10.0.0.1 Use ↑ to split more than one keyword</td>
</tr>
<tr>
<td>Multiple resource types</td>
<td>[Resource type]: [Keyword]: [Enter key +] [Resource type]: [Keyword]</td>
<td>Availability Zone: Hong Kong Zone 2 Project: Default</td>
<td></td>
</tr>
<tr>
<td>Single resource type and multiple keywords</td>
<td>[Resource type]: [Keyword]: [Keyword]</td>
<td>CVM Status: Creating</td>
<td>CVM Status: Creating Use ↑ to split</td>
</tr>
<tr>
<td>Pasted contents</td>
<td>[pasted contents]</td>
<td>112.11.22.33 112.11.22.34 112.11.22.53</td>
<td>112.11.22.33 112.11.22.34 112.11.22.53</td>
</tr>
</tbody>
</table>
Export Instances

Scenario

You can export the CVM instance list of a region in the console, and customize the fields to be exported. You can select a maximum of 27 fields, including ID, instance name, status, region, availability zone, instance type, operating system, image ID, CPU, MEM, bandwidth, public IP, private IP, system disk type, system disk size, data disk type, data disk size, network type, subnet ID, VPC name, creation time, expiry time, instance billing mode, network billing mode, project, dedicated host ID, and tag.

Directions

1. Log in to the CVM Console.
2. Select a region.
3. Click in the upper right of the instance list, as shown below:

4. In the pop-up “Export instances” window, select the fields you want to export and click “OK”, as shown below:

   You can select a maximum of 27 fields to export.
## Export Instances

- Select All
- ID
- Instance Name
- Status
- Region
- Availability Zone
- Instance Type
- CPU (core)
- MEM (GB)
- Operating System
- Image ID
- VPC name
- Subnet ID
- Subnet name
- Creation Time
- Expiry Time
- Instance Billing Mode
- Network billing mode
- Project
- Dedicated Host ID
- Tag

### Export range
- All Instance
- Only export search result
- Selected Instance

- Bandwidth (Mbps)
- Primary public IPv4
- Primary private IPv4
- Primary IPv6
- System Disk Type
- System disk size (GB)
- Data Disk Type
- Data disk size (GB)
- Network type
- VpcId

**OK**  **Close**
Querying the Repossession Status of a Spot Instance

Last updated : 2020-02-11 13:41:03

Spot instances may be repossessed by Tencent Cloud due to price or inventory reasons. To enable users to perform custom operations before instance repossession, we provide an API for obtaining information about repossession status via an internal metadata mechanism.

Metadata

Instance metadata refers to data relevant to an instance. It can be used for configuring or managing an operating instance. You can access and obtain instance metadata via an instance. For more information, see Instance Metadata.

Using metadata to obtain information about repossession status of a spot instance

To obtain information about the repossession status of a spot instance, you can access the metadata by using the cURL tool or an HTTP GET request.

```bash
curl metadata.tencentyun.com/latest/meta-data/spot/termination-time
```

- If the following information is returned, it indicates the repossession time of the spot instance.

  ```
  2018-08-18 12:05:33
  ```

- If the error code 404 is returned, the instance is not a spot instance or repossession has not been triggered.

For more information, see Instance Metadata.
Renew Instances

Last updated : 2020-04-16 14:56:25

This document introduces how to renew **Postpaid instance**.

- **Postpaid instance**: Postpaid instances can be automatically activated with sufficient balance in your account. For more information, please see [Online Top-up](#).
Shutdown Instances

Scenario

The instance can be shut down when you need to stop the service, or modify configurations that can be done only in the shutdown state. Shutting down an instance is like shutting down a local computer.

Notes

- You can shut down an instance using system commands (such as the shutdown command under Windows system and Linux system) or through the Tencent Cloud console. We recommend you view the shutdown process on the console to check whether any problem occurs.
- The instance will no longer provide services after the shutdown. Before the shutdown, make sure the CVM has stopped receiving service requests.
- During the shutdown, the status of the instance will change from "shutting down" to "shutdown". If the shutdown process takes too long, there may be an exception. For more information, please see Close an CVM to avoid forced shutdown.
- After an instance is shut down, all storage is still connected to the instance, and all disk data are retained. Data in the memory will be lost.
- Shutting down an instance does not change its physical attributes. The public and private IPs of the instance remain unchanged. Elastic Public IP is still bound to the instance. Due to service interruption, however, you will receive an error response when accessing these IPs. Classiclink relationship remains unchanged.
- If the instance belongs to the real server cluster of the CLB instance, it can no longer provide services after the shutdown.
  If the health check policy has been configured, the instance that has been shut down will be automatically blocked and requests will no longer be forwarded to it. Otherwise, the client may receive a 502 error code. For more information, please see Health Check.
- If the instance that has been shut down is in an auto scaling group, the auto scaling service will mark the instance as having poor performance, and may replace and move it out of the auto scaling group. For more information, please see Auto Scaling.
Directions

**Shutdown an instance via the console**

1. Log in to the CVM Console.
2. Select different methods based on actual needs.
   - Shut down an instance: select the instance to be shut down, and click **More**> **Instance Status**> **Shutdown** in the operation column on the right side.
   - Shut down multiple instances: select all instances to be shut down, and click **Shutdown** at the top of the list to shut down instances in batches. Reasons are given for instances that cannot be shut down.

**Shutdown an instance via API**

For more information, see the **StopInstances** API.

**Subsequent Operations**

You can modify the following attributes only if the instance has been shut down.

- **Instance configuration (CPU, memory):** To change the instance type, see **Change Instance Configuration**.
- **Size of a mounted cloud disk:** * To adjust the size of a cloud disk, see **Expanding Cloud Disks**.
- **Change password:** see **Login Password**.
- **Load SSH key:** see **SSH Key**.
Restart Instances

Last updated: 2020-02-05 15:50:51

Scenario

Reboot is a necessary method to maintain CVM. Rebooting CVM instances is equivalent to restarting operating systems of local computers.

- It is recommended that users reboot instances using the reboot operation provided by Tencent Cloud rather than running reboot command in instances (such as restart command in Windows and Reboot command in Linux). Generally speaking, it takes only a few minutes to reboot your instances after the reboot operation is performed, but instances are unable to provide services during rebooting. Therefore, please make sure the CVM has stopped receiving service requests before rebooting.
- Since the physical characteristics of instances are not changed after the reboot, the Public IP address and Private IP address of, and any data stored in the instances will not be altered.
- Rebooting instances will not start a new billing period. The length of time for use of postpaid instance will be kept, which will not affect its price range.

Directions

Use console to reboot instances

1) Open CVM console.

2) To reboot a CVM instance running solely, click More > Instance Status > Restart on the action bar to the right side.

3) To reboot CVM instances running in batch, check all the instances to be rebooted, and click Restart on the top of the list. Reasons will be given for CVMs that cannot be restarted.

Use API to reboot instances

Please refer to RestartInstances API.
Logging into Linux Instance
Log into Linux Instance Using Standard Login Method

Last updated: 2020-01-21 10:19:51

Scenario

WebShell is the login method recommended by Tencent Cloud. No matter your local OS is Windows, Linux or Mac OS, as long as you have purchased public IPs for your instances, you can log in via Web Shell. This document describes how to log into a Linux instance via Web Shell.

Benefits of Web Shell:

- Supports copy and paste operations with shortcut keys.
- Supports scrolling with mouse wheel.
- Supports Chinese input.
- Features a high security (password or key is required for each login).

Applicable Local OS

Windows, Linux, or Mac OS.

Authentication Method

Password or Key

Prerequisites

- You must already have the admin account and password (or key) for the instance to be logged into.
  - If you choose Random Password when creating the instance, please go to Internal Message to check the password.
  - If you forgot your password, then reset the instance password.
- Make sure the CVM instance has a public IP, and port 22 is open (if the CVM is purchased with “Quick Configuration”, this port is open by default.)
Directions

1. Log in to the CVM Console.

2. On the instance’s management page, select the Linux CVM that you want to log in to and click Log In, as shown below:

3. In the Log into Linux Instance pop-up window, select Standard login method and click Log In Now, as shown below.
4. In the **Log into Instance** window, select **Password Login** or **Key Login**, as shown below:
If the login is successful, “Socket connection established” will display as shown below:

![Socket connection established message]

Subsequent Operations

After logging into the CVM, you can build a personal website or forum on the Tencent Cloud CVM or perform other operations. For more information, see the following documents:

- Build a personal WordPress site
Logging into Linux Instance via SSH Key

Last updated: 2020-02-12 09:40:19

Scenario

This document describes how to use SSH key to log into a Linux instance in a local computer using Linux or MacOS.

Applicable local OS

Linux or MacOS

Authentication Method

Password or SSH Key

Prerequisites

- You must already have the admin account and password (or key) for logging into the instance.
  - If you use a system default password to log in to the instance, obtain it by visiting Internal Message.
  - If you log in to the instance with a key, you must have created a key and bound it to this CVM. For more information, see SSH Keys.
  - If you forget your password, reset the instance password.
- A public IP has been purchased for your CVM instance, and port 22 is open (this is open by default for CVMs purchased with quick configuration).

Steps

Logging in with a password

1. Execute the following command to connect to the Linux CVM.
If your local computer uses Mac OS, you must open the terminal provided by the system and then execute the following command. If your local computer uses Linux, you can directly execute the following command.

```
ssh <username>@<hostname or IP address>
```

- **username** is the default account name obtained as a prerequisite.
- **hostname or IP address** is the public IP address or custom domain name of your Linux instance.

2. Enter the password you have already obtained, and press Enter to log in.

### Logging in with a key

1. Execute the following command to set the private key file readable only to you.

```
chmod 400 <The absolute path of the private key downloaded to be associated with the CVM>
```

2. Execute the following command for remote login.

```
ssh -i <The absolute path of the private key downloaded to be associated with the CVM> <username>@<hostname or IP address>
```

- **username** is the default account name obtained as a prerequisite.
- **hostname or IP address** is the public IP address or custom domain name of your Linux instance.

For example, execute the `ssh -i "Mac/Downloads/shawn_qcloud_stable" ubuntu@192.168.11.123` command to remotely log into the Linux CVM.

### Subsequent Operations
After logging into the CVM, you can build a personal website or forum on Tencent Cloud CVM or perform other operations. For more information, see the following:

- [Manually Build WordPress Website](#)
Logging into Linux Instances via Remote Login Tools

Last updated: 2020-04-01 11:11:54

Scenario

This document takes PuTTY as an example to introduce how to log in to a Linux instance from Windows by using remote login software.

Applicable OS

Windows

Authentication Method

Password or Key

Prerequisites

- You must already have the admin account and password (or key) of the instance to be logged in to.
  - If you use a system default password to log in to the instance, first go to Internal Message to get it.
  - If you forget your password, please reset the instance password.
- A public IP has been purchased and obtained for your CVM instance, and port 22 is open (this is open by default for CVM purchased with quick configuration).

Directions

Logging in with a password

1. Download the Windows remote login software, PuTTY.
   To download PuTTY: Click here
2. Double-click **putty.exe** to open the PuTTY client.

3. In the **PuTTY Configuration** window, enter the following content. This is shown in the following figure:

![PuTTY Configuration Window](image)

Parameters are as follows:
- **Host Name (or IP address)**: The public IP of the CVM (log in to the CVM Console to obtain the public IP in the instance list and details pages).
- **Port**: The port of the CVM. This must be set to 22.
- **Connect type**: Select **SSH**.
- **Saved Sessions**: Enter the session name, such as **test**.

After configuring **Host Name**, configure **Saved Sessions** and save it. You can double-click the session name saved under **Saved Sessions** to log in to the CVM subsequently.

4. Click **Open** to enter the PuTTY interface, and **login as**: is prompted.

5. Enter the username after **login as:** and press **Enter**.

6. Enter the password after **Password** and press **Enter**.

   The entered password is not displayed by default, as shown below:
After logging in, information about the CVM that you currently log in to appears to the left of the command prompt.

**Logging in with a key**

1. Download the Windows remote login software, PuTTY.
   
   Download putty.exe and puttygen.exe. To download PuTTY, [click here](#).

2. Double-click `puttygen.exe` to open the PuTTY Key client.

3. Click **Load**, select and open the path where the downloaded private key is saved. This is shown in the following figure:
   
   For example, select and open the private key file named `david`.

   ![PuTTY Key Generator](#)
4. In the **PuTTY Key Generator** window, enter the key name and the encrypted private key password. Click **Save private key**. This is shown in the following figure:

5. In the pop-up window, select the path where the key will be saved. In the file name field, enter **Key Name.ppk** and click **Save**. For example, save the private key file **david** as **david.ppk**. This
6. Double-click **putty.exe** to open the PuTTY client.
7. In the left sidebar, select **Connection > SSH > Auth**, to enter the Auth configuration interface.
8. Click **Browse**, and select and open the path where the key is saved. This is shown in the following figure:
9. Switch to Session configuration interface. Configure the CVM IP, port, and connection type. This is shown in the following figure:
Host Name (IP address): The public IP of the CVM. Log in to the CVM Console to obtain the public IP in the instance list and details pages.

Port: Port of the CVM, which must be 22.

Connect type: Select SSH.

Saved Sessions: Enter the session name, such as test.

After configuring Host Name, configure Saved Sessions and save it. You can double-click the session name saved under Saved Sessions to log in to the CVM subsequently.

0. Click Open to initiate the login request.

Subsequent Operations

After logging in to the CVM, you can build a personal website or forum on Tencent Cloud CVM or perform other operations. For more information, see the following documents:

- Build a personal WordPress site
- Build a Discuz! forum
Logging into Linux Instances via VNC

Last updated : 2020-04-01 11:11:55

Scenario

VNC login provided by Tencent Cloud allows users to remotely log in to CVM via a web browser. If a client does not have remote login installed or it cannot be used, user can log in to the CVM using VNC login to check the CVM status and perform basic management operations using the CVM account.

Applicable OS

Windows, Linux, or macOS.

Use Limits

- VNC login currently does not support copy and paste, Chinese input method, and file upload or download.
- When you use VNC to log in to CVM, mainstream browsers must be used, such as Chrome, Firefox, IE 10 and above.
- VNC login is a dedicated terminal, meaning only one user can use VNC login at a time.

Prerequisites

You must already have the admin account and password (or key) of the Linux instance to be logged in to.

- If you use a system default password to log in to the instance, first go to Internal Message to get it.
- If you forget your password, please reset the instance password.

Directions

1. Log in to the CVM Console.
2. On the Instance management page, select the Linux CVM you want to log in to and click **Log In**, as shown below:

3. In the **Log into Linux instance** window that pops up, select **Alternative login methods (VNC)** and click **Log In Now**, as shown below.

4. In the pop-up dialog box, enter the username after **login** and press **Enter**.

5. Enter the password after **Password** and press **Enter**.

   The entered password is not displayed by default, as shown below:
After logging in, information about the CVM that you currently log in to appears to the left of the command prompt.

Subsequent Operations

After logging in to the CVM, you can build a personal website or forum or perform other operations. For more information, see the following documents:

- Build a personal WordPress site
- Build a Discuz! forum
Logging into Windows instance

Logging into Windows Instance via Remote Desktop

Last updated: 2020-02-11 10:11:34

Scenario

This document describes how to log in to a Windows instance through remote desktop on a local computer.

Applicable OS

Windows

Prerequisites

- You must already have the admin account/password for logging into Windows instance remotely.
  - If you use a system default password to log in to the instance, obtain it by visiting Internal Message. If you forgot the password, then reset instance password.
- A public IP has been purchased for your CVM instance, and port 3389 is open (if the CVM is purchased with “Quick Configuration”, this port is open by default.)

Steps

The following steps take the Windows 7 operating system as an example.

1. On the local Windows computer, click , and enter mstsc in Search programs and files and press Enter to open the remote desktop connection dialog box, as shown below:
2. Enter the Windows server’s public IP after **Computer** and click **Connect**.

3. Enter the instance’s admin account/password in the **Windows Security** pop-up window, as shown below:

   If the **Do you trust this remote connection?** dialog box pops up, you can check **Don’t ask me again for connections to this computer** and click **Connect**.

4. Click **OK** to log in to the Windows CVM instance.
Log in to the Windows instance using the RDP file (recommended)

Scenario

Remote Desktop Protocol (RDP) is a multiple-channel protocol developed by Microsoft, which allows a local computer to connect to a remote computer. Tencent Cloud recommends that you use RDP to log in to your Windows CVMs. This document describes how to log in to Windows instances with RDP files.

Applicable Local Operating Systems

You can log in to your CVMs by using RDP on Windows, Linux, and MacOS.

Prerequisites

- You already have the admin account and password for logging into Windows instances remotely.
  - If you want to use a system default password to log in to the instance, you can view the password in Internal Messages.
  - If you forget your password, reset the instance password.
- A public IP address has been purchased for your CVM instance, and port 3389 is open (if the CVM is purchased with "Quick Configuration", this port is open by default.)

Procedure

RDP login on Windows

1. Log in to the CVM console.
2. On the instance's management page, select the Windows CVM that you want to log in to and click Log In, as shown below:
3. In the **Log into Windows instance** window that appears, select **Log in with RDP file** and click **Download RDP file** to download the RDP file to your local computer.

4. Double click the downloaded RDP file to remotely connect to your Windows CVM.
   - If you want to use a system default password to log in to the instance, you can view the password in **Internal Messages**.
   - If you forget your password, reset the instance password.

**RDP login on Linux**
We recommend that you use rdesktop as the remote desktop client. For more information, see the official introduction to rdesktop.

1. Run the following command to check if rdesktop has been installed.

   rdesktop

   - If yes, perform Step 4.
   - If no, you will be prompted with "command not found". In this case, perform Step 2.

2. Open a terminal window and run the following command to download rdesktop v1.8.3.

   wget https://github.com/rdesktop/rdesktop/releases/download/v1.8.3/rdesktop-1.8.3.tar.gz

   To install the latest version of rdesktop, go to the rdesktop page on GitHub to find it. Then, replace the installation path in the command with the new one.

3. In the directory where rdesktop will be installed, run the following commands to decompress and install rdesktop.

   tar xvzf rdesktop-<x.x.x>.tar.gz ## Replace x.x.x with the version number of the downloaded version.
   cd rdesktop-1.8.3
   ./configure
   make
   make install

4. Run the following command to connect to the remote Windows instance.

   Replace the values of the parameters in the example with your actual values.

   rdesktop -u Administrator -p <your-password> <hostname or IP address>

   - Administrator indicates the admin account mentioned in the prerequisites.
   - <your-password> indicates the login password that you set.
   - If you want to use a system default password to log in to the instance, you can obtain it in Internal Messages. If you forget your password, reset the instance password.
   - <hostname or IP address> indicates the public IP address or custom domain name of your Windows instance.

RDP login on MacOS
The following operations use Microsoft Remote Desktop for Mac as an example. Microsoft ceased providing a download link for the Remote Desktop client in 2017. Currently, its subsidiary HockeyApp is responsible for releasing the beta client.

The following operations use a CVM with Windows Server 2012 as an example.

1. Download and locally install Microsoft Remote Desktop for Mac.
2. Start MRD and click Add Desktop, as shown in the following figure:

![Microsoft Remote Desktop](image)

Add your first desktop connection to get started.

Add Desktop

3. The Add PC window appears. Follow the steps illustrated in the following figure to establish a connection to your Windows CVM.
i. In the **PC name** text box, enter your CVM’s public IP address.

ii. Click **Add** to confirm the creation.

iii. Use the defaults for other options and finish the process.

    Now, your connection has been established, as shown in the following figure:
4. Double click the newly added connection. Enter your username and password for the CVM and click **Continue**.
   - If you want to use a system default password to log in to the instance, you can view the password in **Internal Messages**.
   - If you forget your password, reset the instance password.

5. Click **Continue** to establish the connection, as shown in the following figure:
If the connection is successful, the following page appears:
Logging into Windows Instance via VNC

Scenario

VNC login offered by Tencent allows users to remotely connect to a CVM via a web browser. If a client does not have remote login installed, it cannot be used or logged into via any other means, users can connect to a CVM using VNC login to observe the CVM's status and do basic CVM management operations using the CVM account.

Use Limits

- Features such as copy/paste, Chinese input, and file upload/download are currently not supported on CVMs using VNC login.
- Mainstream browsers must be used when using VNC login on a CVM, such as Chrome, Firefox, and IE 10 or above.
- A VNC login is a dedicated terminal, meaning only one user can use a VNC login at a time.

Applicable OS

Windows, Linux, or macOS.

Prerequisites

You must already have admin account/password for logging into Windows instance remotely.

- If you use a system default password to log in to the instance, obtain it by visiting Internal Message.
  If you forgot the password, then reset instance password.

Steps

1. Log in to the CVM Console.
2. On the instance’s management page, select the Windows CVM that you want to log in to and click **Log In**, as shown below:

3. In the **Log into Windows instance** pop-up window, select **Alternative login methods (VNC)** and click **Log In Now**, as shown below.
4. In the login window, select “Send Remote Command” in the top left corner, and press **Ctrl-Alt-Delete** to enter the system login interface as shown below:
Reinstall System

Last updated: 2020-04-24 15:51:45

Operation Scenario

Reinstalling the operation system is an important method to restore instances to their initial status in the event of a system failure. This document describes how to reinstall the operating system.

Cloud Virtual Machine (CVM) supports two reinstallation types:

- **Single-system reinstallation**: is applicable to CVMs in any region. For example, reinstall from Linux to Linux or from Windows to Windows.
- **Cross-system reinstallation**: is available to Mainland China only, excluding Hong Kong, SAR. For example, reinstall from Linux to Windows or from Linux to Windows.

Currently, all new CBS instances and local disks support cross-system reinstallation. However, some existing 20-GB local disks currently do not support cross-system reinstallation through the console. If you are using these local disks, you can submit a ticket to apply for the cross-system installation feature, when needed.

Spot instances do not support system reinstallation.

Notes

- **Preparations**: back up important data in your system disk before reinstallation, because data in the system disk will be lost after reinstallation. To keep your system data, we recommend that you create a custom image and use this image to reinstall the system.
- **Recommended images**: we recommend that you use the image provided by Tencent Cloud or your custom image instead of those from unknown or other sources. Do not perform any other operations when the system disk is being reinstalled.
- **Physical features of the instance**: the public IP address of the instance does not change.
- **Billing**: when adjusting the size of the system disk (for CBS only), you will be charged according to the pricing standards of CBS. For more information, see CBS Pricing.
- **Subsequent operations**: after the system disk is reinstalled, data in data disks is not affected, but will be available for use only after the data disks are remounted.
Directions

You can reinstall the operating system in two ways:

- Reinstalling the system in the console
- Reinstalling the system through the API

**Reinstalling the system in the console**

1. Log in to the CVM console.
2. In the row of the instance for which you want to reinstall the system, choose **More > Reinstall System**, as shown in the following figure:

   ![Reinstall System](image)

3. In the system reinstallation window that appears, select the image used by the current instance or another image, set the disk size, enter the password, and click **Reinstall Now**.

   Here, the password is the one that you set when configuring the CVM instance or that was generated automatically by the system. If you forget the login password of your CVM instance and want to reset it, see **Resetting the Instance Password**.
Reinstalling the system through the API

- For more information, see the ResetInstance API.
This document introduces the Terminate of the instance and the overview and operation method of releasing the instance. For more expiration information, please refer to Expiration reminder.

Overview

When you do not need an instance, you can use Terminate for the instance, and the instance that was given by Terminate will be put into Recycle bin. For the instance in Recycle bin, you can renew, Resume or release the instance according to different scenarios and requirements.

If your account in arrears, for your Pay as you go instance, you need to renew it before Resume.

For Pay as you go's instance type, Terminate and his release instance include the following ways.

- **Manual Terminate method**: For an example of Pay as you go without in arrears, you can choose manual Terminate. An instance of the type of Pay as you go will be completely released after Recycle bin has retained it for 2 hours at most.
- **Timing Terminate mode**: Set timing Terminate for the instance of on demand's payment type. You can choose a future time timing Terminate resources, Terminate time accurate to seconds. The instance resources of Terminate will be released immediately and will no longer enter Recycle bin. Before setting the time for Terminate, you can do it at any time. Cancel Scheduled Termination.
- **Due / in arrears automatic Terminate mode**: * Instances of Pay as you go type will be automatically released after the balance is less than 0 for 26 hours (the fee will continue to be deducted in the first 2 hours, and the phone will be shut down and stopped in the next 24 hours. In arrears's Pay as you go instance is not included in Recycle bin. You can view it in the instance list. Complete within the specified time to renew Can continue to use.

| Active Terminate (not in arrears) | Timed Terminate (not in arrears) | Due / in arrears automatic Terminate |
### Pay as you go type example

<table>
<thead>
<tr>
<th>Active Terminate (not in arrears)</th>
<th>Timed Terminate (not in arrears)</th>
<th>Due / in arrears automatic Terminate</th>
</tr>
</thead>
<tbody>
<tr>
<td>After Terminate, the instance will be retained in Recycle bin for up to 2 hours, and if Resume is not released after the expiration date, the instance will be released.</td>
<td>The instance of setting timing Terminate will be released directly after the set time and will not enter Recycle bin.</td>
<td>After the instance in arrears, the fee will continue to be deducted in the first 2 hours, and the instance can be used normally. The phone will be turned off and the deduction will be stopped in the next 24 hours, and the Pay as you go instance of in arrears will not enter Recycle bin. If the renewal is not completed during this period, the instance will be released.</td>
</tr>
</tbody>
</table>

### Related influence

When an instance enters the status of Terminate, the related effects of instance data, elastic IP and billing are as follows:

- **Billing:** When an instance is being terminated or has been terminated, no expenses related to this instance are incurred.

- **Instance data:** Both the mounted local site and the inelastic HDD cloud disk will be released at the same time. The data cannot be recovered. Please back up in advance. Elastic HDD cloud disk will follow its own life cycle.

- **EIP:** EIPs (including IPs on the secondary ENI) of a terminated instance are retained, and idle IPs may incur expenses.

### An example of Terminate and the release of Pay as you go

For the example of Pay as you go, you can choose Terminate immediately or Terminate on time.

**Terminating Instances on the Console**

1. Log in to the CVM Console.
2. According to the actual demand, choose different Terminate examples to operate.
3. Terminate a single instance: Find the instance to be terminated in the list, and click **More -> CVM Status -> Terminate** On the right side.

- **Batch Terminate instances** Check all the instances that require Terminate, and click **more Operations-> Terminate / return** at the top. The example of Terminate will show the reason.

3. In the pop-up window, you can select **Terminate Now** or **Scheduled Termination** Instances.
   - **Terminate Now** If you choose Terminate immediately, you can choose whether to release resources immediately or 2 hours later. If you choose to release immediately, the data related to the instance will be cleared and cannot be Resume.
   - **Scheduled Termination** If you select timed Terminate, you need to set a timed time for Terminate. After expiration, the instance will be timed and released by Terminate, and the data cannot be Resume.

4. After selecting Terminate method, click "next" to confirm Terminate and retain the actual and related resources.

5. Click "start Terminate" after confirming Terminate's resources.

**Cancel Scheduled Termination**

1. Log in to the **CVM Console**.

2. In the list of instances, find the instance that needs to undo timing Terminate, and in "**Instance billing mode** "found in column** Scheduled Termination** Move the mouse to **The prompt box
3. Click "undo", and the confirmation revocation timing Terminate prompt box pops up.
4. In the pop-up prompt box, confirm the instance information of Terminate with timing for cancellation, and click **OK**. The cancellation by Terminate will take effect immediately. as shown
Terminating Instances using API

For more information, please see the API TerminateInstances.
This document describes the reclaiming mechanism of an instance and the operation method for recovering an instance. For more information on expiration, please see Expiry Reminder.

Reclaiming Instance

Tencent Cloud Recycle Bin is a cloud service reclaiming mechanism. The prepaid instance will be shut down on the expiry date or on the day when it is actively terminated before expiry, and then is automatically put into the recycle bin. The instance configured with auto renewal is automatically renewed if account balance is sufficient. No reclaiming mechanism is provided for postpaid instances. The instance will be released after 26 hours.

Postpaid Instance in Recycle Bin

- **Retention time:** The instance deleted by the user is retained for 2 hours in the recycle bin.
- **Expiry processing:** If the instance is not renewed within 7 days, the system will release resources and start to automatically Terminate Instance.
- **Mounting relationship:** After the instance is put into the recycle bin, the mounting relationship with CLB, elastic public IP, elastic cloud disk, secondary ENI, and Classiclink will not be stopped automatically.
- **Operation limits:** You can only renew or terminate the instances in the recycle bin.

Recovering Instance

1. Log in to the CVM Console.
2. On the left navigation bar, click Recycle Bin -> CVM to enter the CVM reclaiming list.
3. Recover single instance: Find the instance to be recovered in the list, click Recover button, and complete the renewal payment.
4. Recover instances in batch: Select all instances to be recovered, click Recover Selected on the top, and complete the renewal payment.
Spot Instances

Scenario

This document provides guidance on managing and purchasing spot instances. Currently, spot instances are available through the following channels:

- **CVM console**: Spot Instances has been added as an option to Billing Mode on the CVM purchase page.
- **BatchCompute console**: Spot instances can be selected when users submit jobs and create computing environments in the BatchCompute console.
- **TencentCloud API**: Parameters related to spot instances have been added to the RunInstances API.

Directions

**CVM console**

1. Log in to the CVM purchase page.
2. On the **Select a model** tab page, set Billing Mode to Spot Instances.
3. Specify Region, Availability Zone, Network, Instance, and other configurations as required and prompted.
4. Check the information of the spot instance to be purchased and the cost details of each configuration item.
5. Click Purchase and complete payment.
   - After completing payment, you can log in to the CVM console to check your spot instance.

**BatchCompute console**

- **Async API**: When you submit a job, create a computing environment, or modify the expected number of instances in a computing environment, the BatchCompute instance processes your requests asynchronously. When it cannot fulfill the current request due to inventory or price reasons, the BatchCompute instance continuously applies for spot instance resources until the current request is fulfilled.

  If you need to release an instance, you need to adjust the expected number of instances in the computing environment via the BatchCompute console. If you release instances via the CVM
console, the BatchCompute console will automatically create instances until the expected number of instances is met.

- **Cluster Mode**: The computing environment of a BatchCompute instance can maintain a batch of spot instances as a cluster. You only need to submit the expected quantity, configurations, and maximum price of the spot instances. The computing environment will continuously apply for spot instances until the expected quantity is met. Even if spot instances go offline, the computing environment will automatically apply for spot instances again to meet the expected quantity.

- **Fixed Price**: Currently, spot instances are provided at fixed discounts. You must set a value that is greater than or equal to the current market price. For the market prices, see Spot Instances - Supported regions and instance types.

**Directions**

1. Log in to the BatchCompute console.
2. On the **Computing environment** page, randomly select a region, such as Guangzhou, and then click **New**.
   The **New computing environment** page appears.
3. On the **New computing environment** page, set **Billing Type** to **Spot Instance** and then specify configurations such as **Model Type**, **Image**, **Name**, and **Expected quantity** as required, as shown in the following figure:

4. Click **OK** to finish creation.
   Then you can check the new computing environment in the BatchCompute console. To view the creation progress of CVM instances that are being created in the computing environment, click **Activity Logs** and **Instance List** for the computing environment.
**TencentCloud API**

In the RunInstances API, you can specify the `InstanceMarketOptionsRequest` parameter to enable or disable the spot instance mode and configure the information about spot instances.

- **Sync API**: Currently, RunInstances provides a one-time synchronization request API. This means that if the application fails because the inventory is insufficient or the requested price is lower than the market price, the RunInstances API immediately returns a failure code and does not apply for the spot instance again.

- **Fixed Price**: Currently, spot instances are provided at fixed discounts. You must set a value that is greater than or equal to the current market price. For the market prices, see [Spot Instances - Supported regions and instance types](https://cvm.tencentcloudapi.com/).

**Example**

You have an instance in Guangzhou Zone 3, and the billing mode of the instance is pay-as-you-go on an hourly basis and in spot mode. The specific configurations of the billing mode are as follows:

- MaxPrice: 0.6 CNY/hour
- SpotInstanceType: one-time
- ImageId: img-pmqg1cw7
- InstanceType: S2.MEDIUM4 (Standard 2, 2-core, 4GB)
- InstanceCount: 1

**Request parameters**

```url
https://cvm.tencentcloudapi.com/?Action=RunInstances
&Placement.Zone=ap-guangzhou-3
&InstanceChargeType=SPOTPAID
&InstanceMarketOptions.MarketType=spot
&InstanceMarketOptions.SpotOptions.MaxPrice=0.60
&InstanceMarketOptions.SpotOptions.SpotInstanceType=one-time
&ImageId=img-pmqg1cw7
&InstanceType=S2.MEDIUM4
&InstanceCount=1
&<common request parameters>
```

**Response parameters**

```json
{
    "Response": {
        "InstanceIdSet": ["ins-1vogaxgk"]
    }
}
```
"RequestID": "3c140219-cfe9-470e-b241-907877d6fb03"
}
No Charges When Shut down for Pay-as-You-Go Instances

Scenario

"CVM No Charge When Shut Down" means pay-as-you-go instances (CPUs and memory) that have been shut down will not be billed. Cloud disks (system disk and data disk), public network bandwidth, images, and other key components of the CVM are still billed. For more information, please see No Charges When Shut down for Pay-as-You-Go Instances Details.

Directions

**Shut down an instance via console**

1. Log in to the CVM Console.
2. Choose different operation methods based on actual needs.
   - Shutting down a single instance:
     a. Select the instance you want to shut down, and click **More > Instance Status > Shutdown** on the right operation column.
     b. Tick **CVM No Charge when Shut down** and click **OK**.
        If the instance does not support this feature, "No Charge when Shut Down" is not supported will be displayed in the instance list.
   - Shutting down multiple instances:
     a. Select all the instances you want to shut down and click **Shutdown** at the top of the list to shut down instances in batches.
        Reasons are given for instances that cannot be shut down.
     b. Tick **CVM No Charge when Shut down** and click **OK**.
        If the instance does not support this feature, "No Charge when Shut Down" is not supported will be displayed in the instance list.

**Shut down an instance via API**

You can use StopInstances API to shut down an instance. For details, please see StopInstances. To enable this feature via API, please add the following parameter:
<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Required</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>StoppedMode</td>
<td>No</td>
<td>String</td>
<td>The &quot;No Charge when Shut down&quot; feature is only available for pay-as-you-go instances. <strong>Range:</strong> KEEP_CHARGING: Keep charging after the instance is shut down. STOP_CHARGING: No charge when shut down. <em>Default value:</em> KEEP_CHARGING</td>
</tr>
</tbody>
</table>
Images
Create Custom Images

Last updated: 2020-04-20 18:33:16

Scenario

When creating an image, you can start an instance with a public image, connect it to the instance, and deploy your software environment. If the instance runs normally, you can create a new custom image based on this as needed, so you can use this image to start more new instances that have the same custom configurations as the original one.

- When you create a custom image, the system creates a related snapshot by default. You need to delete the associated images before deleting this snapshot. Because snapshot has been commercialized, retaining a custom image will incur a certain snapshot fee. For more information on snapshot billing, please see Commercialization FAQs.
- For CVMs created based on public images after July, 2018, creating images online is supported (i.e., you can create images without shutting down the instance).
- For other CVMs, shut down the instance before creating a custom image to ensure that the image has the same deployment environment as the current instance.

Notes

- Each region supports a maximum of 10 custom images.
- The following directories and files will be removed.
  - /var/log/
  - /root/.bash_history, /home/ubuntu/.bash_history (Ubuntu system)
- When Linux instance creates a custom image, make sure /etc/fstab does not include data disk configuration. Otherwise, instances created with this image cannot be started normally. If the Linux instance that creates the custom image has a data disk mounted, note or delete the relevant data disk configurations in /etc/fstab.
- The creation process takes ten minutes or more, which depends on the data size of the instance. Please prepare in advance to avoid business impacts.
Directions

Create a custom image from an instance through the console

1. Log in to the CVM Console.
2. On the instance management page, select the instance for which images will be created, and click More > Instance Status > Shutdown.
3. After the instance is shut down, click More > Create Image.
4. In the pop-up "Create custom image" window, enter "Image Name" and "Description", and click Create Image.

You can click at the top right of the console to view the image creation progress.

5. After the image is created, click [Images] (https://console.cloud.tencent.com/cvm/image) on the left sidebar to enter the image management page.
6. To purchase a server with the same image as the previous one, select the image you created in the image list, and click Create Instance.

Create a custom image through API

You can use the CreateImage API to create a custom image. For more information, see CreateImage API.

Best Practices

Migrate data on a data disk

If you need to keep the data on the data disk of the original instance when starting a new instance, you can first take a snapshot of the data disk, and then use this data disk snapshot to create a new CBS data disk.

For more information, see Creating Cloud Disks Using Snapshots.
Copy Images

Last updated: 2020-04-27 14:46:36

Overview

Common Steps

**Cross-region replication** can help users deploy the same CVM across regions quickly. You can use this feature to copy images across regions, and then create a CVM by copying the images under the new region.

Notes

- The copied image must be a custom image. You must create a custom image first. For details, see [Create Custom Images](https://intl.cloud.tencent.com/document/product/213/4942).
- Cross-region replication allows you to copy images in or outside China. If you need to copy images from China to other countries or vice versa, please contact after-sale service.
- Cross-region replication of images is currently free of charge.
- Cross-region replication currently does not support custom images larger than 50 GB.
- Cross-region replication takes 10 to 30 minutes.

Methods

**Copy images via console**

1. Log in to the CVM Console.
2. In the left sidebar, click **Images** to enter the image management page.
3. Select the region where the original image you want to copy resides, and click the **Custom Image** tab, as shown below:
For example, select Guangzhou region.

4. Find the instance whose image needs to be copied, click More > Cross-region replication.

   For batch operations, select all the images you want to copy and click Cross-region replication.

5. In the pop-up "Cross-region copying" window, select the regions where the image will be copied to and click OK.

   After the copying is completed, the image list in the destination regions will display images with the same name and different IDs.

6. Switch to a destination region. Select the successfully copied image in the image list under the region, and click Create Instance to create the same CVM instance.

Copy images via API

You can also use SyncCvmImage API to copy images. For details, see SyncCvmImage API.
Share Custom Images

Scenario

**Shared image** means that you share with **others users** a **custom image** you have created. Users can easily get shared images from each other to obtain necessary components and add custom contents.

Tencent Cloud cannot guarantee the integrity or security of shared images. Please only use shared images from reliable sources.

Notes

- Each image can be shared with up to 50 users.
- The name and description of shared images cannot be changed. They are used to create CVM instances only.
- Images shared to other users do not occupy your own image quota.
- Images shared to other users can be deleted, but you must cancel image sharing first. For more information, see [Cancel Image Sharing](#). The obtained shared images can not be deleted.
- Images can be shared to the same region with other accounts. To share the image to a different region, you need to copy it to the other region before sharing.
- The obtained shared images cannot be shared with other users.

Directions

**Obtain the ID of the account with which you want to share the image**

Tencent Cloud shared image is identified by the unique ID of the account with which you want to share the image. You can inform the other account to obtain his/her ID as follows:

1. Log in to the **CVM Console**.
2. Click the account name in the upper right corner and select **Account Information**.
3. View and record the account ID in the “Account Information” management page.
4. Send his/her account ID to you.
Share images via console

1. Log in to the CVM Console.
2. In the left sidebar, click Images.
3. Click the Custom Image tab to enter the custom image management page.
4. Select the custom image you want to share in the custom image list and click Share on the right.
5. In the pop-up “Shared Image” window, enter the ID of the account you want to share the image with, and click Share.
6. Inform the other account to log in to the CVM Console, and select Images>Shared Image to view the image you have shared.
7. To share the image with multiple users, repeat the steps above.

Share images via API

You can use the ShareImage API to share images. For details, see Shared Images API.
Cancel Image Sharing

Last updated: 2020-04-20 18:33:17

Scenario

This document describes how to cancel custom image sharing. You can cancel your image sharing status with other users at any time. This does not affect instances created by other users using this shared image, but they can no longer see the image nor create new instances using this image.

Directions

**Cancel image sharing through the console**

1. Log in to the CVM Console.
2. On the left sidebar, click Images.
3. Select Custom Image tab to enter the custom image management page.
4. In the custom image list, select the custom images you want to cancel sharing and click More > Cancel Sharing.
5. On the new page, select the unique ID of the account from which you want to cancel the image sharing and click Cancel Sharing.
6. In the pop-up window, click OK to cancel image sharing.

**Cancel image sharing through API**

You can use the ModifyImageSharePermission API to cancel image sharing. For more information, see ModifyImageSharePermission.
Delete Custom Images

Last updated: 2020-04-20 18:33:17

Scenario

This document describes how to delete custom images.

Notes

Before deleting custom images, please note the following items:

- After a custom image is deleted, it can no longer be used to start a new CVM instance, but will not affect instances that have already been started. If you want to delete all instances started from this image, see Reclaiming Instances or Terminate Instances.
- A custom image that has been shared with others cannot be deleted. To delete it, you need to cancel image sharing first. For more information, see Cancel Image Sharing.
- You can only delete the custom image, not common image or shared image.

Directions

Delete images through the console

1. Log in to the CVM Console.
2. On the left sidebar, click Images and select the Custom Image tab to enter the custom image management page.
3. Select the method to delete custom images based on actual needs.
   - Deleting a single image: locate the custom image to be deleted in the image list and click More > Delete.
   - Deleting multiple images: select all custom images to be deleted in the image list and click Delete on the top.
4. In the pop-up window, click OK.
   - If the deletion fails, possible reasons will be prompted.

Delete images through API

You can use the DeleteImages API to delete images. For details, see Delete Images.
Import Images
Overview

In addition to create custom images, Tencent Cloud also allows you to import images. You can import an image file of a server system disk on the local machine or another platform into CVM custom images. After the image is imported, you can use it to create a CVM or reinstall the system of an existing CVM.

Prepare to import

You need to prepare in advance an image file that meets the import requirements.

- **Requirements for Linux images:**

<table>
<thead>
<tr>
<th>Image Attribute</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>CentOS, Ubuntu, Debian, CoreOS, OpenSUSE, and SUSE</td>
</tr>
<tr>
<td>Operating System</td>
<td>32-bit and 64-bit are supported</td>
</tr>
<tr>
<td>Image Format</td>
<td>RAW, VHD, QCOW2 and VMDK are supported</td>
</tr>
<tr>
<td>Image Format</td>
<td>Use `qemu-img info imageName</td>
</tr>
<tr>
<td>Image Size</td>
<td>Actual image size does not exceed 50 GB, use `qemu-img info imageName</td>
</tr>
<tr>
<td>Image Size</td>
<td>Image vsize does not exceed 500 GB, use `qemu-img info imageName</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>size information of the image that is converted into QCOW2 format will be used for check upon import</td>
</tr>
<tr>
<td>Network</td>
<td>Tencent Cloud provides the <code>eth0</code> network interface for the instance by default</td>
</tr>
<tr>
<td>Network</td>
<td>Tencent Cloud currently does not support IPV6</td>
</tr>
<tr>
<td>Network</td>
<td>Users can query the network configuration of the instance via metadata service. For more information, please see Instance Metadata</td>
</tr>
<tr>
<td>Drive</td>
<td>Image must have virtio driver of the virtualization platform KVM installed. For more information, please see Linux System Check virtio Driver</td>
</tr>
<tr>
<td>Drive</td>
<td>We recommend you install cloudinit for the image. For more information, please see Install Cloud-Init on Linux</td>
</tr>
</tbody>
</table>
If you cannot install the cloudinit, please see Forcibly Import Image to configure the instance

**Requirements for Windows images:**

<table>
<thead>
<tr>
<th>Image Attribute</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Both 32-bit and 64-bit are supported</td>
</tr>
</tbody>
</table>
| Image Format | RAW, VHD, QCOW2 and VMDK are supported  
| - | Use `qemu-img info imageName | grep 'file format'` to check the image format |
| File System Type | Only NTFS that uses MBR partition is supported  
| - | GPT partition is not supported  
| - | Logical Volume Manager (LVM) is not supported |
| Image Size | Actual image size does not exceed 50 GB, use `qemu-img info imageName | grep 'disk size'` to check the actual image size  
| - | Image vsize does not exceed 500 GB, use `qemu-img info imageName | grep 'virtual size'` to check the image vsize  
| Note: size information of the image that is converted into QCOW2 format will be used for check upon import |
| Network | Tencent Cloud provides the instance with local connection network interface by default  
| - | Tencent Cloud currently does not support IPV6  
| - | Users can query the network configuration of the instance via metadata service. For more information, please see Instance Metadata |
| Drive | Image must have Virtio driver of the virtualization platform KVM installed. Virtio driver is not installed in Windows system by default. Users can install Windows Virtio Drive and then export the local image |
| Others | Imported Windows system image does not provide Windows activation service |

**Steps to import images**

1. Log in to the CVM Console.
2. In the left sidebar, click **Images**.
3. Select **Custom Image** and click **Import Image**.
4. Following the instructions on the interface, you need to **enable Cloud Object Storage, create bucket**, then upload the image file to the bucket and **get Image file URL**.
5. Click **Next**.
6. Fill in the form according to the actual situation, and click **Import**.

Be sure to enter the correct COS file URL.

You will be notified whether the import is successful via **Internal Message**.

Import has failed

The operation to import images on the console may fail due to some reasons. If the import fails, troubleshoot as follows:

**Notes**

Before troubleshooting, make sure you have subscribed to product service notifications in the message subscription management page of **Message Center**. This ensures you can receive internal messages, SMS, and emails about the causes of the failure.

If you do not subscribe to product service notifications, you will not be able to receive messages about whether the import is successful.

**Troubleshooting the causes of failure**

For more information on error messages and descriptions, see **Error Code**.

**InvalidUrl: COS URL is invalid**

The InvalidUrl error indicates that a wrong COS URL is entered on the import page. The possible reasons are as follows:

- The image URL you have entered is not a **Tencent Cloud Object Storage** image URL.
- Access permission of the COS file is private-read, but the signature has expired.

COS file URL with the signature can only be accessed once.
• COS URL of another region has been entered.

The image import service accesses COS server in the local region through the private internet.

• The user’s image file has been deleted.
  After you receive the error message that the COS URL is invalid, troubleshoot based on the reasons above.

**InvalidFormatSize: format or size does not meet the requirements**

The InvalidFormatSize error indicates that the format or size of the image to be imported does not meet the following requirements of Tencent Cloud's image import feature:

- supported image file formats are `qcow2`, `vhd`, `vmdk`, and `raw`.
- The actual file size of the imported image cannot exceed 50 GB (based on the image file converted into qcow2 format).
- The size of the system disk to which the image is imported cannot exceed 500 GB.

After you receive an error message that the format or size does not meet the requirements:

- Covert the image file into an appropriate format according to Linux Image Creation, reduce the image content to meet the size requirements and then reimport it.
- You can also use the offline instance migration feature to migrate the instance. This feature supports migration of image files up to 500GB.

**VirtioNotInstall: Virtio driver is not installed**

The VirtioNotInstall error indicates that the image to be imported does not have Virtio driver installed. Tencent Cloud uses KVM virtualization technology and requires users to install Virtio driver on the image to be imported. Except for few customized ones, most Linux operating systems have Virtio driver installed. Windows operating systems require users to manually install Virtio driver:

- For Linux image import, see Linux System Check virtio Driver.
- For Windows image import, see Windows Image Creation to install Virtio driver.

**CloudInitNotInstalled: cloud-init program is not installed**

The CloudInitNotInstalled error indicates that the image to be imported does not have cloud-init program installed. Tencent Cloud uses the open-source cloud-init to initialize the CVM. Therefore,
failure to install the cloud-init program will cause the CVM to fail to initialize.

- For Linux image import, see Install Cloud-Init on Linux.
- For Windows image import, see Install Cloudbase-Init on Windows.
- After you have installed cloud-init/cloudbase-init, please replace the configuration file according to the document so the CVM can pull data from the correct data source at startup.

**PartitionNotPresent: Partition information loss**

The PartitionNotPresent error indicates that the imported image is incomplete. Please check if the boot partition was included when the image was created.

**RootPartitionNotFound: Root partition loss**

The RootPartitionNotFound error indicates that root partition is not detected in the imported image. Please check the image file and refer to the following possible reasons:

- Installation package file is uploaded.
- Data disk image is uploaded.
- Boot partition image is uploaded.
- Wrong file is uploaded.

**InternalError: Unknown error**

The InternalError error indicates that the image import service does not record the cause of the error. Please contact customer service and our technical personnel will help you resolve the issue as soon as possible.

**Error Codes**

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Reason</th>
<th>Recommended Processing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>InvalidUrl</td>
<td>COS link is invalid</td>
<td>Check if the COS URL is the same as the imported image URL</td>
</tr>
<tr>
<td>InvalidFormatSize</td>
<td>The format or size does not meet the requirements</td>
<td>The image needs to meet image format and image size requirements in Prepare to import</td>
</tr>
<tr>
<td>VirtioNotInstall</td>
<td>The virtio driver is not installed</td>
<td>Install the virtio driver in the image by referring to `Driver' section in Prepare to import</td>
</tr>
<tr>
<td>Error Code</td>
<td>Reason</td>
<td>Recommended Processing Method</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PartitionNotPresent</td>
<td>The partition information is not found</td>
<td>The image is corrupted possibly due to incorrect image creation method</td>
</tr>
<tr>
<td>CloudInitNotInstalled</td>
<td>cloud-init is not installed</td>
<td>Install cloud-init in the Linux image by referring to `Driver' section in <em>Prepare to import</em></td>
</tr>
<tr>
<td>RootPartitionNotFound</td>
<td>The root partition is not found</td>
<td>The image is corrupted possibly due to incorrect image creation method</td>
</tr>
<tr>
<td>InternalError</td>
<td>Other errors</td>
<td>Contact customer service</td>
</tr>
</tbody>
</table>
Introduction

To run in Tencent Cloud, a CVM must have a kernel supporting virtio drivers, including the block device driver `virtio_blk` and the NIC driver `virtio_net`. To ensure that a CVM created with a custom image can start up properly, please check whether your image support virtio drivers in the source server before importing the image. This document uses CentOS as an example to describe how to check if an image supports virtio drivers.

Directions

**Step 1: Checking whether the kernel supports virtio drivers**

Execute the following command to check whether the current kernel supports virtio drivers:

```
grep -i virtio /boot/config-$($uname -r)
```

A response similar to the following will be returned:

```
[root@VM_0_120_centos ~]# grep -i virtio /boot/config-$($uname -r)
CONFIG_VIRTIO_VSOCKETS=m
CONFIG_VIRTIO_VSOCKETS_COMMON=m
CONFIG_VIRTIO_BLK=m
CONFIG_SCSI_VIRTIO=m
CONFIG_VIRTIO_NET=m
CONFIG_VIRTIO_CONSOLE=m
CONFIG_HW_RANDOM_VIRTIO=m
CONFIG_DRM_VIRTIO_GPU=m
CONFIG_VIRTIO=m
# virtio drivers
CONFIG_VIRTIO_PCI=m
CONFIG_VIRTIO_PCI_LEGACY=y
CONFIG_VIRTIO_BALLOON=m
CONFIG_VIRTIO_INPUT=m
# CONFIG_VIRTIO_MMIO is not set
```

- If the value of `CONFIG_VIRTIO_BLK` and `CONFIG_VIRTIO_NET` is `m` in the response, please go to **Step 2**.
If the value of `CONFIG_VIRTIO_BLK` and `CONFIG_VIRTIO_NET` is `y` in the response, which means the OS contains the virtio drivers, you can import the custom image to Tencent Cloud. For details, see Import Images > Overview.

If you cannot find `CONFIG_VIRTIO_BLK` and `CONFIG_VIRTIO_NET` in the response, it means that images with the OS cannot be imported to Tencent Cloud. Please download and compile kernel.

**Step 2: Checking whether virtio drivers are in the temporary file system**

If the value of the parameters is `m` in Step 1, you need to check whether `initramfs` or `initrd` contains the virtio drivers. Please execute the corresponding command according to the operating system:

- For CentOS 6/CentOS 7/RedHat 6/RedHat 7:
  ```
  lsinitrd /boot/initramfs-$(uname -r).img | grep virtio
  ```

- For RedHat 5/CentOS 5:
  ```
  mkdir -p /tmp/initrd && cd /tmp/initrd
  zcat /boot/initrd-$(uname -r).img | cpio -idmv
  find . -name "virtio*"
  ```

- For Debian/Ubuntu:
  ```
  lsinitramfs /boot/initrd.img-$(uname -r) | grep virtio
  ```

If a result similar to the following is returned:

```
root@VM_0_120_centos:~# lsinitrd /boot/initramfs-$(uname -r).img | grep virtio
```

It means that `initramfs` contains the `virtio_blk` driver and `virtio.ko`, `virtio_pci.ko`, and `virtio_ring.ko` on which the driver depends. In this case, you can import the custom image to Tencent Cloud. For details, see Import Images > Overview.

If `initramfs` or `initrd` does not contain the virtio drivers, please go to Step 3.

**Step 3: Reconfigure the temporary file system**

If you find that `initramfs` or `initrd` does not contain the virtio drivers in [Step 2] (#CheckVirtioForInitramfs), you will need to reconfigure the temporary file system to make sure that
initramfs or initrd contains the virtio drivers. Please execute the corresponding command according to the operating system:

- For CentOS 6/CentOS 7/RedHat 6/RedHat 7:
  ```bash
cp /boot/initramfs-$(uname -r).img /boot/initramfs-$(uname -r).img.bak
mkinitrd -f --with=virtio_blk --with=virtio_pci /boot/initramfs-$(uname -r).img
```

- For RedHat 5/CentOS 5:
  ```bash
cp /boot/initrd-$(uname -r).img /boot/initrd-$(uname -r).img.bak
mkinitrd -f --with=virtio_blk --with=virtio_pci /boot/initrd-$(uname -r).img
```

- For Debian/Ubuntu:
  ```bash
echo -e "virtio_pci
virtio_blk" >> /etc/initramfs-tools/modules
update-initramfs -u
```

**Appendix**

**Downloading and compiling the kernel**

**Downloading the kernel installation package**

1. Execute the following command to install the components necessary for kernel compilation.
   ```bash
   yum install -y ncurses-devel gcc make wget
   ```

2. Execute the following command to view the current version of the kernel.
   ```bash
   uname -r
   ```
   A response similar to the following will be returned, indicating the current kernel version is 2.6.32-642.6.2.el6.x86_64.

   ```bash
   [root@VM_0_139_centos ~]# uname -r
   2.6.32-642.6.2.el6.x86_64
   ```

3. Go to [Linux Kernel Download Page](https://www.kernel.org) to download the source code of the corresponding kernel version.
   For example, for the 2.6.32-642.6.2.el6.x86_64 version, you should download `linux-2.6.32.tar.gz` at [https://mirrors.edge.kernel.org/pub/linux/kernel/v2.6/linux-2.6.32.tar.gz](https://mirrors.edge.kernel.org/pub/linux/kernel/v2.6/linux-2.6.32.tar.gz).

4. Execute the following command to switch directory.
cd /usr/src/

5. Execute the following command to download the installation package.

    wget https://mirrors.edge.kernel.org/pub/linux/kernel/v2.6/linux-2.6.32.tar.gz

6. Execute the following command to decompress the installation package.

    tar -xzf linux-2.6.32.tar.gz

7. Execute the following command to make connection.

    ln -s linux-2.6.32 linux

8. Execute the following command to switch directory.

    cd /usr/src/linux

**Compiling the kernel**

1. Execute the following commands to compile the kernel.

    make mrproper
    symvers_path=$(find /usr/src/ -name "Module.symvers")
    test -f $symvers_path && cp $symvers_path .
    cp /boot/config-$uname -r ./.config
    make menuconfig
Enter the “Linux Kernel vX.X.XX Configuration” interface as shown below:

If you are not taken to the “Linux Kernel vX.X.XX Configuration” interface, please go to [Step 18](# OptionalStep).

“Linux Kernel vX.X.XX Configuration” interface:

- Press “Tab” or “↑” “↓” to move the cursor.
- Press “Enter” to select or execute the item selected by the cursor.
- Press the space bar to select the item selected by the cursor. “*” means compiling to the kernel, and “M” means compiling to a module.

2. Press the “↓” key to move the cursor to “Virtualization” and press the space bar to select “Virtualization”.
3. Press “Enter” to enter the Virtualization details interface.
4. In the Virtualization details interface, check whether the Kernel-based Virtual Machine (KVM) support option is selected as shown below:
If it is not selected, press the space bar to select the “Kernel-based Virtual Machine (KVM) support” option.

5. Press "Esc" to return to the "Linux Kernel vX.X.XX Configuration" main interface.

6. Press the "↓" key to move the cursor to "Processor type and features" and press "Enter" to enter the Processor type and features details interface.

7. Press the "↓" key to move the cursor to "Paravirtualized guest support" and press "Enter" to enter the detailed interface of Paravirtualized guest support.

8. In the Paravirtualized guest support details interface, check whether "KVM paravirtualized clock" and "KVM Guest support" are selected as shown below:

If they are not selected, press the space bar to select the "KVM paravirtualized clock" and "KVM Guest support" options.

9. Press "Esc" to return to the "Linux Kernel vX.X.XX Configuration" main interface.
0. Press the "↓" key to move the cursor to "Device Drivers" and press "Enter" to enter the Device Drivers details interface.

1. Press the "↓" key to move the cursor to "Block devices" and press "Enter" to enter the Block devices details interface.

2. In the Block devices details interface, check whether "Virtio block driver (EXPERIMENTAL)" is selected as shown below:

   ![Block devices configuration](image)

   If it is not selected, press the space bar to select the "Virtio block driver (EXPERIMENTAL)" option.

3. Press "Esc" to return to the Device Drivers details interface.

4. Press the "↓" key to move the cursor to "Network device support" and press "Enter" to enter the Network device support details interface.

5. In the Network device support details interface, check whether "Virtio network driver (EXPERIMENTAL)" is selected as shown below:
If it is not selected, press the space bar to select the “Virtio network driver (EXPERIMENTAL)” option.

6. Press "Esc" to exit the kernel configuration interface, and select "YES" to save the .config file.

7. Take Step 1: Checking whether the kernel supports the virtio drivers to verify whether the virtio drivers have been configured correctly.

8. (Optional) Execute the following command to manually edit the .config file.

   This step is recommended if any of the following two is true:
   - The kernel still contains no configuration information related to the virtio drivers after you finish checking.
   - When compiling the kernel, you can not enter the kernel configuration interface or save the .config file.

   make oldconfig
   make prepare
   make scripts
   make
   make install

9. Execute the following commands to check the installation of the virtio drivers.

   find /lib/modules/"$(uname -r)"/ -name "virtio.*" | grep -E "virtio.*"
   grep -E "virtio.*" < /lib/modules/"$(uname -r)"/modules.builtin

   If any of the commands returns a list of files such as virtio_blk, virtio_pci, virtio_console, it indicates that you have installed the virtio drivers correctly.
Install Cloudbase-Init on Windows


Scenario

This document uses the Windows Server 2012 R2 64-bit operating system as an example to describe how to install cloudbase-init on Windows.

Software

The following table describes the software programs required for installing cloudbase-init.

<table>
<thead>
<tr>
<th>Software</th>
<th>How to Obtain It</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloudbase-init msi</td>
<td>Download the cloudbase-init installation package based on the used operating system.</td>
<td>It is used to install cloudbase-init.</td>
</tr>
<tr>
<td></td>
<td>• Stable version (recommended)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◦ Windows 64-bit operating system: <a href="#">Click here</a> to obtain the installation package.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◦ Windows 32-bit operating system: <a href="#">Click here</a> to obtain the installation package.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Beta version</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For details, visit the <a href="#">cloudbase-init official website</a>.</td>
<td></td>
</tr>
<tr>
<td>TencentCloudRun.ps1</td>
<td><a href="#">Click here</a> to obtain the installation package.</td>
<td>-</td>
</tr>
<tr>
<td>localscripts.py</td>
<td><a href="#">Click here</a> to obtain the installation package.</td>
<td>It is used to ensure that cloudbase-init starts properly.</td>
</tr>
</tbody>
</table>

Directions

Installing cloudbase-init
1. On the desktop, double-click the cloudbase-init installation package.

2. In the warning dialog box that appears, click Run to start the cloudbase-init setup wizard, as shown in the following figure.

3. Click Next.

4. Select I accept the terms in the License Agreement and click Next for the following two operations.

5. On the Configuration options page, set Serial port for logging to COM1 and click Next, as shown in the following figure.
6. Click **Install**.

7. After cloudbase-init is installed, click **Finish** to exit the cloudbase-init setup wizard, as shown in the following figure.

When exiting the cloudbase-init setup wizard, do not select any checkboxes nor run Sysprep.
Modifying the cloudbase-init configuration file

1. Open the `cloudbase-init.conf` configuration file.
   
   The `cloudbase-init.conf` configuration file is saved under `C:\Program Files\Cloudbase Solutions\Cloudbase-Init\conf` by default.

2. Replace the content of the `cloudbase-init.conf` configuration file with the following:

   ```
   [DEFAULT]
   username=Administrator
   groups=Administrators
   inject_user_password=true
   config_drive_raw_hhd=true
   config_drive_cdrom=true
   config_drive_vfat=true
   bsdtar_path=C:\Program Files\Cloudbase Solutions\Cloudbase-Init\bin\bsdtar.exe
   mtools_path=C:\Program Files\Cloudbase Solutions\Cloudbase-Init\bin\mtools.exe
   metadata_services=cloudbaseinit.metadata.services.configdrive,ConfigDriveService
   plugins=cloudbaseinit.plugins.windows,extendvolumes,ExtendVolumesPlugin,cloudbaseinit.plugins
   .common.networkconfig,NetworkConfigPlugin,cloudbaseinit.plugins.common.sethostname,SetHostNameP
   lugin,cloudbaseinit.plugins.common.setuserpassword,SetUserPasswordPlugin,cloudbaseinit.plugin
   s.common.localscripts.LocalScriptsPlugin,cloudbaseinit.plugins.common.userdata,UserDataPlugin
   verbose=true
   debug=true
   logdir=C:\Program Files\Cloudbase Solutions\Cloudbase-Init\log\n   ```
logfile=cloudbase-init.log
default_log_levels=comtypes=INFO,suds=INFO, iso8601=WARN, requests=WARN
logging_serial_port_settings=COM1, 115200, N, 8
mtu_use_dhcp_config=true
ntp_use_dhcp_config=true
first_logon_behaviour=no
netbios_host_name_compatibility=false
allow_reboot=false
activate_windows=true
kms_host="kms.tencentyun.com"
local_scripts_path=C:\Program Files\Cloudbase Solutions\Cloudbase-Init\LocalScripts\C:\powershell
PS C:\$Set-ExecutionPolicy Unrestricted

3. Copy the TencentCloudRun.ps1 script to C:\Program Files\Cloudbase Solutions\Cloudbase-Init\LocalScripts.

4. Replace localscripts.py in C:\Program Files\Cloudbase Solutions\Cloudbase-Init\Python\Lib\site-packages\cloudbaseinit\plugins\common with the localscripts.py file mentioned in Software.
Install Cloud-Init on Linux

Last updated: 2020-04-24 14:27:21

Scenario

Cloud-init allows you to customize configurations during the first initialization of an instance. If the imported image does not have the cloud-init service installed, instances booted through the image cannot be initialized properly. As a result, the image fails to be imported. This document describes how to install the cloud-init service.

You can install cloud-init in two ways:

- Manually downloading the cloud-init source package
- Using the cloud-init package from the software source

Notes

Before importing a Linux image, ensure that you have properly installed the cloud-init service in the image.

Prerequisites

A server with the cloud-init service installed can correctly access external networks.

Directions

Manually downloading the cloud-init source package

Downloading the cloud-init source package

- cloud-init-17.1 is the version best compatible with Tencent Cloud. It ensures that all configuration items of CVMs created through the image can be initialized properly. We recommend that you install cloud-init-17.1.tar.gz. You can also click here to download other versions. This document uses cloud-init-17.1 as an example.
- If the installation fails, manually download the green cloud-init package to install the service.
Run the following command to download the cloud-init source package:

```bash
wget https://launchpad.net/cloud-init/trunk/17.1/+download/cloud-init-17.1.tar.gz
```

### Installing cloud-init

1. Run the following command to decompress the cloud-init installation package:

```bash
If you are using the Ubuntu operating system, run this command with the root account.

tar -zxvf cloud-init-17.1.tar.gz
```

2. Run the following command to enter the decompressed cloud-init installation package directory, that is, the cloud-init-17.1 directory:

```bash
cd cloud-init-17.1
```

3. Install Python-pip according to the operating system version.
   - For CentOS 6 or 7, run the following command:

     ```bash
     yum install python-pip -y
     ```
   - For Ubuntu, run the following command:

     ```bash
     apt-get install python-pip -y
     ```

4. Run the following command to install dependencies:

```bash
Python 2.6 is not supported when cloud-init uses requests 2.20.0. If the Python interpreter installed in the image environment is Python 2.6 or earlier, run pip install 'requests<2.20.0' to install requests 2.20.0 or later before installing the cloud-init dependencies.

    pip install -r requirements.txt
```

5. Install the cloud-utils component according to the operating system version.
   - For CentOS 6, run the following command:
For CentOS 7, run the following command:
```
yum install cloud-utils-growpart -y
dracut -f
```

For Ubuntu, run the following command:
```
apt-get install cloud-guest-utils -y
```

6. Run the following commands to install cloud-init:
```
python setup.py build
python setup.py install --init-system systemd
```

--- Optional parameters of init-system include systemd, sysvinit, sysvinit_deb, sysvinit_freebsd, sysvinit_openrc, sysvinit_suse, and upstart [default: None]. Configure parameters based on the auto-start service management method of the operating system. If incorrect parameters are configured, the cloud-init service cannot automatically start upon system startup. This document uses the systemd self-start service management method as an example.

**Modifying the cloud-init configuration file**

1. Download cloud.cfg for your operating system.
   - Click here to download cloud.cfg for Ubuntu.
   - Click here to download cloud.cfg for CentOS.

2. Replace the content of `/etc/cloud/cloud.cfg` with that of the downloaded cloud.cfg file.

**Adding a syslog user**

Run the following command to add a syslog user:
```
useradd syslog
```

**Setting the cloud-init service to automatically start upon system startup**

- **If your operating system uses systemd to manage self-start services, run the following commands.**
  - Run the following command in Ubuntu or Debian:
ii. Run the following commands in all operating systems:

```
ln -s /usr/local/bin/cloud-init /usr/bin/cloud-init
```

```
systemctl enable cloud-init-local.service
systemctl start cloud-init-local.service
systemctl enable cloud-init.service
systemctl start cloud-init.service
systemctl enable cloud-config.service
systemctl start cloud-config.service
systemctl enable cloud-final.service
systemctl start cloud-final.service
systemctl status cloud-init-local.service
systemctl status cloud-init.service
systemctl status cloud-config.service
systemctl status cloud-final.service
systemctl status cloud-final.service
```

iii. Run the following command in CentOS or Redhat.

Replace the content of `/lib/systemd/system/cloud-init-local.service` with the following:

```
[Unit]
Description=Initial cloud-init job (pre-networking)
Wants=network-pre.target
After=sysadmin-remount-fs.service
Before=NetworkManager.service
Before=network-pre.target
Before=shutdown.target
Conflicts=shutdown.target
RequiresMountsFor=/var/lib/cloud

[Service]
Type=oneshot
ExecStart=/usr/bin/cloud-init init --local
ExecStart=/bin/touch /run/cloud-init/network-config-ready
RemainAfterExit=yes
TimeoutSec=0
# Output needs to appear in instance console output
StandardOutput=journal+console

[Install]
WantedBy=cloud-init.target
```

Replace the content of `/lib/systemd/system/cloud-init.service` with the following:

```
[Unit]
Description=Initial cloud-init job (metadata service crawler)
Wants=cloud-init-local.service
Wants=sshd-keygen.service
Wants=sshd.service
```
If your operating system uses sysvinit to manage self-start services, run the following commands:

```bash
chkconfig --add cloud-init-local
chkconfig --add cloud-init
chkconfig --add cloud-config
chkconfig --add cloud-final
chkconfig cloud-init-local on
chkconfig cloud-init on
chkconfig cloud-config on
chkconfig cloud-final on
```

Using the cloud-init package from the software source

Installing cloud-init

Run the following command to install cloud-init:

```bash
apt-get/yum install cloud-init
```

By default, the cloud-init version installed by running `apt-get` or `yum` is the default cloud-init version in the software source configured for the operating system. Some configuration items of instances created by using the image whose cloud-init is installed this way may not be
initialized as expected. Therefore, we recommend that you install the service by **manually downloading the cloud-init source package**.

### Modifying the cloud-init configuration file

1. Download cloud.cfg for your operating system.
   - [Click here](#) to download cloud.cfg for Ubuntu.
   - [Click here](#) to download cloud.cfg for CentOS.
2. Replace the content of `/etc/cloud/cloud.cfg` with that of the downloaded cloud.cfg file.

### Relevant Operations

Do not restart the server after performing the following operations. Otherwise, you need to perform them again.

1. Run the following commands to check whether the cloud-init configuration is successful:
   ```bash
   cloud-init init --local
   rm -rf /var/lib/cloud
   ```
2. Run the following command in Ubuntu or Debian:
   ```bash
   rm -rf /etc/network/interfaces.d/50-cloud-init.cfg
   ```
3. For Ubuntu or Debian, replace the content of `/etc/network/interfaces` with the following:
   ```bash
   # This file describes the network interfaces available on your system
   # and how to activate them. For more information, see interfaces(5).
   source /etc/network/interfaces.d/*
   ```

### Appendix

**Manually downloading the green cloud-init package**

If the cloud-init service fails to be installed by **manually downloading the cloud-init source package**, complete the following steps to install cloud-init:

1. [Click here](#) to obtain the green cloud-init package.
2. Run the following command to decompress the green cloud-init package:
3. Run the following command to enter the decompressed green cloud-init package directory, that is, the greeninit directory:

   ```bash
cd greeninit
   ```

4. Run the following command to install cloud-init:

   ```bash
   sh install.sh
   ```
Forcibly Import Image

Last updated: 2020-04-27 14:46:37

Scenario

If you cannot install cloudinit in your Linux image, use **Forced Image Import** to import the image. If you use this image for import, which does not have cloudinit installed, Tencent Cloud cannot initialize your CVM. In this case, you need to set up the script on your own to configure the CVM based on the configuration file provided by Tencent Cloud. This document describes how to configure the CVM if the image is forcibly imported.

Tencent Cloud provides the user with CDROM device containing the configuration information. The user needs to mount CDROM and read the information of `mount_point/qcloud_action/os.conf` for configuration. If other configuration data or UserData needs to be used, the user can directly read files under `mount_point/`.

os.conf Configuration File

The content of os.conf is as follows.

```plaintext
hostname=VM_10_20_xxxx
password=GRSgae1fw9frsG.rfrF
eth0_ip_addr=10.104.62.201
eth0_mac_addr=52:54:00:E1:96:EB
eth0_netmask=255.255.192.0
eth0_gateway=10.104.0.1
dns_nameserver="10.138.224.65 10.182.20.26 10.182.24.12"
```

The parameter names above are for reference, and the values are used as examples only.

The description of each parameter in the os.conf configuration file is as follows:

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>CVM name</td>
</tr>
<tr>
<td>password</td>
<td>Encrypted password</td>
</tr>
<tr>
<td>Parameter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>eth0_ip_addr</td>
<td>LAN IP of eth0</td>
</tr>
<tr>
<td>eth0_mac_addr</td>
<td>MAC address of eth0</td>
</tr>
<tr>
<td>eth0_netmask</td>
<td>Subnet mask of eth0</td>
</tr>
<tr>
<td>eth0_gateway</td>
<td>Gateway of eth0</td>
</tr>
<tr>
<td>dns_nameserver</td>
<td>DNS resolution server</td>
</tr>
</tbody>
</table>

**Limits**

- The image must meet the limits on Linux images as outlined in Import Images, except for cloudinit.
- The system partition for importing the image is not full.
- The imported image contains no vulnerability that can be exploited remotely.
- We recommend you change the password immediately after the instance is created successfully with the forcibly imported image.

**Notes**

Note the following when configuring script parsing:

- The script is executed automatically at startup. Please implement this requirement based on your operating system.
- Mount `/dev/cdrom` and read `os_action/os.conf` file under the mount point to obtain the configuration information.
- The password placed in CDROM by Tencent Cloud is encrypted. You can set new password with `chpasswd -e`.
  
  *Note that the encrypted password may contain special characters. We recommend you place it in a file and then set the password with `chpasswd -e < passwd_file`.*
- When you use the forcibly imported image to create an instance and then create an image, you need to ensure that the script will still be executed to ensure that the instance is configured correctly. You can also install cloudinit in this instance.

**Directions**
Tencent Cloud provides a script sample based on CentOS. You can refer to it to create script for your images. During the creation, note that:

- **The script must be properly placed in the system before image import.**
- The script is not applicable to all operating systems. You need to modify it according to your own operating systems.

1. Create an `os_config` script based on the following script sample.
   You can modify the script as needed.

```bash
#!/bin/bash
### BEGIN INIT INFO
# Provides: os-config
# Required-Start: $local_fs $network $named $remote_fs
# Required-Stop:
# Should-Stop:
# Default-Start: 2 3 4 5
# Default-Stop: 0 1 6
# Short-Description: config of os-init job
# Description: run the config phase without cloud-init
### END INIT INFO

# user settings

mount_path=$(mktemp -d /mnt/tmp.XXXX)
mount /dev/cdrom $mount_path
if [[ -f $mount_path/qcloud_action/os.conf ]]; then
  . $mount_path/qcloud_action/os.conf
fi

if [[ -n $password ]]; then
  passwd_file=$(mktemp /mnt/pass.XXXX)
  passwd_line=$(grep password $mount_path/qcloud_action/os.conf)
  echo root:$(grep password $mount_path/qcloud_action/os.conf) > $passwd_file
  fi
  return 0
else
  return 1
fi

cleanup() {
  umount /dev/cdrom
  if [[ -f $passwd_file ]]; then
    echo $passwd_file
    rm -f $passwd_file
  fi

  # remaining commands
}
```

©2013-2019 Tencent Cloud. All rights reserved.
if [[ -d $mount_path ]]; then
    echo $mount_path
    rm -rf $mount_path
fi
}
config_password() {
    if [[ -f $passwd_file ]]; then
        chpasswd -e < $passwd_file
    fi
}
config_hostname() {
    if [[ -n $hostname ]]; then
        sed -i "/^HOSTNAME=.*/d" /etc/sysconfig/network
        echo "HOSTNAME=$hostname" >> /etc/sysconfig/network
    fi
}
config_dns() {
    if [[ -n $dns_nameserver ]]; then
        dns_conf=/etc/resolv.conf
        sed -i '/^nameserver.*/d' $dns_conf
        for i in $dns_nameserver; do
            echo "nameserver $i" >> $dns_conf
        done
    fi
}
config_network() {
    /etc/init.d/network stop
    cat << EOF > /etc/sysconfig/network-scripts/ifcfg-eth0
    DEVICE=eth0
    IPADDR=$eth0_ip_addr
    NETMASK=$eth0_netmask
    HWADDR=$eth0_mac_addr
    ONBOOT=yes
    GATEWAY=$eth0_gateway
    BOOTPROTO=static
    EOF
    if [[ -n $hostname ]]; then
        sed -i "/^\$eth0_ip_addr.*/d" /etc/hosts
        echo "$\$eth0_ip_addr $hostname" >> /etc/hosts
    fi
    /etc/init.d/network start
    
    config_gateway() {
        sed -i "s/"GATEWAY=.*/GATEWAY=$eth0_gateway" /etc/sysconfig/network
    }
}
```bash
config_password
config_hostname
config_dns
config_network
cleanup
exit 0
else
echo "mount ${cdrom_path} failed"
exit 1
fi
}

RETVAL=0
case "$1" in
  start)
    start
    RETVAL=$?
  ;;
  *)
    echo "Usage: $0 {start}"
    RETVAL=3
  ;;
esac
exit $RETVAL
```

2. Place the `os_config` script in the `/etc/init.d/` directory and execute the following command.

```bash
chmod +x /etc/init.d/os_config
chkconfig --add os_config
```

3. Execute the following command to check whether `os_config` has been added to the startup service.

```bash
chkconfig --list
```

You must ensure that the script is correctly executed. If you fail to connect to the instance via SSH or network exception occurs after the image import, try to connect to the instance via the console to execute the script again. If such problems remain, contact the customer service.
Linux Image Creation

Scenario
This document guides you through the production of Linux Image.

Directions

Preparations
When making the system disk Image and Export, the following checks need to be carried out:

- If you are through the data disk Image Export, you can skip this operation.

Check OS partition and Launch method
1. Execute the following command to check that the OS partition is a GPT partition.

   ```bash
   sudo parted -l /dev/sda | grep 'Partition Table'
   ```

   - If the returned result is msdos, it is represented as a MBR partition, please perform the next step.
   - If the returned result is gpt, it is represented as GPT partition. GPT partition is not supported for service migration. Please Submit a ticket Feedback.

2. Execute the following command to check if the operating system is Launch in EFI mode.

   ```bash
   sudo ls /sys/firmware/efi
   ```

   - If you need to use the custom image feature, Submit a ticket .
   - If no, proceed to the next step.

Check the key files of the system
System key files to be checked include, but are not limited to, the following files:

Follow the standards of relevant distributions to ensure that the locations and permissions of the system-critical files are correct and the files can be read and written normally.
In the kernel parameter, uuid is recommended for mounting root. Other methods (such as root=/dev/sda) may cause the failure in starting the system.

- /etc/fstab: Do not mount other disks. After migration, the system may fail to start due to disk missing.
- /etc/shadow: It has normal permissions and can be read and written.

**Unmount software**

Unmount the drivers and software that produce conflicts (including VMware tools, Xen tools, Virtualbox GuestAdditions and other software that comes with underlying drivers).

**Check the virtio driver**

Check the virtio driver: Please see Check virtio Driver in Linux System .

**Installing cloud-init**

- For Linux, see Linux Image Production .

**Check other hardware-related configurations**

Changes to the hardware on the cloud include but not limited to:

- Replacing the graphics card with cirrus vga.
- Replacing the disk with virtio disk. Device name is vda, vdb, and so on.
- Replacing the ENI with virtio nic. By default, only eth0 is available.

**Find Partition and size**

Execute the following command to view the partition format of the current operating system and determine the partition and size to be copied.

```markdown
## mount

Take the returned result as an example:

```

```
As you can see, the root partition is in `/dev/sda1` Medium, `/boot` and `/home`. There are no separate partitions, sda1 contains boot partitions, missing mbr, we just need to copy the entire sda.

Export Image

According to the actual needs, choose different ways Export Image.

- Use the tool Export
- Use orders Export Image
Use the platform tool Export Image

For more information on how to use image export tools of VMWare vCenter Convert, Citrix XenConvert and other virtualization platforms, please see the relevant document of each platform. The image formats supported by Tencent Cloud Service Migration include qcow2, vhd, raw, and vmdk.

Use orders Export Image

Due to the use of commands, the risk of manual Export Image is relatively large (for example, it may cause metadata confusion of the file system when IO is busy, etc.). It is suggested that after Export and Image, Check Image Intact.

You can execute the following order Export Image:

Use qemu-img command

For example, execute the following command to set the /dev/sda Export to /mnt/sdb/test.qcow2.

```
sudo qemu-img convert -f raw -O qcow2 /dev/sda /mnt/sdb/test.qcow2
```

among, /mnt/sdb For mounted new disks or other network storage.
If you need to convert to another format, please modify -O. Gets or sets the parameter value of the
The parameter values that can be modified are as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qcow2</td>
<td>Qcow2 format</td>
</tr>
<tr>
<td>VPC</td>
<td>Vhd format</td>
</tr>
<tr>
<td>Vmdk</td>
<td>Vmdk format</td>
</tr>
<tr>
<td>Raw</td>
<td>No format</td>
</tr>
</tbody>
</table>

# Use dd command for example, execute the following command, Image in Export raw format.
Parameter `count` is the number of partitions to be copied, which can be found by `fdisk` command. If you need to copy it completely, the parameter `count` can be ignored. For example, execute the following command to check the number of partitions for `/ dev/ sda`. `Disk-lu / dev/ sda` A message similar to the one below is returned: `disk / dev/sda: 1495.0 GB, 1494996746240 bytes255 heads, 63 sectors/track, 181756 cylinders, total 2919915520 sectorsUnits = sectors of 1 * 512 = 512`
As you can see from the return result of `fdisk` command, the end position of sda1 is 41945087 * 512 bytes, and `count` can be set to 20481m.
> The image exported through the `dd` command is in raw format. It is recommended to [convert it to qcow2, vhd or other image format](#ImageFormatConversion).

### Image format conversion
- At present, service migration supports image formats of qcow2, vpc, vmdk, and raw. A compressed image format is recommended to shorten the transmission and migration.

Convert the image format using the `qemu-img` command:
> For example, execute the following command to convert the image in raw format to qcow2 format.

```
Sudo qemu-img convert-f raw -O qcow2 test.img test.qcow2
```

`-f` is the source image file format.
- `-O` For the destination mirror file format, please refer to the supported format[`-Parameter Value of O`](#-OParameterValue).

### Check the mirror image
> When you create an image directly without stopping the service or for other reasons, the image file system may be incorrect. Therefore, it is recommended that you check whether the image is correct after creating the image.

When the image format is consistent with the format supported by the current platform, you can directly turn on the image to check the file system. For example, Windows platform can directly attach vhd format image, Linux platform can use `qemu-nbd` to open qcow2 format image, and Xen platform can directly enable vhd file.

Take the Linux platform as an example:

```
Modprobe nbd
Qemu-nbd-c / dev/nbd0 xxxx.qcow2
Mount / dev/nbd0p1 / mnt
```
If the file system is corrupted when the first partition of the qcow2 image is exported, an error will occur when using the mount command. In addition, you can start the CVM to check whether the image file works before uploading the image.
Windows Image Creation

Last updated: 2019-11-22 11:08:12

1. Preparations

The following checks are required to export a system disk image, and can be ignored when you export a data disk image.

- Check the OS partition. Service Migration does not support GPT-style partition.
  
  How to check the partition:
  
  Open the **Control Panel** -> **Disk Management**, right-click the disk to select **Property**, and you can find the Partition style in the figure below.

If it reads GPT, the GPT-style partition is used.
• Check the startup mode. Service Migration does not support starting the system with EFI. If EFI exists in the path, then the current operating system starts in the EFI mode. Open the command prompt (CMD) as admin and execute the following command:

```bash
bcdedit /enum {current}
```

Example of execution result:

```plaintext
C:\WINDOWS\system32>bcdedit /enum {current}

Windows bootstrapper
-------------------
identifier {current}
device partition=C:
  path ¥WINDOWS¥system32¥winload.exe
description Windows 10
locale zh-CN
inherit {bootloadersettings}
recoverysequence {f9dbeba1-1935-11e8-88dd-ff37cca2625c}
displaymessageoverride Recovery
recoveryenabled Yes
flightsigning Yes
allowedinmemorysettings 0x15000075
osdevice partition=C:
systemroot ¥WINDOWS
resumeobject {1bcd0c6f-1935-11e8-8d3e-3464a915af28}
xn OptIn
bootmenupolicy Standard
```

• Check the network configuration. Service Migration does not support IPv6 nor multi-ENI. Services that rely on both IPv6 and multi-ENI cannot work normally.

• Unmount the drivers and software that produce conflicts (including VMware tools, Xen tools, Virtualbox GuestAdditions and other software that comes with underlying drivers).

• Check or install the virtio driver
  The virtio driver has been installed if it is found in the Control Panel -> Programs and Features:
Otherwise, you need to manually install the virtio driver:

- For the following system versions, download Tencent Cloud's customized virtio
  Microsoft Windows Server 2012 R2 (Standard Edition)
- For other system versions, download the virtio community version.

- Check the configurations of other hardware. Changes to the hardware on the cloud include but not limited to:
  - Replacing the graphics card with cirrus vga.
  - Replacing the disk with virtio disk.
  - Replacing the ENI with virtio nic. Local Area Connection is used by default.

2. Export the Image Using a Platform Tool

For more information on how to use image export tools of VMWare vCenter Convert, Citrix
XenConvert and other virtualization platforms, please see the relevant document of each platform.
The image formats supported by Tencent Cloud Service Migration include qcow2, vhd, raw, and vmdk.

3. Export the Image Using Disk2vhd

The Disk2vhd tool can be used to export the system if it is deployed on a physical machine or if you do not want to export it using a platform tool.

Download Disk2vhd

The interface after installation is shown as below:

![Disk2vhd Interface]

When using the tool, select the volume to be copied and the name of the file to be exported, and click Create to export vhd.

Note:

- The vss feature must be preset in Windows before Disk2vhd can run.
- Do not select "Use Vhdx". The system does not support vhdx images.
- "Use volume Shadow Copy" should be selected to ensure the data integrity.
4. Check the Image

As mentioned above, an error may be occurred with the image file system if it is created when the server is not shut down or due to other reasons. Therefore, you are recommended to check whether the created image is error-free.

When the image format is consistent with the format supported by the current platform, you can directly open the image to check the file system. For example, vhd images can be directly added to Windows platform, qcow2 images can be opened using qemu-nbd on Linux platform, and vhd images can be enabled directly on Xen platform. Take the Linux platform as an example:

```
modprobe nbd
qemu-nbd -c /dev/nbd0 xxxx.qcow2
mount /dev/nbd0p1 /mnt
```

If the file system is corrupted when the first partition of the qcow2 image is exported, an error will occur when using the mount command.

In addition, you can start the CVM to check whether the image file works before uploading the image.
Cross-region data migration moves the data on a CVM in an availability zone in one region to a destination CVM in an availability zone of another region. It can also mean the migration of data between CVMs in different availability zones within the same region.

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.

Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.
Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<table>
<thead>
<tr>
<th>Destination CVM</th>
<th>1. Storage: The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
</tr>
<tr>
<td></td>
<td>3. Bandwidth setting: We recommend that you increase bandwidth for faster migration. The traffic consumed during migration will be approximately equal to the data volume. Change your networking billing method in advance if needed.</td>
</tr>
<tr>
<td></td>
<td>4. Operating system: We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linux source server</th>
<th>1. Check for and install Virtio. For more information, see Checking Virtio Drivers in Linux.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Check whether rsync and grub2-install (or grub-install) are installed.</td>
</tr>
<tr>
<td></td>
<td>3. Check whether SELinux is enabled. Disable it if enabled.</td>
</tr>
<tr>
<td></td>
<td>4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. In this case, ensure that the current system time is correct.</td>
</tr>
</tbody>
</table>

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and force migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
2. Configure the user.json file.
   The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
   - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see Access Keys.
   - The region and instance ID of the target CVM.
   - (Optional) The data disk configuration of the source server.

3. Configure the client.json file.
   The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the Client.Net.Mode parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.
   Edit the rsync_excludes_linux.txt file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.
   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.
   ```
   sudo ./go2tencentcloud_x64
   ```
Migrating Tencent Cloud CVM Data Across Accounts

The online migration tool supports migrating Tencent Cloud CVM data across accounts. Cross-account data migration moves data between CVMs under two different accounts.

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs. Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<p>| Destination | 1. Storage: The cloud disks of the destination CVM, including system disks and |</p>
<table>
<thead>
<tr>
<th>CVM</th>
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</tr>
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<td></td>
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- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and force migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source sever and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
   - Skip this step if you are using the default mode.
2. Configure the user.json file.
   - The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
- The access key pair of your account API, that is, SecretId and SecretKey. For more information, see [Access Keys](#).
- The region where the destination CVM resides.
- The instance ID of the destination CVM.
- (Optional) The data disk configuration of the source server.

3. Configure the client.json file.

The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.

Edit the `rsync_excludes_linux.txt` file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.

Take cross-account migration in private network mode: Scenario 1 as an example:

i. On a CVM that has access to the public network, execute the following command to run the tool for migration stage 1.

```bash
sudo ./go2tencentcloud_x64
```

If the `Stage 1 is finished and please run next stage at source machine` prompt appears, stage 1 is completed.

```
[root@M_0_32_centos go2tencentcloud]# sudo ./go2tencentcloud_x64
[2019-10-03 20:29:46] Start go2tencentcloud 1.3.0
[2019-10-03 20:29:48] [1/3] Initialize instance
[2019-10-03 20:29:50] Restart remote instance...
Used: 00:01:13 | Max Timeout: 00:10:00
[2019-10-03 20:31:04] Start preparing remote server...
[2019-10-03 20:31:05] Start initializing remote server...
Used: 00:00:11 | Max Timeout: 00:03:00
[2019-10-03 20:31:17] Stage 1 is finished and please run next stage at source machine.
```

ii. After the previous step (stage 1) is completed, copy the entire tool directory in stage 1 to the source server to be migrated, and then run the tool for migration stage 2. Execute the following command to run the tool for migration stage 2.

```bash
sudo ./go2tencentcloud_x64
```

If the `Stage 2 is finished and please run next stage at gateway machine` prompt appears, stage 2 is completed.
iii. After the previous step (stage 2) is completed, copy the entire tool directory in stage 2 to the source server in stage 1, and then run the tool for migration stage 3.

Execute the following command to run the tool for migration stage 3.

```bash
sudo ./go2tencentcloud_x64
```

If the **Migrate successfully** prompt appears, the entire migration task has been completed successfully.

```
[root@VM_8_7_centos go2tencentcloud]# sudo ./go2tencentcloud_x64
```

```bash
[root@VM_8_12_centos go2tencentcloud]# sudo ./go2tencentcloud_x64
```
Migration Tutorial for Different Source Environments

Migrating AWS EC2 Data to Tencent Cloud

Last updated : 2020-02-11 14:12:46

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.
Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC peering connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:
**Destination CVM**

1. **Storage:** The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.
2. **Security group:** Ports 443 and 80 must be open in a security group.
3. **Bandwidth setting:** We recommend that you increase bandwidth for faster migration. The traffic consumed during migration will be approximately equal to the data volume. Change your networking billing method in advance if needed.
4. **Operating system:** We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.

**Linux source server**

1. Check for and install Virtio. For more information, see [Checking Virtio Drivers in Linux](#).
2. Check whether rsync and grub2-install (or grub-install) are installed.
3. Check whether SELinux is enabled. Disable it if enabled.
4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. Please ensure that the current system time is correct.
5. Check the login method of the source server. If your AWS source server uses SSH key pair authentication, switch it to password login. For more information, see [Enabling password login for AWS EC2 instances](#).

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and enforce migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

## Starting Migration

1. **(Optional) Establish a connection between the source server and the destination CVM.**
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through [VPC Peering Connection](#), [VPN Connection](#), [Cloud Connect Network](#), or [Direct Connect](#).
   - Skip this step if you are using the default mode.
2. Configure the user.json file.
   The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
   - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see Access Keys.
   - The region where the destination CVM resides.
   - The instance ID of the destination CVM.
   - (Optional) The data disk configuration of the source server.

3. Configure the client.json file.
   The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the Client.Net.Mode parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.
   Edit the rsync_excludes_linux.txt file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.
   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

   ```
   sudo ./go2tencentcloud_x64
   ```

   Wait for the migration process to complete.

   If the migration is successful, the following console output appears:
ubuntui@ip-172-31-46-19:~/go2tencentcloud$ sudo ./go2tencentcloud_x64

[2019-10-02 13:29:43] Start go2tencentcloud 1.3.0
[2019-10-02 13:29:47] Check environment...
[2019-10-02 13:29:49] Restart remote instance...
 Used: 00:04:52 | Max Timeout: 00:10:00
[2019-10-02 13:34:43] Start preparing remote server...
[2019-10-02 13:34:43] Start initializing remote server...
 Used: 00:00:20 | Max Timeout: 00:03:00
[2019-10-02 13:35:04] [2/3] Synchronize files
[2019-10-02 13:35:04] Transmitting files...
[2019-10-02 13:37:06] Reconfigure remote instance...
 Used: 00:00:07 | Max Timeout: 00:05:00
Migrating Alibaba Cloud ECS Data to Tencent Cloud

Last updated : 2020-02-11 14:32:45

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.

Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<table>
<thead>
<tr>
<th>Destination CVM</th>
<th>1. Storage: The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
</tr>
</tbody>
</table>
3. Bandwidth setting: We recommend that you increase bandwidth for faster migration. The traffic consumed during migration will be approximately equal to the data volume. Change your networking billing method in advance if needed.

4. Operating system: We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.

| Linux source server | 1. Check for and install Virtio. For more information, see [Checking Virtio Drivers in Linux](#).  
2. Check whether rsync and grub2-install (or grub-install) are installed.  
3. Check whether SELinux is enabled. Disable it if enabled.  
4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. In this case, ensure that the current system time is correct. |

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and force migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

---

## Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
   - Skip this step if you are using the default mode.

2. Configure the user.json file.
   The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
   - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see [Access Keys](#).
   - The region where the destination CVM resides.
3. Configure the client.json file.

The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.

   Edit the `rsync_excludes_linux.txt` file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.

   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

   ```
   sudo ./go2tencentcloud_x64
   ```

   If the migration is successful, the following console output appears:

   ```
   [root@i2zw94ahxe0bj0vnvm1fzcZ go2tencentcloud]# sudo ./go2tencentcloud_x64
   [2019-10-02 10:41:58] Start go2tencentcloud 1.3.0
   [2019-10-02 10:42:17] Check environment...
   [2019-10-02 10:42:21] [1/3] Initialize instance
   [2019-10-02 10:42:21] Restart remote instance...
   Used: 00:01:28 | Max Timeout: 00:10:00
   [2019-10-02 10:43:42] Start preparing remote server...
   [2019-10-02 10:43:42] Start initializing remote server...
   Used: 00:00:11 | Max Timeout: 00:03:00
   [2019-10-02 10:43:54] [2/3] Synchronize files
   [2019-10-02 10:43:54] Transmitting files...
   [2019-10-02 10:47:13] Reconfigure remote instance...
   Used: 00:00:07 | Max Timeout: 00:05:00
   ```
Migrating Huawei Cloud ECS Data to Tencent Cloud

Last updated: 2020-02-11 14:15:02

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.

Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<table>
<thead>
<tr>
<th>Destination CVM</th>
<th>1. Storage: The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
</tr>
</tbody>
</table>
3. Bandwidth setting: We recommend that you increase bandwidth for faster migration. The traffic consumed during migration will be approximately equal to the data volume. Change your networking billing method in advance if needed.

4. Operating system: We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.

Linux source server

1. Check for and install Virtio. For more information, see Checking Virtio Drivers in Linux.
2. Check whether rsync and grub2-install (or grub-install) are installed.
3. Check whether SELinux is enabled. Disable SELinux if it is enabled.
4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. In this case, ensure that the current system time is correct.
5. Run the `cloud-init --version` command to check the version information of cloud-init installed on the source server.
   - We recommend that you uninstall or remove the cloud-init whose version is earlier than 17.1.
   - Skip this step if the source server does not have cloud-init installed.

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and enforce migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
   - Skip this step if you are using the default mode.
2. Configure the user.json file.
   - The user.json file is for configuring the source server and the destination CVM. It contains the
following configuration items:
- The access key pair of your account API, that is, SecretId and SecretKey. For more information, see Access Keys.
- The region where the destination CVM resides.
- The instance ID of the destination CVM.
- (Optional) The data disk configuration of the source server.

3. Configure the client.json file.
   The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the Client.Net.Mode parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.
   Edit the rsync_excludes_linux.txt file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.
   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

```
sudo ./go2tencentcloud_x64
```

Wait for the migration process to complete.
If the migration is successful, the following console output appears:
[root@kaijianyao-10-02 go2tencentcloud]# sudo ./go2tencentcloud_x64
[2019-10-02 22:13:34] Check environment...
[2019-10-02 22:13:38] [1/3] Initialize instance
[2019-10-02 22:13:38] Restart remote instance...
Used: 00:01:24 | Max Timeout: 00:10:00
[2019-10-02 22:15:03] Start preparing remote server...
[2019-10-02 22:15:03] Start initializing remote server...
Used: 00:00:11 | Max Timeout: 00:03:00
[2019-10-02 22:15:15] Transmitting files...
[########################################] 100% | 00:03:04
[2019-10-02 22:18:19] Reconfigure remote instance...
Used: 00:00:07 | Max Timeout: 00:05:00
Migrating UCloud UHost Data to Tencent Cloud

Last updated : 2020-02-11 14:13:40

Obtaining the migration Tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.
Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<table>
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<tr>
<th>Destination CVM</th>
<th>1. Storage: The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
</tr>
</tbody>
</table>
3. Bandwidth setting: We recommend that you increase bandwidth for faster migration. The traffic consumed during migration will be approximately equal to the data volume. Change your networking billing method in advance if needed.

4. Operating system: We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.

| Linux source server | 1. Check for and install Virtio. For more information, see Checking Virtio Drivers in Linux.  
| | 2. Check whether rsync and grub2-install (or grub-install) are installed.  
| | 3. Check whether SELinux is enabled. Disable it if enabled.  
| | 4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. In this case, ensure that the current system time is correct.  

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and enforce migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

### Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
   - Skip this step if you are using the default mode.

2. Configure the user.json file.

   The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
   - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see Access Keys.
   - The region where the destination CVM resides.
3. Configure the client.json file.

Configure the client.json file for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.

Edit the `rsync_excludes_linux.txt` file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.

For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

```
sudo ./go2tencentcloud_x64
```

Wait for the migration process to complete.

If the migration is successful, the following console output appears:

```
[root@10-29-133-82 go2tencentcloud]# sudo ./go2tencentcloud_x64
[2019-10-03 05:30:21] Start go2tencentcloud 1.3.0
[2019-10-03 05:30:21] Load user.json successfully.
[2019-10-03 05:30:22] Check environment...
[2019-10-03 05:30:28] Check environment successfully.
[2019-10-03 05:30:28] [1/3] Initialize instance
[2019-10-03 05:30:30] Restart remote instance...
Used: 00:01:23 | Max Timeout: 00:10:00
[2019-10-03 05:31:54] Restart remote instance successfully.
[2019-10-03 05:31:54] Start preparing remote server...
[2019-10-03 05:31:54] Start initializing remote server...
Used: 00:00:23 | Max Timeout: 00:03:00
[2019-10-03 05:32:18] [2/3] Synchronize files
[2019-10-03 05:32:18] Transmitting files...
[2019-10-03 05:34:31] Reconfigure remote instance...
Used: 00:00:42 | Max Timeout: 00:05:00
```
Migrating Baidu Cloud BCC Data to Tencent Cloud

Last updated: 2020-02-11 14:33:14

Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.

Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

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©2013-2019 Tencent Cloud. All rights reserved.
### Starting Migration

1. **(Optional) Establish a connection between the source server and the destination CVM.**
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect.
   - Skip this step if you are using the default mode.

2. **Configure the user.json file.**
   - The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
     - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see Access Keys.
     - The region where the destination CVM resides.
- The instance ID of the destination CVM.
- (Optional) The data disk configuration of the source server.

3. Configure the client.json file.
   The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.
   Edit the `rsync_excludes_linux.txt` file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.
   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

   ```bash
   sudo ./go2tencentcloud_x64
   ```
   Wait for the migration process to complete.
   If the migration is successful, the following console output appears:
Migrating VMWare Virtual Machine Data to Tencent Cloud

Obtaining the migration Tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs.

Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

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<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
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<td>3. Bandwidth setting:</td>
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</tr>
<tr>
<td>4. Operating system:</td>
<td>We recommend that the destination CVM and the source server use the same operating system. Different operating systems will result in inconsistency between the image that will be created later and the actual operating system. For example, when migrating a source server with the CentOS 7 system installed, choose a CVM with the CentOS 7 system installed as the migration destination.</td>
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| Linux source server | 1. Check for and install Virtio. For more information, see [Checking Virtio Drivers in Linux](#). |
|                     | 2. Check whether rsync and grub2-install (or grub-install) are installed. |
|                     | 3. Check whether SELinux is enabled. Disable it if enabled. |
|                     | 4. When a migration request is sent to Tencent Cloud API, the API uses the current UNIX time to check against the generated token. In this case, ensure that the current system time is correct. |

- You can use tool commands to automate the checking of source servers, for example, `sudo ./go2tencentcloud_x64 --check`.
- By default, the go2tencentcloud migration tool automatically performs checking when it starts to run. If you want to skip the check and enforce migration, configure the value of the `Client.Extra.IgnoreCheck` field in the client.json file to `true`.

### Starting Migration

1. **(Optional)** Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through [VPC Peering Connection](#), [VPN Connection](#), [Cloud Connect Network](#), or [Direct Connect](#).
   - Skip this step if you are using the default mode.

2. Configure the user.json file.

   The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
   - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see [Access Keys](#).
   - The region where the destination CVM resides.
The instance ID of the destination CVM.

(Optional) The data disk configuration of the source server.

3. Configure the client.json file.

The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. (Optional) Remove files and directories on the server that do not need to be migrated.

Edit the rsync_excludes_linux.txt file on the Linux source server to remove files and directories that do not need to be migrated.

5. Run the tool.

For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

```
sudo ./go2tencentcloud_x64
```

Wait for the migration process to complete.

If the migration is successful, the following console output appears:

```
[root@10-29-133-82 go2tencentcloud]# sudo ./go2tencentcloud_x64
[2019-10-03 05:30:21] Start go2tencentcloud 1.3.0
[2019-10-03 05:30:21] Load user.json successfully.
[2019-10-03 05:30:22] Check environment...
[2019-10-03 05:30:28] Check environment successfully.
[2019-10-03 05:30:28] [1/3] Initialize instance
[2019-10-03 05:30:30] Restart remote instance...
Used: 00:01:23 | Max Timeout: 00:10:00
[2019-10-03 05:31:54] Restart remote instance successfully.
[2019-10-03 05:31:54] Start preparing remote server...
[2019-10-03 05:31:54] Start initializing remote server...
Used: 00:00:23 | Max Timeout: 00:03:00
[2019-10-03 05:32:18] [2/3] Synchronize files
[2019-10-03 05:32:18] Transmitting files...
[2019-10-03 05:34:31] Reconfigure remote instance...
Used: 00:00:42 | Max Timeout: 00:05:00
```
Obtaining the migration tool

Click here to obtain the compressed migration tool package.

Choosing a migration mode based on the network environment

Choose the appropriate migration mode according to the network environments of your source servers and destination CVMs. Currently, the migration tool supports the default mode and the private network mode. The private network mode applies to three scenarios. Each migration mode or scenario has different network requirements for source servers and destination CVMs. If both source servers and destination CVMs can access the public network, you can use the default mode for migration. If source servers or destination CVMs cannot directly access the public network, you need to establish connections through VPC Peering Connection, VPN Connection, Cloud Connect Network, or Direct Connect before using the private network mode for migration.

Data Backup

You can back up your data by creating snapshots.

Checking before migrating

Before migrating, check the following items for source servers and destination CVMs respectively:

<table>
<thead>
<tr>
<th>Destination CVM</th>
<th>1. Storage: The cloud disks of the destination CVM, including system disks and data disks. Verify that they have sufficient storage to store the data from the source server.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Security group: Ports 443 and 80 must be open in a security group.</td>
</tr>
</tbody>
</table>
### Starting Migration

1. (Optional) Establish a connection between the source server and the destination CVM.
   - If you are using the private network mode, establish a connection between the source server and the destination CVM through [VPC Peering Connection](#), [VPN Connection](#), [Cloud Connect Network](#), or [Direct Connect](#).
   - Skip this step if you are using the default mode.
2. Configure the user.json file.
   - The user.json file is for configuring the source server and the destination CVM. It contains the following configuration items:
     - The access key pair of your account API, that is, SecretId and SecretKey. For more information, see [Access Keys](#).
     - The region where the destination CVM resides.
- The instance ID of the destination CVM.
- (Optional) The data disk configuration of the source server.

3. **Configure the client.json file.**
   
   The client.json file is for configuring the migration mode and other migration configuration items. You need to configure the `Client.Net.Mode` parameter in the client.json file despite migration modes or scenarios.

4. **(Optional) Remove files and directories on the server that do not need to be migrated.**
   
   Edit the rsync_excludes_linux.txt file on the Linux source server to remove files and directories that do not need to be migrated.

5. **Run the tool.**
   
   For example, on a 64-bit Linux source server, run the following command with root permissions to run the tool.

   ```bash
   sudo ./go2tencentcloud_x64
   ```

   Wait for the migration process to complete.

   If the migration is successful, the following console output appears:

   ![Console output](image-url)
Offline Migration

Last updated: 2020-04-24 15:51:46

Operation Scenario

Service Migration is a platform developed by Tencent Cloud to help enterprise users move to the cloud effortlessly. With Service Migration, you can migrate operation systems, apps, and app data from source servers to Cloud Virtual Machine (CVM) or Cloud Block Storage (CBS), meeting your business needs for migrating to cloud, migrating across cloud platforms, accounts, and regions, or deploying hybrid clouds.

Currently, service migration includes offline migration and online migration. Offline migration supports the following cases:

- **Offline instance migration**, which allows you to migrate the system disk image to the specific CVM.
- **Offline data migration**, which allows you to migrate the data disk image to the specific CBS disk.

Prerequisites

As offline migration requires the support of Cloud Object Storage (COS), ensure that your region is supported by COS.

For information on regions supported by COS, see [Regions and Access Domain Names](#).

Preparations

- At present, service migration supports image formats of qcow2, vhd, vmdk, and raw. A compressed image format is recommended to accelerate the transmission and migration.
- The COS region to which the image is uploaded must be the same as that where the destination CVM instance is located.
- For offline migration, the size of the uploaded image file cannot exceed the capacity of the destination disk. For example, if the image file size is 50 GB, the size of the destination system disk must be at least 50 GB.
- Offline migration does not support migrating snapshots with file names in a format similar to 
  `-00000*.vmdk`.


Create an image for the server to be migrated as instructed in the image creation document.
- For Windows, see Windows Image Creation.
- For Linux, see Linux Image Creation.

Upload the created image file to COS.
- As the image file is normally large in size, uploading it to a browser is prone to interruption. Therefore, we recommend that you use the COSCMD tool to upload the image. For more information, see COSCMD.
- If the image that you export from another cloud platform is a compressed package (such as a .tar.gz file), you can directly upload it to COS without decompressing and proceed to migrate.

Obtain the COS address of the uploaded image.
In the COS console, find the image file that you just uploaded and view its information to obtain the file link.

Prepare the destination CVM instance or CBS disk.
Click here to purchase a CVM >>.
Click here to see purchase instructions for cloud disks>>.

Directions

Offline instance migration
1. Log in to the CVM console, and click Service Migration in the left sidebar.
2. Click Create and select Instance Migration.
3. Prepare for instance migration, confirm that everything is correct, and click Next.
4. Select the region, complete migration configuration information such as the task name, COS link, and destination CVM instance. Then, click Finish to create the migration task.
   Return to the offline data migration management page to check the progress of the migration task.

   - The COS file must be configured with the public read and private write permission in advance.
   - The system disk capacity of the destination instance cannot be less than the uploaded image file size. Otherwise, the task will fail.

Offline data migration
1. Log in to the CVM console, and click Service Migration in the left sidebar.
2. Click Create and select Data Migration.
3. Prepare for data migration, confirm that everything is correct, and click **Next**.
4. Select the region, complete migration configuration information such as the task name, COS link, and destination CBS disk. Then, click **Finish** to create the migration task.

```
The destination CBS disk capacity cannot be less than the uploaded image file size. Otherwise, the task will fail.
```

**FAQs**

For more information, see [Service Migration FAQs](#).
Contact Us

Last updated: 2020-03-06 10:50:14

If you encounter any issue during service migration, or have any feedback or suggestions, do not hesitate to contact us.

Submitting a Ticket

If you encounter any Ops or technical problems when using our product, you can log in to the Tencent Cloud Console and follow the on-screen prompts to submit a ticket. We will get back to you as soon as possible.

Ticket links:

- Submitting a ticket: Submit a ticket
- Querying ticket status: Ticket list
Network

ENI

Last updated: 2020-03-06 10:50:15

To configure ENIs for your CVM, following these instructions:

1. Create an ENI.
   - View the ENI you just created.
2. Bind the ENI to your CVM and configure it.
3. Configure the CVM and VPC route table.
4. Assign a private IP.
   i. Log in to Virtual Private Cloud Console.
   ii. Click ENI under IP and ENI in the left sidebar. The ENI page appears.
   iii. Click the ID/Name of an ENI to see its details.
   iv. Click IP Management to go to the details page.
   v. Click Assign private IP to assign a private IP to the ENI. If you do this manual, pick a usable private IP. Click OK.
5. Manage the ENI.
   - Releasing private IPs
   - Unbinding CVMs
   - Deleting ENIs
   - Binding EIPs
   - Unbinding EIPs
   - Modifying primary private IP
   - Changing the subnet of an ENI
Configuring a Public Gateway

Last updated: 2020-03-06 10:50:15

As of December 6, 2019, Tencent Cloud no longer supports Public Network Gateway configuration when purchasing a CVM. If you need to configure a gateway, following these instructions.

Scenario

If some of your CVMs in Tencent Cloud VPC do not have common public IP addresses but need to access the Internet, you can use a CVM with a public IP (common or elastic public IP) as the public gateway to enable them to access the Internet. The public gateway CVM translates the source IP of outbound traffic. When any other CVMs access the Internet through the public gateway CVM, the public gateway CVM translates their IPs to the public IP of the public gateway CVM, as shown in the figure below.

Prerequisites

- Log in to the CVM Console.
- The public gateway CVM and the CVMs that need to access the Internet through the public gateway CVM are located in different subnets because the public gateway CVM can only forward routing requests from other subnets.
- The public gateway CVM must be a Linux CVM. A Windows CVM cannot serve as a public gateway.
Directions

**Step 1: Bind an elastic public IP (optional)**

If the CVM that serves as the public gateway already has a public IP address, skip this step.

1. In the navigation panel to the left, click **EIP** to go to the EIP management page.
2. Find the target elastic public IP and select **More > Bind** in the **Operation** column to bring up the **Bind resources** window.

3. Select a CVM instance to serve as the public gateway and bind it to the elastic public IP.

**Step 2: Configure a routing table for the subnet of the gateway**
The gateway subnet and other subnets cannot use the same route table. A separate route table must be created for the gateway subnet.

1. Create a custom route table
2. Associate the route table with the subnet where the public gateway CVM is located as prompted.

### Step 3: Configure a route table for the other subnets

This route table directs all traffic from the CVMs without a public IP to the gateway so they can access public networks as well.

In the route table for the common subnet, add the following routing policy:

- Destination: public IP to be accessed.
- Next-hop type: CVM.
• Next hop: private IP of the CVM instance to which the elastic public IP is bound in Step 1.

### Step 4: Configure the public gateway

1. Log in to the public gateway CVM, enable network forwarding and NAT proxy, and optimize related parameters.

   i. Run the following command to create a file named `vpcGateway.sh` in `/usr/local/sbin`.

   ```bash
   vim /usr/local/sbin/vpcGateway.sh
   ```

   ii. Press `i` to enter edit mode and add the following code in the script:

   ```bash
   #!/bin/bash
   echo "----------------------------------------------------"
   echo "(1)ip_forward config......"
   file="/etc/sysctl.conf"
   grep -i "^net.ipv4.ip_forward.*" $file &> /dev/null & & sed -i '
   s/net\[4\],ip_forward,/net\[4\],ip_forward = 1/'
   ' $file ||
   echo "net.ipv4.ip_forward = 1"
   >> $file
   echo 1 > /proc/sys/net/ipv4/ip_forward
   [ `cat /proc/sys/net/ipv4/ip_forward` -eq 1 ] & & echo "-->ip_forward:Success" ||
   echo "-->ip_forward:Fail"
   echo "(2)Iptables set......"
   iptables -t nat -A POSTROUTING -j MASQUERADE & & echo "-->nat:Success" ||
   echo "-->nat:Fail"
   iptables -t mangle -A POSTROUTING -p tcp -j TCPOPTSTRIP --strip-options timestamp & &
   echo "-->mangle:Success" || echo "-->mangle:Fail"
   echo "(3)nf_conntrack config......"
   ```
### 3. Modify kernel parameters

iii. Press **Esc** to exit edit mode and enter **:wq** to save the file and go back. Then, run the following commands:

```bash
chmod +x /usr/local/sbin/vpcGateway.sh
echo "/usr/local/sbin/vpcGateway.sh >>/tmp/vpcGateway.log 2>&1" >> /etc/rc.local
```

### 4. Set the RPS of the public gateway.

2. Set the RPS of the public gateway.

i. Run the following command to create a file named *setrps.sh* in **usr/local/sbin**.

```bash
vim /usr/local/sbin/set_rps.sh
```

ii. Press **i** to enter edit mode and add the following code in the script:

```bash
#!/bin/bash
echo "--------------------------------------------"
* date
mask=0
i=0
total_nic_queues=0

get_all_mask() {
    local cpu_nums=$1
    if [ $cpu_nums -gt 32 ]; then
        mask_tail=""
        mask_low32="ffffffff"
        idx=$(($cpu_nums / 32))
        cpu_reset=$(($cpu_nums - idx * 32))
    fi
```
if [ $cpu_reset -eq 0 ]; then
    mask=$mask_low32
    for ((i = 2; i <= idx; i++)); do
        mask="$mask,$mask_low32"
    done
else
    for ((i = 1; i <= idx; i++)); do
        mask_tail="$mask_tail,$mask_low32"
    done
    mask_head_num=$(2 ** cpu_reset - 1)
    mask=$(printf "%x%s %x%s" $mask_head_num $mask_tail)
fi
else
    mask_num=$(2 ** cpu_nums - 1)
    mask=$(printf "%x" $mask_num)
fi

set_rps() {
    if ! command -v ethtool &>/dev/null; then
        source /etc/profile
    fi

    ethtool=$(which ethtool)
    cpu_nums=$(cat /proc/cpuinfo | grep processor | wc -l)
    if [ $cpu_nums -eq 0 ]; then
        exit 0
    fi

    mask=$(get_all_mask $cpu_nums)
    echo "cpu number:$cpu_nums mask:0x$mask"

    ethSet=$(ls -d /sys/class/net/eth*)
    for entry in $ethSet; do
        eth=$(basename $entry)
        nic_queues=$(ls -l /sys/class/net/$eth/queues/ | grep rx- | wc -l)
        if (($nic_queues == 0)); then
            continue
        fi

        cat /proc/interrupts | grep "LiquidIO.*rxtx" &>/dev/null
        if [ $? -ne 0 ]; then # not smartnic
            # multi queue don't set rps
            max_combined=$(($ethtool -l $eth 2>/dev/null | grep -i combined | head -n 1 | awk '{print $2}'))
        fi
    done
}

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```bash
# if ethtool -l $eth goes wrong.
[[ ! "$max_combined" =~ ^[0-9]+$ ]] && max_combined=1
if [ $(max_combined) -ge $(cpu_nums) ]; then
echo "$eth has equally nic queue as cpu, don't set rps for it..."
continue
fi
else
echo "$eth is smartnic, set rps for it..."
fi

echo "eth:$eth queues:$nic_queues"
total_nic_queues=$((total_nic_queues + $nic_queues))
i=0
while (($i < $nic_queues)); do
echo $mask >/sys/class/net/$eth/queues/rx-$i/rps_cpus
echo 4096 >/sys/class/net/$eth/queues/rx-$i/rps_flow_cnt
i=$(($i + 1))
done
done

flow_entries=$((total_nic_queues * 4096))
echo "total_nic_queues:$total_nic_queues flow_entries:$flow_entries"
echo $flow_entries >/proc/sys/net/core/rps_sock_flow_entries
}
set_rps
```

iii. Press Esc to exit edit mode and enter :wq to save the file and go back. Then, run the following commands:

```bash
chmod +x /usr/local/sbin/set_rps.sh
echo "/usr/local/sbin/set_rps.sh >/tmp/setRps.log 2>&1" >> /etc/rc.local
```

3. Reboot the gateway CVM to apply the configurations. Then, test if a CVM that has no public IP can access the Internet through the public gateway CVM.
Switch to VPC

Last updated: 2020-04-01 11:30:15

Scenario

Tencent Cloud provides basic networks and VPCs for different scenarios. Various features are offered to help you flexibly manage your networks.

- Switch between networks:
  - Switch from a basic network to a VPC: Tencent Cloud allows you to switch a CVM instance from a basic network to a VPC and batch switch CVM instances from basic networks to a VPC.
  - Switch between VPCs: Tencent Cloud allows you to switch one or more CVM instances from VPC A to VPC B at a time.
- Specify a custom IP address.
- Choose to retain the HostName.

Notes

- When you batch switch multiple CVM instances between networks, the selected CVM instances must be located in the same availability zone.
- Before migration, unbind the CVM instance or instances from the CLB and ENI in the private and public networks and release the secondary IP address of the primary ENI. Rebind them after the migration.
- During the migration, the CVM instance or instances need to be restarted. Therefore, do not perform other operations.
- After the migration, please check whether the CVM instance or instances are running normally and can be accessed via a private network and logged in to remotely.
- Switching from a basic network to a VPC is irreversible. A CVM instance cannot communicate with CVM instances in basic networks after being switched from a basic network to a VPC.

Procedure

1. Log in to the **CVM console**.
2. On the Instances page, find the CVM instance to be switched between networks. In the Actions column, click **More** and then choose **Resource Adjustment > Switch VPC**.
To switch the VPCs of multiple CVM instances in a batch, select the CVM instances to be switched, click More actions at the top of the page and then choose Resource Adjustment > Switch VPC.

3. In the Switch VPC window that appears, read the notes and then click Next.
4. Select the destination VPC and the corresponding subnet and then click Next.
5. In the selected subnet section, specify the pre-assigned IP address and the HostName options as required and then click Next.

- If no pre-assigned IP address is specified, the system will automatically assign an IP address.
- When specifying the HostName options, you can select Reset HostName or Retain original HostName of the instance.

6. Perform operations according to the instructions on the Shutdown CVM page and then click Start Migration. After the migration is complete, you can log in to the CVM console, and on the Instances page, you will see Modifies instance VPC attributes is displayed in the Status column of the instances to be switched.
Elastic Public IP

Last updated: 2020-04-27 14:46:38

Scenario

Elastic IP, or EIP, is a static IP designed for dynamic cloud computing and a fixed public IP in a certain region. With EIP, you can quickly remap an address to another instance in your account or NAT gateway instance to avoid instance failure. This document describes how to use EIPs.

Prerequisites

You have logged in to the CVM Console.

Directions

Apply for EIPs

1. In the left sidebar, click EIP to enter the EIP management page.
2. Click Apply in the EIP management page.
3. In the pop-up “Apply for EIP” window, select the region, IP address type, billing method and bandwidth limit, and enter the number of EIPs you want to apply for.
4. Click OK to complete the EIP application.

After the application is completed, you can see in the list the EIP you have applied for, which is in an unbound status.

Bind EIPs to cloud products

1. In the left sidebar, click EIP to enter the EIP management page.
2. In the EIP management page, select the EIP which you want to bind to a cloud product and click More > Bind.
   
   If the EIP has been bound to an instance, please unbind it first.

3. In the pop-up “Bind resources” window, select the resource to be bound to the EIP and click OK.
4. In the pop-up window, click OK to complete binding the EIP to the cloud product.
Unbind EIPs from cloud products
1. In the left sidebar, click EIP to enter the EIP management page.
2. In the EIP management page, select the EIP which you want to unbind from the cloud product and click More > Unbind.
3. In the pop-up “Unbind EIP” window, confirm the unbinding information and click OK.
4. In the pop-up window, click OK to complete unbinding the EIP from the cloud product.

After unbinding, the cloud product instance may be assigned a new public IP, which may be different from the one before binding.

Release EIPs
1. In the left sidebar, click EIP to enter the EIP management page.
2. In the EIP management page, select the EIP which you want to release from the cloud product and click More > Release.
3. In the pop-up “Are you sure you want to release the selected EIPs?” window, select Release the above EIPs and click Release.

Adjust Bandwidth
1. In the left sidebar, click EIP to enter the EIP management page.
2. Select the EIP whose bandwidth needs to be adjusted and click Adjust Bandwidth.
3. In the pop-up “Adjust Bandwidth” window, configure the bandwidth value and click OK to complete the adjustment.

Convert a public IP to an EIP
The public IP purchased along with the CVM instance is not elastic and cannot be mounted or unmounted. Tencent Cloud allows you to convert the public IP to an EIP by the following steps:
1. In the left sidebar, click Instances to enter the instance management page.
2. Select the instance whose public IP needs to be converted to an EIP and then click , as shown below:
3. In the pop-up “Convert to EIP” window, click **OK**.

**Troubleshoot Exceptions**

Network inaccessibility may occur with an EIP due to the following reasons:

- The EIP is not bound to any cloud product. For more information about how to bind an EIP to the cloud product, please see [Bind EIPs to cloud products](#).
- Security policy is invalid. Check if there is a valid security policy (security group or network ACL). If the bound cloud product has a security group policy, such as access to 8080 port is denied, the
port 8080 of the EIP is also inaccessible.
EIP Direct Connection
Last updated: 2020-04-13 19:05:01

Use Cases

When you want to access internet via an EIP, you can choose NAT mode or direct connection mode. The default mode is NAT mode.

- In NAT mode, EIP is invisible on the local machine.
- In direct connection mode, the EIP is visible on the local machine. You do not need to manually add an EIP address for each configuration, which can minimize development cost.
- NAT mode can meet most of the requirements. However, if you want to check the public IP on the CVM, you need to use EIP direct connection mode.

Use Limits

- At present, EIP direct connection is under beta test and is only available to whitelisted users. It only supports devices in a VPC. You can submit a ticket to apply for this feature.
- An NAT gateway can be bound with EIPs that are enabled with direct connection, but direct connection cannot be implemented.
- On CVM, EIP direct connection cannot take effect at the same time as an NAT gateway. If the routing table associated with the subnet where your CVM resides is configured with a routing policy of accessing the public network through the NAT gateway, direct connection cannot be implemented through the EIP on the CVM. You can allow the CVM to access the public network through its EIP by adjusting the priorities of NAT gateways and EIPs. In this case, EIP direct connection can be implemented.

Directions

To use EIP direct connection, you need to enable it in the console and add the IP to the ENI in the operating system. You also need to configure the routing in the operating system based on your application. Therefore, we provide a script for configuring the IP so that private network traffic goes through the private IP and public network traffic goes through the public IP.

For other applications, configure the routing accordingly.
Configuring EIP direct connection on Linux CVM

- The script for Linux supports CentOS 6 and later, and Ubuntu.
- The script for Linux supports only primary ENI (eth0) and does not support secondary ENI.
- If the public IP that is bound to the primary ENI is not an EIP, you need to convert the public IP to an EIP. For more information, see Converting public IP to EIP.

Scenario
The script for Linux is applicable to the following scenario: both the private IP and public IP are bound to the primary ENI (eth0), where the public network address is accessed through the public IP, and the private network address is accessed through the private IP.

Step 1: download the script for EIP direct connection
EIP direct connection may cause network interruption. Therefore, you need to download the script for EIP direct connection and upload it to CVM in advance. You can obtain the script by using one of the following methods:

- **Method 1: upload the script for EIP direct connection**
  1. Download the configuration script for EIP direct connection from Download Script for Linux
  2. After the script for Linux is downloaded onto the local machine, upload it to the CVM that requires EIP direct connection.

- **Method 2: directly use a command**
  Log in to the CVM, and run the following command on the CVM to download the script:

  ```bash
  wget https://eip-direct-1254277469.cos.ap-guangzhou.myqcloud.com/eip_direct.sh
  ```

Step 2: run the script for EIP direct connection
1. Log in to the CVM that requires EIP direct connection.
2. Run the script for EIP direct connection as follows:
   1. Run the following command to add the execution permission:

     ```bash
     chmod +x eip_direct.sh
     ```
   2. Run the following command to run the script:

     ```bash
     ./eip_direct.sh install XX.XX.XX.XX
     ```
Here, XX.XX.XX.XX indicates the EIP address (optional). You may leave it blank and run
```
./eip_direct.sh install
directly.
```

### Step 3: enable EIP direct connection

1. Log in to the **EIP Console**.
2. Find the target EIP, and choose **More -> Direct connection** in the **Operation** column on the right.

### Configuring EIP direct connection on Windows CVM

- To use EIP direct connection in Windows, you need one ENI for private IP and one ENI for public IP, and bind the public IP to the primary ENI and bind the private IP to the secondary ENI.
- During configuration of EIP direct connection in Windows, your internet connection may be interrupted. Therefore, we recommend that you **log in to a Windows instance via VNC**.

- If the public IP that is bound to the primary ENI is not an EIP, you need to convert the public IP to an EIP. For more information, see **Converting public IP to EIP**.

### Scenarios

The script for Windows is applicable to the following scenario: Public network traffic goes through the primary ENI, and private network traffic goes through the secondary ENI.

">

### Step 1: download the script for EIP direct connection

During configuration of EIP direct connection, the internet connection will be interrupted. Therefore, you need to download the script for EIP direct connection and upload it to CVM in advance. Open the following link in the browser of the CVM to download the script for EIP direct connection:

```
https://windows-1254277469.cos.ap-guangzhou.myqcloud.com/eip_windows_direct.bat
```

### Step 2: configure the secondary ENI

1. Log in to the **CVM Console**.
2. On the **Instances** page, click the configured CVM ID to go to the **Basic Information** page.
3. Select the **ENI** tab and click **Bind ENI** to create an ENI that is in the same subnet as the primary ENI.
4. In the pop-up window, select **Create and Bind an ENI**, enter the information, select **Automatic Assignment** in **Assign IP** section and click **OK**.

---

**Step 3: configure EIP direct connection for the primary ENI**
1. Log in to the EIP Console.
2. Find the EIP that is bound to the primary ENI and choose **More -> Direct Connection** in the **Operation** column on the right.

**Step 4: configure IP in CVM**

1. Log in to the CVM. This operation may cause public network interruption. Therefore, you need to **Log in to a Windows instance via VNC**.
2. On the operating system page, select in the lower-left corner and click to open the **Windows PowerShell** window. Enter and press Enter to open the **Windows Firewall** page.
3. Click **Turn Windows Firewall on or off** to go to the **Customize Settings** page.

![Windows Firewall](image)

4. Select **Turn off Windows Firewall** both in the **Private network settings** pane and the **Public network settings** pane.
5. Double-click to run the script downloaded in Step 1. Enter the public IP address and press Enter twice.

6. Enter `ipconfig` in the Windows PowerShell window and press Enter. You can see that the IPv4 address on the primary ENI changes to the public network address.

When the direct connection is enabled, you cannot assign a private IP to the primary ENI. Otherwise, the CVM cannot access the public network.
Cloud Block Storage
Expand cloud disks

Last updated: 2020-03-30 14:43:06

Scenario

A cloud disk is an expandable storage device on the cloud. After a cloud disk is created, you can expand its capacity at any time to increase its storage capacity without losing any data. After a cloud disk is expanded, you need to allocate the added capacity to existing partitions or new partitions. Please refer to Expanding Windows File System or Expanding Linux File System.

MBR disks support a maximum disk capacity of 2TB. If your disk is a MBR disk and needs to be expanded to more than 2TB, we recommend that you create and mount a new data disk, initialize it to GPT, and copy the data on the MBR disk to the new disk.

Expanding data disks

Expanding via the Cloud Block Storage (CBS) Console

1. Log in to the CBS Console.
2. Select More > Expand to the right of the cloud disk you want to expand.
3. Select a new capacity. It must be greater than or equal to the current capacity.
4. Complete the payment.
5. Allocate the added capacity to existing partitions or new partitions. For details, see Expanding Windows File System or Expanding Linux File System depending on the operating system of the cloud services you want to use.

Expanding via the CVM Console

1. Log in to the CVM Console.
2. Select More > Resource Adjustment > Adjust Disk to the right of the CVM you want to make change to.
3. Select a new capacity. It must be greater than or equal to the current capacity.
4. Complete the payment.
5. Allocate the added capacity to existing partitions or new partitions. For details, see Expanding Windows File System or Expanding Linux File System depending on the operating system of the cloud services you want to use.

**Expanding via API**

You can create a snapshot with the ResizeCbsStorage API. For details, see ResizeDisk.

**Expanding system disks**

If a system disk is a cloud disk, you can expand it, but only by reinstall the system of the CVM.
Scenario

Tencent Cloud CVM supports the adjustment of storage hardware media, which enables you to flexibly respond to different storage needs of different services. Tencent Cloud provides two types of block storage, i.e., Cloud Block Storage and Local Storage. We currently support the change of local disks to cloud disks. This document describes how to change disk media type.

The downside of CVMs with local disks:

- The configuration cannot be customized due to the limit of host resources.
- Features such as snapshots and creation acceleration are not supported.
- Low data reliability.
- Host failures will have a longer impact.

To avoid the downside of CVMs with local disks, you can change the existing CVMs with local disks in your account to CVMs with cloud disks.

Prerequisites

- **CVM Status**
  
  This operation can only be done when a CVM is in the **Shut down** state. Please shut down your CVM first.

- **CVM Type**
  
  - Spot CVMs do not support the change of local disks to cloud disks.
  - Dedicated CVMs do not support the change of local disks to cloud disks.
  - CVMs such as big data model D1 and D2 and high I/O model I3 and I4 do not support the change of local disks to cloud disks.
  - Bare metal instances do not support the change of local disks to cloud disks.

- **CVM Configuration**
  
  - You can change local disks to cloud disks only when there is at least one **regular local disk** or **SSD local disk** among the system disk and data disks of the CVM.
  - You can change local disks to cloud disks only when cloud disks are available in the availability zone of the CVM and the size of the local disks is within the range supported by cloud disks.
If both the system disk and the data disks of the CVM are local disks, when you change the disk media type, it will apply to all of the local disks of the CVM. You will also be able to configure the cloud disk type for each disk separately. That means when you change the disk media type for a CVM whose disks are all local disks, you cannot change only the system disk or only the data disks to cloud disks. If you make the change, it will apply to all the disks.

Changing the media type of a disk will not change its size. After you change the media type, you may expand cloud disks.

Changing local disks to cloud disks will not change the life cycle of a CVM, instance ID, internal/external network IP, disk name, and mount point.

Notes

- When you change local disks to cloud disks, the data on the local disks will be copied to the cloud disks. How long it takes depends on the amount of data and the data transmission speed. The process may take a while.
- You can only change local disks to cloud disks, not the other way around.
- It is recommended to start and log in to the CVM to check if there is any data loss after the change is completed.

Directions

1. Log in to the CVM Console and go to the list of CVM instances.

   If the CVM has already been shut down, go to Step 3.

2. To the right of the CVM you want to make change to, click More > Instance Status > Shutdown to shut down the CVM.
3. To the right of the CVM you want to make change to, click More > Resource Adjustment > Change Disk Media Type.
4. In the pop-up window, select the cloud disk type you want to use for the system disk and the data disks, check the consent box, and click Convert Now.
5. Double-check the information, make a payment if applicable, and wait for the process to complete.
A security group is a virtual firewall and features stateful data packet filtering. It is used to configure the network access control of CVM, Cloud Load Balancer, TencentDB, and other instances, while controlling their outbound and inbound traffic. It is an important means of network security isolation. You can configure security group rules to allow or reject inbound traffic and outbound traffic of instances within the security group.

Security group features

- A security group is a logical group. You can add CVM, ENI, TencentDB, and other instances in the same region with the same network security isolation requirements to the same security group.
- By default, instances associated with the same security group are not interconnect with each other, unless you add relevant rules.
- Security groups are stateful. Inbound traffic you have allowed can automatically go outward and vice versa.
- You can modify security group rules at any time, and the new rules take effect immediately.

Security group rules

Components

A security group rule consists of the following components:

- Source: IP address of the source data (inbound) or target data (outbound).
- Protocol type and protocol port: protocol type can be TCP, UDP, HTTP, etc.
- Policy: allow or reject.

Rule Priorities

- Security group rules have priorities, which are indicated by their positions in the list. The rule at the top of the list has the highest priority and is the first to be applied. The rule at the bottom has the lowest priority.
In case of rule conflict, the rule that is higher in the list prevails.

When traffic enters or exits an instance that is bound to a security group, the security group rules will be matched in order from top to bottom. If a rule is matched successfully, the traffic is allowed to pass and the system no longer matches it with subsequent rules.

**Multiple security groups**

An instance can be bound with one or multiple security groups. When it is bound with multiple security groups, the security group rules will be matched in order from top to bottom. You can adjust security group priorities at any time.

**Security group templates**

When creating a security group, you can use the two security group templates provided by Tencent Cloud.

- Template that opens all ports: all inbound and outbound traffic will be allowed to pass.
- Template that opens major ports: port TCP 22 (for Linux SSH login), ports 80 and 443 (for Web service), port 3389 (for Windows remote login), ICMP protocol (for Ping commands), and private network will be open to traffic.

If these templates cannot meet your actual needs, you can create custom security groups. For details, see [Creating a Security Group](https://intl.cloud.tencent.com/document/product/213/15379) and [Security group use cases](https://intl.cloud.tencent.com/document/product/213/15379).

- If you need to protect the application layer (HTTP/HTTPS), you can purchase Tencent Cloud Web Application Firewall (WAF). It defends web security at the application layer against web vulnerabilities, malicious crawlers, and CC attacks, helping protect your websites and web applications.

**Use Limits**

For use limits and quotas of security groups, see security group limits in [Use Limits Overview](https://intl.cloud.tencent.com/document/product/213/15379).
Directions

The process to use the security group is shown in the following figure:
Creating a Security Group

Last updated : 2020-03-06 10:50:16

Scenario

Security Groups act as virtual firewalls for CVMs. Each CVM instance must associate with at least one security group. By default, each CVM instance has two templates (Open all ports and Open port 22, 80, 443, 3389 and ICMP protocol) for creating a default security group. For details, refer to Security Group Overview.

If the default security group does not meet your needs, you can create your own security group as instructed below.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select a region for the security group. Click +New.
4. In the Create a security group page, complete the following configurations:

   - **Template**: select a template that suits your needs, as shown below:
<table>
<thead>
<tr>
<th>Template</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open all ports</td>
<td>All ports are open. May present security issues.</td>
<td>-</td>
</tr>
<tr>
<td>Open port 22, 80, 443, 3389 and ICMP protocol</td>
<td>Port 22, 80, 443 and 3389, and the ICMP protocol are open. All ports are open internally.</td>
<td>Suitable for instances with web services.</td>
</tr>
<tr>
<td>Custom</td>
<td>Creates a blank security group in which rules are added afterwards. For details on how to add rules, refer to this article.</td>
<td>-</td>
</tr>
</tbody>
</table>

- Name: name of the security group.
- Project: by default, **Default project** is selected. Select a project for better management.
- Notes: a short description for the security group.

5. Click **OK** to create the security group.

If you select **Custom** as the template for your security group, click **Add rules now** to add security group rules.
Adding Security Group Rules

Last updated: 2020-03-06 10:50:17

Scenario

Security groups are used to manage traffic to and from public and private networks. For the sake of security, most inbound traffic is denied by default. If you selected Open all ports or Open port 22, 80, 443, 3389 and ICMP protocol as the template when creating a security group, rules are automatically created and added to the security group to allow traffic on those ports. For details, refer to Security Groups.

This article describes how to add security group rules to allow or ban traffic to and from public or private networks.

Notes

- Security group rules support IPv4 and IPv6 rules.
- Open all ports allows both IPv4 and IPv6 traffic.

Prerequisites

- You should have an existing security group. If you do not, refer to Create a Security Group for details.
- You should have a clear understanding about which traffic is allowed or banned for your CVM instance. For more information on security group rules and their use cases, refer to Security group use cases.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. On the Security Group page, select a region, and find the security group for which you want to set rules.
4. Locate the desired security group and click the corresponding Modify Rules button to go to the Security Group Rule page.
5. Click **Inbound rules** and choose one of the following methods to add rules.

The following instructions use method two, **Add a rule**, as an example.

- Open all ports: this method is ideal if you do not need custom ICMP rules and all traffic goes through ports 20, 21, 22, 80, 443, and 3389 and the ICMP protocol.
- Add a rule: this method is ideal if you need to use multiple protocols and ports other than those mentioned above.

6. Click **Add a Rule** to bring up the **Add Inbound Rule** window.

Configure the following parameters:

- **Type**: by default, **Custom** is selected. You can select other types such as **Login Windows CVMs (3389)**, **Login Linux CVMs (22)**, **Ping**, **HTTP (80)**, **HTTPS (443)**, **MySQL (3306)**, and **SQL Server (1433)**.
- **Source or Destination**: traffic origin (inbound rules) or target (outbound rules). You can use one of the following to define Source or Destination:

<table>
<thead>
<tr>
<th>Source or Destination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 addresses or ranges</td>
<td>in CIDR format 203.0.113.0, 203.0.113.0/24 or 0.0.0.0/0. 0.0.0.0/0 indicates all IPv4 addresses.</td>
</tr>
<tr>
<td>IPv6 addresses or ranges</td>
<td>in CIDR format, such as FF05::B5, FF05:B5::/60, ::/0 or 0::/0. ::/0 or 0::/0 indicates all IPv6 addresses.</td>
</tr>
</tbody>
</table>
| ID of referenced security group. You can reference the ID of: | • Current security group: CVMs associated with the current security group.  
  • Other security group: ID of another security group in the same region that belongs to the same project. |
| Reference IP address objects or IP group objects in a Parameter Template. | - |

- **Protocol port**: `protocol:port`. You can also reference protocol/port or protocol/port groups in a Parameter Template.
- **Policy**: Allow or Refuse. By default, Allow is selected.
  - Allow: traffic to this port is allowed.
  - Refuse: data packets are dropped without any response.
- **Remarks**: a short description of the security group rule.
7. Click **Complete** to finish adding the rule.
8. To add an outbound rule, click **Outbound rule** and refer to **Step 5 to Step 7**.
Associating CVM Instances with Security Groups

Last updated: 2020-03-06 11:28:56

Security Groups can be associated with CVMs, ENIs, cloud databases and CLBs. In this document, we use CVMs for example.

Scenario

A security groups can be associated with one or more CVMs for network access control. They are an important part of CVM network security measures. You can associate your CVM with one or more security groups if necessary. The following are detailed instructions.

Prerequisites

You should already have an CVM instance created before starting.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select the desired region and find the security group.
4. Under Operations, click Manage Instances that corresponds to the desired security group. The Bind with Instance page then appears.
5. Click Add Instances. The Add Instances page then appears.
6. Select desired instances and click OK to add.

See Also

- You can check all security groups in a specific region. See Viewing Security Groups.
If you want disassociate a CVM instance with one or more security groups, you can remove it from the security group.

See Removing From Security Groups.

If you no longer need a security group, you can delete it. Once a security group is deleted, all rules within it are also deleted.

See Deleting Security Groups.
Managing Security Groups

Viewing Security Groups

Last updated: 2020-03-06 14:44:08

Scenario

This article describes how to view all security groups of a region.

Directions

View security groups

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select a region to see a list of security groups under that region.

Search for a security group

You can also use the search bar on the Security Group page to quickly find a specific security group.

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
4. Click the search bar and use one of the following fields to search for a security group.

- Security Group ID: input the desired ID and click to see the corresponding security group.
- Security Group Name: input the desired name and click to see the corresponding security group.
- Tag: input a tag and click to see a list of all security groups with that tag.

Other Operations
To learn more about how to search for a security group, click .
Deleting a Security Group

Scenario

If you no longer need a security group, you can delete it. Once a security group is deleted, all rules within it are also deleted.

Prerequisites

Before deleting a security group, you must remove all associated CVM instances. Otherwise, the operation will fail. For details, refer to Removing From Security Group.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select the desired region and find the security group to be deleted.
4. Locate the desired security group and click Delete.
5. In the pop-up window, click OK.
Remove from Security Groups

Scenario

You can remove a CVM instance from a security group if necessary.

Prerequisites

The instance is associated with two or more security groups.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select the desired region and find the desired security group.
4. Click the corresponding Manage Instances button to go to the Bind with Instance page.
5. Select the instances to be removed and click Remove Selected.
6. In the pop-up window, click OK.
Cloning Security Groups

Last updated: 2020-03-06 11:38:51

Scenario

You might need to clone a security group if you:

- Have created a security group sg-A in region A and you want to apply the same rules to an instance in region B. You can clone sg-A to region B, instead of creating a new security group from scratch.
- Need a new security group for your service but want to clone the old security group as a backup.

Notes

- By default, when you clone a security group, only the rules are cloned, not the association with instances.
- You can clone a security group across projects and regions.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select desired region. A list of security groups under the region then appears.
4. Locate the desired security group and click More. Then click Clone. The Clone security group page then appears.
5. Select a Target region and Target project and input a New name for the new security group. Click OK.
Adjust security group priority

Operation scene

A Cloud Virtual Machine instance can be bound to one or more security groups. When a Cloud Virtual Machine instance is bound to multiple security groups, multiple security groups will be executed in the order of priority (for example, 1 and 2). You can adjust the priority of the security group according to the following operations.

prerequisite

Cloud Virtual Machine instance has joined two or more security groups.

Operation step

1. Login Cloud Virtual Machine console.
2. On the instance management page, click Cloud Virtual Machine instance ID, to enter the details page.
3. Select the "Security groups" tab to go to the security group management page.
4. In the bound Security Group module on the right, click sort, and select Drag up and down to adjust the priority of the security group. The higher the position, the higher the priority of the security group.
5. When the adjustment is completed, click "Save".
Managing Security Group Rules

Viewing Security Group Rules

Scenario

After adding a security group rule, you can view its details in the console.

Prerequisites

You have created a security group and added at least one rule.

For information on how to create a security group and a security group rule, refer to Creating a Security Group and Adding Security Group Rules.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. On the Security Group page, select a region, and find the security group for which you want to view rules.
4. Click the name or ID or the desired security group to go to the details page.
5. Select Inbound rule or Outbound rule to view all inbound or outbound security group rules.
Modifying Security Group Rules

Last updated : 2020-03-06 11:43:58

Scenario

This article describes how to modify a security group rule. Rules are important because they protect your CVM instance from malicious attacks. For example, they can protect certain ports from being abused.

Prerequisites

Make sure you have created a security group with rules.
Refer to Creating Security Groups and Adding Security Group Rules.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select the desired region and find the security group.
4. Locate desired security group and click Modify Rules. The Security Group Rule page then appears.
5. Use Inbound rule and Outbound rule to switch between inbound and outbound security group rules.
6. Locate the desired rule and click Edit to modify it.

You don’t need to reboot the CVM for the rule changes to take effect.
Importing Security Group Rules

Last updated: 2020-03-06 11:47:18

Scenario

Security group rules can be imported from a file. You can use this feature to quickly restore or create security group rules.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select desired region to see a list of security groups.
4. Locate desired security group and click its name. Security Group Rule page appears.
5. Select inbound or outbound rules by clicking Inbound rule or Outbound rule.
7. Click Browse and select a rule template file. Click Import.

- If there are existing rules in the security group, export them before importing new rules. Existing rules are overwritten after importing.
- If there is no existing rules in the security group, download the template first. Use it as a start to modify rules to your liking. Import them once you are finished.
Exporting Security Group Rules

Last updated : 2020-03-06 11:48:17

Scenario

You can export security group rules and save them locally for backup.

Directions

1. Log in to the CVM Console.
2. In the left sidebar, select Security Group. The Security Group page then appears.
3. Select a region to display a list of security groups.
4. Click the name or ID of the desired security group. The details page of the selected security group appears.
5. Select inbound or outbound rules by clicking Inbound rules or Outbound rules.
6. Click to export security group rules to a file and save it to your local device.
Delete security group policies

Scenario

If you no longer need a security group rule, you can delete the rule.

Prerequisites

- You have created a security group and added at least one rule. For information on how to create a security group and add security group rules, see Creating a Security Group and Adding Security Group Rules.
- You have confirmed that your CVM instance does not need to permit or forbid Internet access or private network access.

Procedure

1. Log in to the CVM console.
2. In the left sidebar, click Security Group to go to the security group management page.
3. On the security group management page, select Region and locate the security group whose rules that you want to delete.
4. In the action column, click Modify Rules to go to the security group rule page.
5. Select inbound or outbound rules by clicking Inbound rules or Outbound rules.
6. Locate the security group rule that you want to delete, and click Delete in the action column.
7. In the pop-up window that appears, click OK.
Security group use cases

Security groups are configured to manage access to Cloud Virtual Machines (CVMs). You can configure inbound and outbound rules for security groups to specify whether your CVMs can be accessed or can access other network resources.

The default inbound and outbound rules for security groups are as follows:

- **To ensure data security, the inbound rule for a security group is a rejection policy that forbids remote access from external networks.** To enable external network access to your CVM, you need to open the inbound rule of the corresponding port to the Internet.
- The outbound rule for a security group specifies whether your CVM can access external network resources. If you select "Open All Ports" or "OpenPorts22,80,443, and3389 andICMP", the outbound rule for the security group opens all ports to the Internet. If you select a custom security group rule, the outbound rule rejects all ports by default, and you need to configure the outbound rule to allow the corresponding port to access external network resources.

Common use cases

This document describes several common use cases of security groups. If the following cases meet your requirements, you can configure the security groups according to the recommended configurations for the corresponding use cases.

**Scenario 1: Remotely connecting to a Linux CVM via SSH**

**Case**: You have created a Linux CVM and want to connect to the CVM via SSH remotely.

**Solution** When adding security group rules, select "Linux login" in "Type", Protocol port Enable 22, and Open to Internet Linux SSH login.

You can open all IP addresses or a specified IP address (or IP address range) to the Internet as required. This allows you to configure the source IP addresses of the CVMs that can be remotely connected to via SSH.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>Linux Login</td>
<td>• All IP addresses: 0.0.0.0/0</td>
<td>TCP: 22</td>
<td>Allow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Specified IP address: Enter your specified IP address or IP address range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Scenario 2: Remotely connecting to a Windows CVM via RDP

**Case**: You have created a Windows CVM and want to remotely connect to the CVM via Remote Desktop (RDP).

**Solution** When adding security group rules, select "Windows login" in "Type", Enable port 3389 Protocol, Open to Internet Windows remote login.

You can open all IP addresses or a specified IP address (or IP address range) to the Internet as required. This allows you to configure the source IP addresses of the CVMs that can be remotely connected to via RDP.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>Windows Login</td>
<td>• All IP addresses: 0.0.0.0/0</td>
<td>TCP: 3389</td>
<td>Allow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Specified IP address: Enter your specified IP address or IP address range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scenario 3: Pinging a CVM in a public network

**Case**: You have created a CVM and want to test whether its communication with other CVMs is normal.

**Solution** Use the ping program for testing That is, when adding security group rules, select the "type" as "Ping", Enable ICMP Protocol port, and allow other Cloud Virtual Machine to pass through ICMP Protocol Access this Cloud Virtual Machine.

You can open all IP addresses or a specified IP address (or IP address range) to the Internet as required. This allows you to configure the source IP addresses of the CVMs that can access this CVM via ICMP.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>Ping</td>
<td>• All IP addresses: 0.0.0.0/0</td>
<td>ICMP</td>
<td>Allow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Specified IP address: Enter your specified IP address or IP address range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scenario 4: Remotely logging in to a CVM via Telnet

**Case**: You want to remotely log in to a CVM via Telnet.

**Solution** If you need to log in to Cloud Virtual Machine remotely through Telnet, you need to configure the following security group rules when adding security group rules:

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Scenario 5: Opening access to a web service via HTTP or HTTPS

**Case**: You have built a website and want users to be able to access your website via HTTP or HTTPS.

**Solution** If you need access to your website through HTTP or HTTPS, you need to configure the following security group rules according to your actual needs when adding security group rules:

- Allow all IP addresses in the public network to access this website.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>HTTP (80)</td>
<td>0.0.0.0/0</td>
<td>TCP: 80</td>
<td>Allow</td>
</tr>
<tr>
<td>Inbound</td>
<td>HTTPS</td>
<td>0.0.0.0/0</td>
<td>TCP: 443</td>
<td>Allow</td>
</tr>
</tbody>
</table>

- Allow some IP addresses in the public network to visit this website.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>HTTP (80)</td>
<td>The IP address or IP address range</td>
<td>TCP: 80</td>
<td>Allow</td>
</tr>
<tr>
<td></td>
<td>HTTPS</td>
<td>that is allowed to access your website</td>
<td>TCP: 443</td>
<td>Allow</td>
</tr>
</tbody>
</table>

### Scenario 6: Allowing an external IP address to access a specified port

**Case**: You have deployed a service and want the specified service port (such as 1101) to be externally accessible.

**Solution** When adding security group rules, select "Custom" in "Type", Enable 1101 Protocol port, which allows the service port specified by Access.

You can open all IP addresses or a specified IP address (or IP address range) to the Internet as required. This allows the source IP address to access the specified service port.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
</table>
| Inbound   | Custom  | • All IP addresses: 0.0.0.0/0  
|           |         | • Specified IP address: Enter your specified IP address or IP address range | TCP: 1101     | Allow  |
Scenario 7: Rejecting access to a specified port by external IP addresses

**Case**: You have deployed a service and want to prevent external access to a specified service port (such as 1102).

**Solution** When adding security group rules, select "Custom" in "Type", configure Port 1102 of Protocol, set "Policy" to "reject", and reject the service port specified by Access.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>Custom</td>
<td>All IP addresses: 0.0.0.0/0</td>
<td>TCP: 1102</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specified IP address: Enter your specified IP address or IP address range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scenario 8: Allowing a CVM to access only a specified external IP address

**Case**: You want your CVM to access only a specified external IP address.

**Solution**: Add two outbound security group rules by following these configurations:

- Allow the CVM instance to access a specified external IP address.
- Forbid the CVM instance from accessing any public IP addresses via any protocol.

Rules that permit access take priority over those that forbid access.

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outbound</td>
<td>Custom</td>
<td>The specified public IP address that can be accessed by the CVM</td>
<td>The required protocol and port</td>
<td>Allow</td>
</tr>
<tr>
<td>Outbound</td>
<td>Custom</td>
<td>0.0.0.0/0</td>
<td>ALL</td>
<td>Reject</td>
</tr>
</tbody>
</table>

Scenario 9: Prohibiting a CVM from accessing a specified external IP address

**Case**: You do not want your CVM to access a specified external IP address.

**Solution**: Add a security group rule by following these configuration:

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outbound</td>
<td>Custom</td>
<td>The specified public IP address that you do not want your CVM instance to access</td>
<td>ALL</td>
<td>Reject</td>
</tr>
</tbody>
</table>
Scenario 10: Uploading or downloading a file from a CVM via FTP

**Case**: You want to upload a file to or download a file from a CVM by using the FTP software.

**Solution**: Add a security group rule by following these configuration:

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type</th>
<th>Source</th>
<th>Protocol Port</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound</td>
<td>Custom</td>
<td>0.0.0.0/0</td>
<td>TCP: 20 to 21</td>
<td>Allow</td>
</tr>
</tbody>
</table>

Combination of multiple security rules

In a real scenario, you may need to configure multiple security group rules based on your business requirements, such as configuring inbound or outbound rules at the same time. One CVM may be bound to one or more security groups. When a CVM is bound to multiple security groups, security groups are matched and executed in descending order of priority. You can adjust the priority of the security group at any time. For priority of security group rules, see Security Group Priority.
The following describes the common server ports. For more information on service application ports on Windows, please see Microsoft official document (*Windows Service Overview and Network Port Requirements*).

<table>
<thead>
<tr>
<th>Port</th>
<th>Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>FTP</td>
<td>FTP server's open port for upload and download.</td>
</tr>
<tr>
<td>22</td>
<td>SSH</td>
<td>Port 22 is the SSH port, used to remotely connect to Linux system servers in command-line mode.</td>
</tr>
<tr>
<td>25</td>
<td>SMTP</td>
<td>SMTP server's open port for sending emails.</td>
</tr>
<tr>
<td>80</td>
<td>HTTP</td>
<td>Used for Web services, such as IIS, Apache, Nginx, to provide external access.</td>
</tr>
<tr>
<td>110</td>
<td>POP3</td>
<td>Port 110 is open for POP3 (email protocol 3) service.</td>
</tr>
<tr>
<td>137, 138, 139</td>
<td>NETBIOS protocol</td>
<td>Port 137 and 138 are UDP ports used to transfer files via My Network Places. Port 139: Incoming connections over port 139 attempt to obtain NetBIOS/SMB service. This protocol is used for file and printer sharing on Windows as well as SAMBA service.</td>
</tr>
<tr>
<td>143</td>
<td>IMAP</td>
<td>Port 143 is mainly used for &quot;Internet Message Access Protocol&quot; (IMAP) v2, a protocol for receiving emails as the same as POP3.</td>
</tr>
<tr>
<td>443</td>
<td>HTTPS</td>
<td>Web browsing port. This is another type of HTTP that supports encryption and transfer over secure ports.</td>
</tr>
<tr>
<td>1433</td>
<td>SQL Server</td>
<td>Port 1433 is the default port for SQL Server. The SQL Server service uses two ports: TCP-1433 and UDP-1434. Port 1433 is used by SQL Server to provide external services, and port 1434 is used to send requester a response about which TCP/IP port is used by SQL Server.</td>
</tr>
<tr>
<td>3306</td>
<td>MySQL</td>
<td>Port 3306 is the default port for MySQL database and is used by MySQL to provide external services.</td>
</tr>
<tr>
<td>Port</td>
<td>Service</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3389</td>
<td>Windows Server Remote Desktop Services</td>
<td>Port 3389 is the service port for remote desktop on Windows 2000 (2003) Server. You can connect to a remote server using the &quot;Remote Desktop&quot; connection tool via this port.</td>
</tr>
<tr>
<td>8080</td>
<td>Proxy Port</td>
<td>Just like port 80, port 8080 is used for WWW proxy service for web browsing. Port number &quot;:8080&quot; is often added when users visit a website or use a proxy server. In addition, after Apache Tomcat Web server is installed, the default service port is 8080.</td>
</tr>
</tbody>
</table>
## Security Group API Overview

Last updated: 2020-04-22 12:24:49

<table>
<thead>
<tr>
<th>API Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CreateSecurityGroup</td>
<td>Create security groups</td>
</tr>
<tr>
<td>CreateSecurityGroupPolicies</td>
<td>Create security group rules</td>
</tr>
<tr>
<td>DeleteSecurityGroup</td>
<td>Delete security groups</td>
</tr>
<tr>
<td>DeleteSecurityGroupPolicies</td>
<td>Delete security group rules</td>
</tr>
<tr>
<td>DescribeSecurityGroupAssociationStatistics</td>
<td>Query the statistics of the instances associated with a security group</td>
</tr>
<tr>
<td>DescribeSecurityGroupPolicies</td>
<td>Query security group rules</td>
</tr>
<tr>
<td>DescribeSecurityGroups</td>
<td>Query security groups</td>
</tr>
<tr>
<td>ModifySecurityGroupAttribute</td>
<td>Modify security group attributes</td>
</tr>
<tr>
<td>ModifySecurityGroupPolicies</td>
<td>Modify the inbound and outbound rules of a security group</td>
</tr>
<tr>
<td>ReplaceSecurityGroupPolicy</td>
<td>Replace a single security group rule</td>
</tr>
</tbody>
</table>
Protection of Sensitive Operations

Overview

CVM supports sensitive operation protection. Before you perform sensitive operations, you need to enter a credential that can prove your identity. After the authentication is passed, you can perform related operations.

The sensitive operation protection of CVM can effectively protect the security of account resources, including the shutdown, restart, password reset, and termination of CVM.

Enable Operation Protection

Tencent Cloud provides two ways to protect operations:

1. Provide operation protection by enabling **MFA authentication**.
2. Provide operation protection by enabling **mobile verification code**.

You can enable the operation protection through Access Management Console.

Operation Protection Verification

When you have enabled the operation protection, the system will first perform operation protection verification when you perform sensitive operations:

- If you have enabled **MFA verification** for operation protection, you need to enter the 6-bit dynamic verification code on the MFA device.
- If you have enabled **mobile verification code** for operation protection, you need to enter the mobile verification code.

As shown in the following figure, when you try to shut down an instance, the following verification box pops up, and you need to verify the MFA device:
How do I view the MFA verification code?

1. Turn on the MFA device:
   Open the Tencent Cloud Assistant Mini Program and select "Tools" to see the bound authenticator.

2. View the dynamic verification code of the corresponding account. The dynamic verification code is updated every 30 seconds.
Manage Login Password

Last updated: 2020-02-25 10:15:35

Scenario

Cloud Virtual Machine's account number and password is credential who logs in to Cloud Virtual Machine. This document describes how to use and manage passwords when logging in to Cloud Virtual Machine.

Limits

When setting a password, the following restrictions must be met:

- Linux instance: password length should be 8mi 30. It is recommended to use a password of more than 12 characters, which cannot start with "/" and contains at least three \( a-z \), \( A-Z \), \( 0-9 \) and \( ()`!@#$%^&*-+=|{}[]:;'<>,.?/ \) The special symbol of).

- Windows instance: password length should be 12 / 30 characters, cannot start with "/", and contain at least three items \( a-z \), \( A-Z \), \( 0-9 \) and \( ()`!@#$%^&*-+=|{}[]:;'<>,.?/ \) excluding the user name

Directions

Setting initial password

In the purchase of Cloud Virtual Machine, the choice of configuration is different, the initial password setting will be different.

- Approve Custom configuration Method to create an instance: during the creation process, the initial password is set in different ways depending on the login method.

<table>
<thead>
<tr>
<th>Login mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic password generation</td>
<td>The initial password will be via email and console Internal message I'll send it to you.</td>
</tr>
<tr>
<td>Associate Key Now</td>
<td>Off by default Login with username and password, but the initial password will still be via email and console Internal message I'll send it to you.</td>
</tr>
</tbody>
</table>
Password

The custom password is the initial password.

Viewing Password

The password to log in to Cloud Virtual Machine will be via email and console Internal message I'll send it to you. The following operations take internal message as an example.

1. Log in to the CVM Console.
2. Click in the upper right corner Select the corresponding product message
   Go to the product message page to view the password.

Resetting Password

Reset Password
Managing SSH keys

Scenario

The password is a unique login credential for each CVM instance. To ensure the security of an instance, Tencent Cloud provides the following two login methods:

- Password Login
- SSH key pair login

This document describes common operations related to using SSH key pair to log in to an instance.

Directions

Creating SSH keys

1. Log in to the CVM Console.
2. In the left sidebar, click SSH Key.
3. In the SSH key management page, click Create a key.
4. In the Create an SSH key window that pops up, select how you will create the key, enter the related information, and click OK.
   - If you select Create a new key pair, enter the key name.
   - If you select Use an existing public key, enter the key name and the original public key information.
5. In the prompt box that pops up, click Download to download the private key.

Tencent Cloud does not save your private key information. Download and obtain the private key within 10 minutes.

Binding/Unbinding a key to or from a CVM

1. Log in to the CVM Console.
2. In the left sidebar, click SSH Key.
3. In the SSH key management page, select the SSH key of the CVM to be bound or unbound, and click Bind/unbind Instance.
4. In the **Bind/unbind Instance** window that pops up, select the region and the CVM to be bound or unbound, and click **OK**.

**Modifying the SSH key name and description**

1. Log in to the **CVM Console**.
2. In the left sidebar, click **SSH Key**.
3. In the SSH key management page, select the key to be modified, and click **Modify**.
4. In the **Modify a key** window that pops up, enter the new key name and description, and click **OK**.

**Deleting SSH keys**

If the SSH key is associated with a CVM or a custom image, it cannot be deleted.

1. Log in to the **CVM Console**.
2. In the left sidebar, click **SSH Key**.
3. In the SSH key management page, select all SSH keys to be deleted, and click **Delete**.
4. In the **Delete key** window that pops up, click **OK**.

**Using an SSH key to log in to a Linux CVM**

1. Create an SSH key.
2. Bind an SSH key to a CVM.
3. Log in to a Linux instance using SSH.
Spread Placement Group

Last updated : 2020-02-25 10:09:57

Scenario

This document guides you in managing spread placement group.

Directions

Creates a placement group

1. Log in to the CVM Placement Group Console.
2. Click CREATE.
3. In the pop-up window, Enter places the name of the group and selects the placement group level.
4. Click OK To finish the creation process.

Starting up Instance in Placement Group

1. Go to the CVM Purchase Page.
2. Follow the prompts on the page to complete the purchase.
   During the purchase process, please pay attention to the following actions:

   - When setting up the host, click [Advanced Settings], check [Add instance to spread placement group], select an existing placement group.
     If no existing placement group meets your requirement, you can Create a placement group In the console.

   - On the Confirm Configuration Page, enter the total number of instances to be added to the placement group, which must be less than the number limit set for the placement group.

Modifying Instance's Placement Group

You can only change the name of a placement group.

1. Log in to the CVM Placement Group Console.
2. Mouse over the ID/ name of the placement group, click 🆓.
3. In the pop-up window, enter the name you want to modify.
4. Click OK To finish the creation process.

Delete Placement Groups
If you need to replace or no longer need a placement group, you can delete it. Before deleting, you must first put all instances of Launch in the placement group by Terminate.

1. Log in to the CVM Placement Group Console.
2. In the placement group row to be deleted, click "number of instances" to go to the instance management page, and Terminate places all instances in the group.
3. Go back to the placement group console, select the placement group to be deleted, and click "Delete".
4. In the pop-up dialog box, click **OK** To complete the cordoning.
   Placement groups support batch deletions and individual deletions.
Unblocking Port 25

Last updated: 2020-03-06 10:50:18

Introduction

This article describes how to unblock port 25.

Notes

- You can only unblock port 25 for five instances for each Tencent Cloud account.
- Make sure that you only use port 25 to connect to a third-party SMTP server for sending email. If you use your CVMs to send email directly, we reserve the right to permanently ban you from opening port 25.

Directions

1. Log in to the Tencent Cloud console.
2. Click your account name in the upper-right corner. Select Security Control.
3. In the left sidebar, click Unblock port 25 to go to the Unblock port 25 page.
4. Click Apply to unlock port 25 to bring up the Apply to unblock port 25 window.
5. Select a region and the CVM instance that need to be unblocked. Select I have read and agree to the port 25 usage agreement, as shown below:

Make sure you have not used up your unblocking quota. You can check the remaining quota in the lower left of the Apply to unblock port 25 window.
Application for Unblocking TCP Port 25

Note: In order to improve the performance for sending emails from Tencent Cloud IP addresses, your CVMs are restricted from accessing the external TCP Port 25 by default. You can apply for unblocking your CVMs. A maximum of 5 unblocking operations are allowed for each account.

Select Region
South China (Guangzhou)

Select a CVM

Selected (1)

Total: 3 item(s)

Remaining quota: 4 times

I have read and accepted "Port 25 Protocol"

OK Cancel

6. Click **OK** to finish the process.
Tags

User guide on tags

Last updated: 2020-04-01 11:30:16

Scenario

A tag is a key-value pair provided to identify resources on the Tencent Cloud. Tags allow you to flexibly classify and manage your CVM resources by service, purpose, owner, and other aspects. Note that tags are not used by Tencent Cloud. They only help you to manage CVM resources.

Use Limits

Note the following limits when using tags:

- Quantity limits: Each Tencent Cloud resource can be bound to a maximum of 50 tags.
- Tag key limits:
  - Do not create tag keys prefixed with `qcloud`, `tencent`, and `project`, because they are reserved for the system.
  - A tag key can only contain digits, letters, and `+.=.-`. It cannot exceed 255 characters in length.
- Tag value limits: A tag value can only contain empty strings or digits, letters, and `+.=.-`. It cannot exceed 127 characters in length.

Directions and Cases

Case description

Case: A company purchased six CVM instances. The following table lists the information about the deployment departments, business scope, and owners of the six CVM instances.

<table>
<thead>
<tr>
<th>Instance ID</th>
<th>Deployment Department</th>
<th>Business Scope</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>ins-abcd1</td>
<td>E-commerce</td>
<td>Marketing campaigns</td>
<td>John Smith</td>
</tr>
<tr>
<td>ins-abcd2</td>
<td>E-commerce</td>
<td>Marketing campaigns</td>
<td>Wangwu</td>
</tr>
<tr>
<td>ins-abcd3</td>
<td>Games</td>
<td>Game A</td>
<td>Jane Smith</td>
</tr>
<tr>
<td>Instance ID</td>
<td>Deployment Department</td>
<td>Business Scope</td>
<td>Owner</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ins-abcdef4</td>
<td>Games</td>
<td>Game B</td>
<td>Wangwu</td>
</tr>
<tr>
<td>ins-abcdef5</td>
<td>Entertainment</td>
<td>Post-production</td>
<td>Wangwu</td>
</tr>
<tr>
<td>ins-abcdef6</td>
<td>Entertainment</td>
<td>Post-production</td>
<td>John Smith</td>
</tr>
</tbody>
</table>

For example, we can add the following tag key-value pairs to the ins-abcdef1 instance:

<table>
<thead>
<tr>
<th>Tag Key</th>
<th>Tag Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>dept</td>
<td>ecommerce</td>
</tr>
<tr>
<td>business</td>
<td>mkt</td>
</tr>
<tr>
<td>owner</td>
<td>johnsmith</td>
</tr>
</tbody>
</table>

Similarly, you can add tag key-value pairs to other instances based on the different settings of deployment departments, business scopes, and owners.

**Specify one or more tags in the CVM console**

Take the preceding case as an example. After designing the tag key-value pairs, you can log in to the CVM console to specify the tags.

1. Log in to the CVM console.
2. On the Instances page, select the instance to be bound to the tags. In the Operation column, click More and then choose Instance Settings > Edit Tags.
3. In the You have selected 1 resource window that appears, specify the tags as required. For example, you can add three tag key-value pairs to the ins-abcdef1 instance.
4. Click OK. The system displays a message indicating that the modification was successful.

**Filters instances by tag**

If you need to query instances bound to a specified class of tags, you can perform filtering as follows:

1. In the search box, select Tag.
2. After Tag, enter the specified tag key-value pair and then click to search for the tags. For example, if you need to query CVM resources owned by John Smith, you can enter Tag:owner:johnsmith.
Edit Tags

Last updated : 2020-04-28 14:31:47

Operation Scenario

This document describes how to edit tags of resources.

Use Limits

There are several limitations on editing tags:

- Quantity: each resource can have at most 50 tags.
- Tag key limitations:
  - You cannot create tag keys that start with `qcloud`, `tencent`, and `project` as they are reserved for the system.
  - Tag keys can only contain `numbers`, `alphabet characters`, `+=.@-`, and must be less than 255 characters.
- Tag value: tag values can only contain `empty strings or numbers`, `alphabet characters`, `+=.@-`, and must be less than 127 characters.

Prerequisites

Log in to the CVM Console.

Directions

Editing the tag of a single instance

1. On the Instance management page, select the instance of which the tags need to be edited and click More > Instance Settings > Edit Tags, as shown below.
2. Add, modify, or delete tags in the “1 cloud resource(s) selected” pop-up window based on your needs.

### Editing the tags of multiple instances

You can batch edit tags of up to 20 resources at one time.

1. On the Instance management page, select the instances of which the tags need to be edited and click **More Actions** > **Instance Settings** > **Edit Tags** on the top, as shown below:

2. Add, modify, and delete tags in the “n cloud resource(s) selected” pop-up window based on your needs.

### Operation Examples

For information on how to use tags, please see [User Guide on Tags](#).
Monitoring and Alarms
Get Monitoring Statistics

Last updated : 2020-02-01 19:44:10

Scenario

Tencent Cloud provides cloud monitoring for all users by default, no need for the user to manually turn on. But the user must use Tencent Cloud products before cloud monitoring can begin to collect monitoring data; to view these monitoring data, there are several ways:

Directions

Obtain monitoring data from the cloud product console

Some cloud products provide a separate monitoring data reading tab on their own console pages. CVM is used in this example

1. Open Tencent Cloud Console, select CVM.

2. Click the CVM Instance ID from the list of CVMs to view the monitoring data, and enter the CVM details page.

3. Click the Monitor tab; on this page, you can view the CPU, memory, network bandwidth, disk and monitoring data, etc. of the CVM instance. You can also freely adjust the time range.

Obtain monitoring data from Cloud Monitor Console

On Cloud Monitoring console, you can view monitoring data for most of the products used. In this case, CVM is used as an example.

1. Open Tencent Cloud Console, select Basic Cloud Monitor.

2. On the left navigation bar, select Cloud Product Monitoring - Cloud Virtual Machine.

3. Click the CVM Instance ID from the list of CVMs displayed to view the monitoring data, and enter the monitoring details page.
4. On this page, you can view the CPU, memory, network bandwidth, disk and all monitoring data of the CVM instance. You can also freely adjust the time range.

**Obtain monitoring data through the API**

Users can use the GetMonitorData API to obtain monitoring data for all products.
Create Alarm Policies

Last updated: 2020-04-20 18:33:18

Scenario

You can create an alarm to trigger and send alarm notifications when Tencent Cloud services change statuses. The created alarm can determine whether to trigger alarm notifications based on comparison between a monitoring metric and a specified threshold at every interval. Each alarm policy is a set of trigger conditions with the logic relationship "or", that is, an alarm is triggered when any of the conditions is met. The alarm is sent to all users associated with the alarm policy. Upon receiving the alarm, you can view it and take appropriate actions in time. Creating an alarm can help you increase application reliability. For more information on alarms, see Create Alarm Policy.

Prerequisites

1. Log in to Cloud Monitor Console.

Directions

Create alarms

1. On the left sidebar, click Alarm Configuration > Alarm Policy to enter the alarm policy management page.
2. Click Add to create a new policy.
3. On the “Create Policy” page, enter the policy name, select the policy type and alarm object, and configure the trigger condition.
   The trigger condition is a semantic condition consisting of metric, comparison, threshold, statistical period, continuous periods and repeat notification policy.
4. Click Complete.

Associate Objects

1. On the left sidebar, click Alarm Configuration > Alarm Policy to enter the alarm policy management page.
2. Click the newly created alarm policy to enter the alarm policy management page.
3. Click **Add Object** on the alarm policy management page.
4. In the pop-up “Associate Alarm Object” window, select the CVM you want to associate with, and then click **Apply**.

**Configure alarm recipient objects**

1. On the left sidebar, click **Alarm Configuration** > **Alarm Policy** to enter the alarm policy management page.
2. Click the newly created alarm policy to enter the alarm policy management page.
3. Locate **Alarm Recipient Object** on the alarm policy management page, and click **Edit**.
4. In the pop-up “Alarm Recipient Object” window, select the user groups you want to notify and click **Save**.
Scenario
You can use Access to manage (Cloud Access Management, CAM) policy to let users have Permission who views and uses specific resources in the Cloud Virtual Machine (Cloud Virtual Machine, CVM) console. This document provides Permission examples of viewing and using specific resources to guide users on how to use policies for specific parts of the console.

Operation Examples

Full read-write policy for CVMs
If you want the user to have Permission who creates and manages the CVM instance, you can use a policy named: QcloudCVMFullAccess for that user. The strategy is achieved by allowing users to operate on all resources in CVM, VPC (Virtual Private Cloud), CLB (Cloud Load Balance) and MONITOR, respectively. Detailed procedure is shown below:
Refer to Authorization Management To authorize the default policy QcloudCVMFullAccess to the user

Read-only policy for CVMs
If you want the user to have Permission to query the CVM instance, but not Permission to create, delete, and switch the machine, you can use the policy named QcloudCVMInnerReadOnlyAccess for the user. This strategy is achieved by allowing the user to have actions on all actions starting with the word "Describe" and all actions starting with the word "Inquiry" in the following action CVM, Permission. The specific steps are as follows:
Refer to Authorization Management To authorize the default policy QcloudCVMInnerReadOnlyAccess to the user

Read-only policy for CVM-related resources
To allow a user to only query CVM instances and relevant resources (VPC, Load Balance), without granting him/her the permissions to create, delete, start/shut down the instances, implement the policy named QcloudCVMReadOnlyAccess.
All operations starting with "Describe" and "Inquiry" in CVM.
All operations starting with "Describe", "Inquiry" and "Get" in VPC.
All operations starting with "Describe" in Load Balance.
All operations in the monitor.

Detailed procedure is shown below:
Refer to Authorization Management To authorize the default policy QcloudCVMReadOnlyAccess to the user

**Policy for elastic cloud disks**

If you want users to view HDD cloud disk information in the CVM console and have Permission who created HDD cloud disk and used HDD cloud disk, you can first add the following actions to your policy, and then apply the policy Associate to the user.

*CreateCbsStorages*: Create a cloud disk.

*AttachCbsStorages*: Mount the specified elastic cloud disk to the specified CVM.

*DetachCbsStorages*: Unmount the specified elastic cloud disk.

*ModifyCbsStorageAttributes*: Modify the name or the project ID of the specified cloud disk.

*DescribeCbsStorages*: Query the details of a cloud disk.

*DescribeInstancesCbsNum*: Query the number of elastic cloud disks that have been mounted to a CVM and the maximum number of elastic cloud disks that are allowed to be mounted to the CVM.

*RenewCbsStorage*: Renew the specified elastic cloud disk.

*ResizeCbsStorage*: Expand the capacity of specified elastic cloud disk.

Detailed procedure is shown below:

1. According to Policy To create a custom policy that can view the information of HDD cloud disk in the CVM console, such as creating HDD cloud disk and using HDD cloud disk and other Permission. The policy content can be set by referring to the following policy syntax:

```
{
  "version":"2.0",
  "statement": [
  {
    "effect": "allow",
    "action":
    "name/cvm:CreateCbsStorages",
    "name/cvm:AttachCbsStorages",
    "name/cvm:DetachCbsStorages",
    "name/cvm:ModifyCbsStorageAttributes",
    "name/cvm:DescribeCbsStorages"
  },
  "resource":
  "qcs::cvm::uin/1410643447:*"
  ]
}
```
2. Locate the created policy, and in the actions column of the policy row, click Associate user / Group.

3. In the pop-up Associate user / user Group window, select the user / group you need to authorize, and click OK.

**Policy for security groups**

If you want the user to be able to view and use the security group in the CVM console, you can add the following action to your policy, and then apply the policy Associate to that user.

**DeleteSecurityGroup**: Delete a security group.

**ModifySecurityGroupPolicies**: Replace all the policies of a security group.

**ModifySingleSecurityGroupPolicy**: Modify a single policy of a security group.

**CreateSecurityGroupPolicy**: Create a security group policy.

**DeleteSecurityGroupPolicy**: Delete a security group policy.

**ModifySecurityGroupAttributes**: Modify the attributes of a security group.

Detailed procedure is shown below:

1. According to Policy To create a custom policy that allows users to create, delete, modify security groups, and other Permission in the CVM console

The policy content can be set by referring to the following policy syntax:

```json
{
    "version": "2.0",
    "statement": [
        {"action":
            "name/cvm:ModifySecurityGroupPolicies",
            "name/cvm:ModifySingleSecurityGroupPolicy",
            "name/cvm:CreateSecurityGroupPolicy",
            "name/cvm:DeleteSecurityGroupPolicy",
        ],
        "resource":
        "effect": "allow",
    ]
}
```

2. Locate the created policy, and in the actions column of the policy row, click Associate user / Group.
3. In the pop-up Associate user / user Group window, select the user / group you need to authorize, and click OK.

**Policy for EIPs**

If you want the user to view and use the elastic IP address in the CVM console, you can add the following action to your policy first, and then apply the policy Associate to the user.

- **AllocateAddresses**: Assign an EIP to VPC or CVM.
- **AssociateAddress**: Associate an EIP to an instance or a network interface.
- **DescribeAddresses**: View EIPs in the CVM console.
- **DisassociateAddress**: Disassociate an EIP from an instance or a network interface.
- **ModifyAddressAttribute**: Modify the attributes of an EIP.
- **ReleaseAddresses**: Release an EIP.

Detailed procedure is shown below:

- **Policy management**

  This policy allows users to view the elastic IP address in the CVM console and give its Assign to the instance and compare it to Associate, but cannot modify the attributes of the elastic IP address, cancel Associate of the elastic IP address, or release Permission of the elastic IP address. The policy content can be set by referring to the following policy syntax:

  ```json
  {
    "version": "2.0",
    "statement": [
      {
        "action": [
          "name/cvm:DescribeAddresses",
          "name/cvm:AllocateAddresses",
          "name/cvm:AssociateAddress"
        ],
        "resource": 
        "effect": "allow",
      }
    ]
  }
  ```

2. Locate the created policy, and in the actions column of the policy row, click Associate user / Group.

3. In the pop-up Associate user / user Group window, select the user / group you need to authorize, and click OK.

**Policy for authorizing users to perform operations on specific CVMs**
If you want to authorize a user to have a specific CVM operation, Permission, you can apply the following policy Associate to that user. The specific steps are as follows:

- **Policy management**
  
  This policy allows users to operate on a CVM instance whose ID is ins-1, and whose region is Guangzhou. The policy content can be set by referring to the following policy syntax:

  ```json
  {
      "version": "2.0",
      "statement": [
          {
              "action": "cvm:*",
              "resource": ["qcs::cdb:ap-guangzhou:uin/653339763:instanceId/*"]
          },
          {
              "action": "cvm:*",
              "resource": ["qcs::cvm:ap-guangzhou::*"]
          }
      ],
      "effect": "allow"
  }
  ```

2. Locate the created policy, and in the actions column of the policy row, click Associate user / Group.
3. In the pop-up Associate user / user Group window, select the user / group you need to authorize, and click OK.

**Policy for authorizing users to perform operations on the CVMs in a specific region**

If you want to authorize the user to have the operation of CVM in a specific region, Permission, you can apply the following policy Associate to that user. The specific steps are as follows:

- **Policy management**

  This policy allows users to operate on CVM machines in Guangzhou region, Permission. The policy content can be set by referring to the following policy syntax:

  ```json
  {
      "version": "2.0",
      "statement": [
          {
              "action": "cvm:*",
              "resource": ["qcs::cvm:ap-guangzhou::*"]
          }
      ],
      "effect": "allow"
  }
  ```
2. Locate the created policy, and in the actions column of the policy row, click Associate user / Group.

3. In the pop-up Associate user / user Group window, select the user / group you need to authorize, and click OK.

Granting a sub-account full permissions for CVMs with the exception of billing

Suppose that there is a sub-account (Developer), under the enterprise account (CompanyExample, ownerUin is 12345678). The sub-account needs to have all the management Permission (such as creation, management, etc.) for the CVM service of the enterprise account, but does not include payment for Permission (orders can be placed but cannot be paid).

We can achieve this through the following two scenarios:

- **Option A**
  The CompanyExample enterprise account directly authorizes the preset policy QcloudCVMFullAccess to the Developer sub-account. For more information about authorization, see [Authorization Management](#).

- **Option B**
  1. Create a **Custom Policy**.

```json
{
  "version":"2.0",
  "statement":
  {
    "effect":"allow",
    "action": "cvm:*",
    "resource":
  }
}
```

2. Authorize the policy to the sub-account. For more information on authorization, see [Authorization Management](#).

**The sub-account is granted to have the operation of project management, Permission.**

Suppose that under the enterprise account (CompanyExample, ownerUin is 12345678), there is a sub-account (Developer), that needs to manage resources on the console based on the project authorization sub-account.

Detailed procedure is shown below:
1. Create a custom strategy for project management according to the business Permission.

2. Authorize the policy to the sub-account. For more information on authorization, see Authorization Management.

   If a sub-account is not prompted by Permission when doing project management, such as viewing snapshot, Image, VPC, elastic public network IP and other products without Permission, you can authorize the default policies of sub-account QcloudCVMAccessForNullProject, QcloudCVMOrderAccess and QcloudCVMLaunchToVPC. Please refer to the authorization method. Authorization Management.

**Custom policy**

If you feel that the preset policy does not meet your requirements, you can do so by creating a custom policy.
For detailed directions, see Creating a Cluster.
For more policy syntax related to CVM, please refer to Authorization policy syntax.